BUREAU OF RECLAMATION

Technical Memorandum for the Upper Red River Basin Study

Formulation of Hydrologic Thresholds to Support Water Management in the Lugert-Altus Reservoir Hydrologic Basin

March 2023

BUREAU OF RECLAMATION

State of Oklahoma
OWRB
WATER RESOURCES BOARD
the water agency

Contents

PART I: INTRODUCTION

Background and Goals

This Technical Memorandum (TM) was developed in support of the Upper Red River Basin Study (URRBS). Among the many water management strategies identified in the URRBS was the adoption of hydrologic thresholds that could be used to manage water in the Lugert-Altus Reservoir hydrologic basin. The reader is strongly encouraged to read the URRBS report for a thorough understanding on the background and need for such a strategy, but for the purposes of this TM, only a brief explanation is provided.

Under Oklahoma statute, junior stream permit holders are not allowed to interfere with senior permit holders by taking their water out-of priority ahead of a senior permit holder. A senior permit holder can file a complaint with the OWRB, but Oklahoma statutes do not set forth any specific authority for the OWRB to be proactive in protecting an individual claimant's water rights from interference by others (Kershen, 2021). Yet, assuming the OWRB has authority to create an administrative enforcement procedure to protect senior priority stream-water permits, OWRB could create an administrative procedure to stop or prevent interference with senior priority rights or to prevent out-of-priority use of water rights. What is lacking in the statutes, the regulations, and the case law is any definition of interference or any identification of thresholds that can be invoked to protect the water rights of senior holders (Kershen, 2021). To this end, it was contemplated that Lugert-Altus Irrigation District, who holds a right to agricultural irrigation water out of Lugert-Altus Reservoir, could collaborate with the Oklahoma Water Resources Board (OWRB), who has authority to issue stream permits in Oklahoma, to identify hydrologic ("interference") thresholds that define when interference by junior stream permit holders is occurring against senior stream permit holders. These hydrologic thresholds could take into

account the relevant hydrological conditions and needed reservoir yield specific to the NFRR and Lugert-Altus Reservoir, respectively, and then OWRB could adopt those thresholds into new interference regulations that are specific to the Lugert-Altus Reservoir hydrologic basin.

However, for various reasons described in the URRBS report, namely the minor volume of stream permits in the basin, study partners decided to eliminate from further consideration the strategy of managing or otherwise curtailing junior stream-water permits upstream of Lugert-Altus Reservoir. Rather, study partners wanted to focus the URRBS evaluation on identifying hydrologic thresholds that could be used to manage permitted alluvial groundwater pumping upstream of Lugert-Altus Reservoir, which was known through the URRBS has having a far greater impact on reservoir supplies than existing stream permits. Although such a strategy would likely require a future change in Oklahoma law that reclassified certain alluvial groundwater above Lugert-Altus Reservoir to stream water, it was considered by Lugert-Altus Irrigation District to be a preferred strategy worthy of detailed consideration in the URRBS. This option is discussed at length in the URRBS, Chapter 7.2.5 and Chapter 8.2.5 of the URRBS report under: "Reclassification of Alluvial Groundwater to Stream-Water". This TM describes the methods and assumptions used to identify the range of thresholds that could be used for such a purpose. Importantly, regardless of the findings presented in this TM, under no circumstance were any of the thresholds be recommended for implementation as part of the URRBS. The authority to implement such measures resides solely with the OWRB.

Overview

This TM is divided into six Parts:

Part I: This section describes the goals of this TM and establishes definitions of key terminology.

Part II: This section identifies a range of drought indicators that exist both nationally and globally. Several screening criteria were applied to narrow these down to only a few indicators for further consideration. These were considered both individually and in combination with one another in Part III.

Part III: This section analyzes the indicators selected in Part II in terms of their ability to predict observed, historical droughts – both individually and in combination. Seventeen drought definitions (scenarios) were identified. Predictive models were built through logistic regression to test how well these indicators explain the variation involved in predicting drought. The relative performance of the logistic regression models was tested using standard techniques to see how well model predictions match up with observed droughts (as defined by the drought scenarios) over seven different model periods. Through this analysis, the list of indicators selected in Part II was narrowed down to two regional indicators for further testing: Palmer Hydrological Drought Index (PHDI) and Standard Precipitation Index (SPI). These indicators were found to perform better in combination with inflow than when considered individually.

Part IV: This section focuses specifically on the logistic regression models derived by the two regional indicators selected in Part III (PHDI and SPI) in combination with inflow, and evaluates the impact that each drought scenario and model period have on model performance. Through this analysis, of the 17 drought scenarios originally considered, thirteen were carried forward for further analysis for the inflow-PHDI models, and eleven were carried forward for further analysis for the inflow-SPI models. Similarly, of the seven model periods considered, four were carried forward for further analyses.

Part V: This section focuses on how well the full range of 882 potential thresholds predict observed, historical conditions as defined by the droughts and model periods that are selected in Part IV. The analysis evaluated 441 inflow-PHDI thresholds and 441 inflow-SPI thresholds. Each combination of thresholds was analyzed using proven atmospheric science methods used to test meteorological forecasting. Of the 882 threshold combinations considered, a total

of eight thresholds (four inflow-PHDI and four inflow-SPI thresholds) were selected as preferred thresholds that would make up the Hydrologic Threshold Alternatives described in Part VI.

Part VI. This section describes the final formulation of Hydrologic Threshold Alternatives. The Alternatives were derived in part by the indicators and thresholds selected through Parts II-V, but other important factors were considered, namely conditions at the reservoir itself and the timing of Hydrologic Thresholds.

Definitions

1. **Trigger**: a "threshold" that when reached, signals "action" during the onset or occurrence of a "drought".
2. **Threshold**: numerical value(s) of a Regional Drought Index or Local Drought Indicator.
3. **Regional Drought Index (RDI)**: a cumulative measurement or calculation of a combination of "Local Drought Indicators". Typically detects conditions on a regional scale.
4. **Local Drought Indicator (LDI)**: a parameter used to describe the type and severity of drought. Typically detects conditions on a local scale.

For example, the *Standard Precipitation Index (SPI)* is a "RDI" of the "LDI", *Precipitation*; if SPI falls below a "threshold" of - *2*, then a management action (i.e., water right curtailment) would be "triggered".

5. **Drought**: the term "drought" can be defined in many different ways as discussed in Part III. Generally, four types of commonly accepted droughts exist, listed in order of progression. Different indicators and indices can be used to monitor the onset, duration, and end of different types of droughts:

a. *Meteorological*: prolonged period of time when precipitation is below normal, often accompanied by higher temperatures.

b. *Agricultural*: the combined precipitation and temperature conditions cause a reduction in soil moisture that negatively affects crop growth.

c. *Hydrological*: conditions progress and cause a reduction in the groundwater table, streamflow, and reservoir storage.

d. *Socioeconomic*: conditions progress to a point where extended periods of reduced water availability affect social, ecological, and/or economic well-being and viability.

For the purposes of this analysis, "drought" was defined from a hydrological perspective in terms of observed water availability over the period of record. Fifteen drought definitions were identified, ranging from deviations in long-term mean and median streamflow, deviations in precipitation and temperature, and reductions in reservoir storage.

6. **Action**: for the purpose of this analysis, action was defined as curtailment of a water right. Specifically, the URRBS report anticipated that the action would entail the management of permitted alluvial groundwater pumping upstream of Lugert-Altus Reservoir, which was known through the URRBS has having a far greater impact on reservoir supplies than existing stream permits. The reader is encouraged to review Chapter 7.2.5 and Chapter 8.2.5 of URRBS report for an analysis of this water management strategy.

Types of RDIs

Several Drought Indicators and Indices exist both nationally and globally. Two notable and relevant publications are summarized in Table 1 and Table 2 below. It is worth noting that the indices cited below focus exclusively on detecting meteorological, agricultural, and/or hydrologic droughts. Detecting/measuring a socioeconomic drought is not within the scope of this RDI analysis:

1. Table 1 summarizes the "Handbook of Drought Indicators and Indices" (World Meteorological Organization (WMO) and Global Water Partnership (GWP), 2016).
2. Table 2 summarizes "The Quantification of Drought: An Evaluation of Drought Indices" (Keyantash and Dracup, 2002).

Table 1. Summary of commonly used RDIs and input parameters for three types of drought: Meteorological, Agricultural, and Hydrological, along with an ease of use classification where resource needs increase from green (low) to yellow (moderate) to red (high). (Adapted from WMO and GWP, 2016.)

Meteorological Drought	Ease of Use[1]	Indicator/Input Parameters[2]	Additional Information
Aridity Anomaly Index (AAI)	Green	P, T, PET, ET	Operationally available for India
Deciles	Green	P	Easy to calculate; examples from Australia are useful
Keetch–Byram Drought Index (KBDI)	Green	P, T	Calculations are based upon the climate of the area of interest
Percent of Normal Precipitation	Green	P	Simple calculations
Standardized Precipitation Index (SPI)	Green	P	Highlighted by the World Meteorological Organization as a starting point for meteorological drought monitoring
Weighted Anomaly Standardized Precipitation (WASP)	Green	P, T	Uses gridded data for monitoring drought in tropical regions
Aridity Index (AI)	Yellow	P, T	Can also be used in climate classifications
China Z Index (CZI)	Yellow	P	Intended to improve upon SPI data
Crop Moisture Index (CMI)	Yellow	P, T	Weekly values are required
Drought Area Index (DAI)	Yellow	P	Gives an indication of monsoon season performance
Drought Reconnaissance Index (DRI)	Yellow	P, T	Monthly temperature and precipitation are required
Effective Drought Index (EDI)	Yellow	P	Program available through direct contact with originator
Hydro-thermal Coefficient of Selyaninov (HTC)	Yellow	P, T	Easy calculations and several examples in the Russian Federation
NOAA Drought Index (NDI)	Yellow	P	Best used in agricultural applications
Palmer Drought Severity Index (PDSI)	Yellow	P, T, AWC	Not green due to complexity of calculations and the need for serially complete data

Meteorological Drought Cont.	Ease of Use[1]	Indicator/Input Parameters[2]	Additional Information
Palmer Z Index	Yellow	P, T, AWC	One of the many outputs of PDSI calculations
Rainfall Anomaly Index (RAI)	Yellow	P	Serially complete data required
Self-Calibrated Palmer Drought Severity Index (sc-PDSI)	Yellow	P, T, AWC	Not green due to complexity of calculations and serially complete data required
Standardized Anomaly Index (SAI)	Yellow	P	Point data used to describe regional conditions
Standardized Precipitation Evapotranspiration Index (SPEI)	Yellow	P, T	Serially complete data required; output similar to SPI but with a temperature component
Agricultural Drought/Soil Moisture	**Ease of use[1]**	**Indicator/Input Parameters[2]**	**Additional Information**
Soil Moisture Anomaly (SMA)	Yellow	P, T, AWC	Intended to improve upon the water balance of PDSI
PDSI Evapotranspiration Deficit Index (ETDI)	Red	Mod	Complex calculations with multiple inputs required
Soil Moisture Deficit Index (SMDI)	Red	Mod	Weekly calculations at different soil depths; complicated to calculate
Soil Water Storage (SWS)	Red	AWC, RD, ST, SWD	Owing to variations in both soil and crop types, interpolation over large areas is challenging
Hydrologic Drought	**Ease of use[1]**	**Indicator/Input Parameters[2]**	**Additional Information**
Palmer Hydrological Drought Severity Index (PHDI)	Yellow	P, T, AWC	Serially complete data required
Standardized Reservoir Supply Index (SRSI)	Yellow	RD	Similar calculations to SPI using reservoir data
Standardized Streamflow Index (SSFI)	Yellow	SF	Uses the SPI program along with streamflow data
Standardized Water-level Index (SWI)	Yellow	GW	Similar calculations to SPI, but using groundwater or well-level data instead of precipitation
Streamflow Drought Index (SDI)	Yellow	SF	Similar calculations to SPI, but using streamflow data instead of precipitation

Hydrologic Drought Cont.	Ease of Use[1]	Indicator/Input parameters[2]	Additional Information
Surface Water Supply Index (SWSI)	Yellow	P, RD, SF, S	Many methodologies and derivative products are available, but comparisons between basins are subject to the method chosen
Aggregate Dryness Index (ADI)	Red	P, ET, SF, RD, AWC, S	No code, but mathematics explained in the literature
Standardized Snowmelt and Rain Index (SMRI)	Red	P, T, SF, Mod	Can be used with or without snowpack information

[1]Indicators and indices are sorted by 'ease of use' and then alphabetically within each 'ease of use' category.

[2]Key to variables:

AWC = available water content
CC = crop coefficient
CD = crop data
ET = evapotranspiration
GW = groundwater
Mod = modelled
Multiple = multiple indicators used
P = precipitation
PET = potential evapotranspiration
Rad = solar radiation
RD = reservoir
S = snowpack
SF = streamflow
ST = soil type
SWD = soil water deficit
T = temperature
Td = dewpoint temperature
W = wind data

Table 2. Summary of drought indicators and indices taken from Keyantash and Dracup, 2002.

Drought Index	Drought Indicator / Input Parameter	Type of Drought
Discrete, Cumulative Precipitation	Precipitation	Meteorological
Computed Soil Moisture	Soil Moisture	Agricultural
Total Water Deficit	Streamflow	Hydrologic
Cumulative Streamflow Anomaly	Streamflow	Hydrologic

Another Indicator of a Hydrologic Drought is **Reservoir Storage**. As such, Reservoir Storage is included as an input parameter in the Standardized Reservoir Supply Index (SRSI) and Surface Water Supply Index (SWSI) listed in Table 1. These indices are useful in measuring drought conditions on a regional scale, such as a river basin, and can take into account multiple variables including snowpack, precipitation, streamflow, and storage levels of more than one reservoir. In lieu of calculating an RDI such as SRSI or SWSI, reservoir storage can be used either alone or in combination with other parameters, such as streamflow, to trigger water management actions. Current examples include the Integrated Management Plan for the Republican River (2016) and the Colorado River Drought Contingency Plan (2019).

PART II: INITIAL RDI SCREENING

Before discussing the methods used to select drought indicators/indices, it should be recognized that no "one size fits all" exists. Flexibility and adaptability are key. It often takes a system of trial and error to determine the best fit for any given location, area, basin or region. In light of the goals established under Part I, one or more indicators/indices should be selected that is useful at monitoring/detecting conditions directly at the **reservoir (i.e., LDI)**, and one or more indicators/indices should be selected that is useful for monitoring/detecting conditions for the **entire basin (i.e., RDI)**. For the reservoir, calculation of an index is not required. Two obvious LDIs selected are:

- Streamflow/Inflow into Lugert-Altus Reservoir
- Lugert-Altus Reservoir storage

For the basin, the selection of one or more RDIs is needed to combine with the two LDIs. Numerous criteria were used to help aid in the selection of the RDIs. The following criteria were adapted from guidance provided by two sources: WMO and GWP (2016); and Keyantash and Dracup (2002).

Evaluation Criteria:

1. Allows for timely detection of the onset of a drought that is severe enough to trigger appropriate communication and coordination of drought response or mitigation actions, but which is not overly sensitive, meaning it either falsely indicates the onset of a drought or indicates the onset of only a abnormally dry period (Jolliffe et al, 2012).
2. Must be relevant to the issues and conditions within the region of interest, namely water rights management in western Oklahoma.
3. Must be responsive and reflective of the impacts occurring on the ground both on a local scale (i.e., at Lugert-Altus Reservoir) and on a regional scale (i.e., the North Fork Red River hydrologic basin).

4. Data must exist over a long period of record, thus allowing for strong historical and/or statistical correlations.
5. Must provide value added and avoid redundancy with another indices.
6. Must be relatively easy to calculate, monitor, and implement, with preference given towards one or more indices that are readily available and calculated by independent third-parties. For example:
    - The U.S. Drought Monitor (USDM), through a partnership between the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln, the U.S. Department of Agriculture (USDA), and the National Oceanic and Atmospheric Administration (NOAA), produce weekly drought reports for the U.S, including Oklahoma. Numeric inputs into the drought report include PDSI and SPI, among others.
    - The OWRB produces a monthly "Water Resources Bulletin" that includes various climate/weather statistics by climate division across Oklahoma, including but not limited to precipitation, soil moisture, streamflow/inflow, PDSI, SPI, and reservoir storage (OWRB, 2019). Drawing largely, upon products and information developed by the NDMC and USDM described above, the Bulletin provides a monthly drought status and outlook.
7. Must have a proven record of use/applicability in the U.S.

RDIs Considered but Eliminated

- These criteria were applied to the full list of indicators/indices cited in the previous section. Most of the indicators/indices were eliminated because they did not meet the selection criteria.
- "Composite/Hybrid" Indices were also considered, namely the U.S. Drought Monitor, which uses a combination of PDSI, soil moisture, streamflow, and SPI to assign Drought Categories (e.g., D0-D5) on a weekly basis on a varying spatial scale (county, watershed, etc.). Drought

Categories for western Oklahoma have been assigned since the year 2000. This Index did not meet the aforementioned criterion which prioritizes datasets that exist over a long period of record, and thus support relatively strong historical and/or statistical correlations.

RDIs Advanced for Further Consideration

The following three RDIs were not eliminated and are therefore carried forward for further analysis as potential triggers.

- **PDSI**: targets detection of agricultural/hydrologic drought conditions on a region/basin scale; uses a soil model to calculate the onset and ending of a drought through the trending of soil moisture conditions.
- **PHDI**: targets detection of hydrologic drought conditions on a region/basin scale; very similar to PDSI and uses the same soil model, but PHDI lags further because it calculates the onset and ending of a drought by a more defined threshold. In other words, while PDSI calculates conditions that are either trending as wet or dry, PHDI calculates whether a wet or dry condition either exists or does not).
- **SPI**: has the potential to target any of the three types of drought. Here, we selected 12-month SPI, which is used to detect hydrologic drought conditions on a region/basin scale.

Figure 1 below summarizes the results thus far:

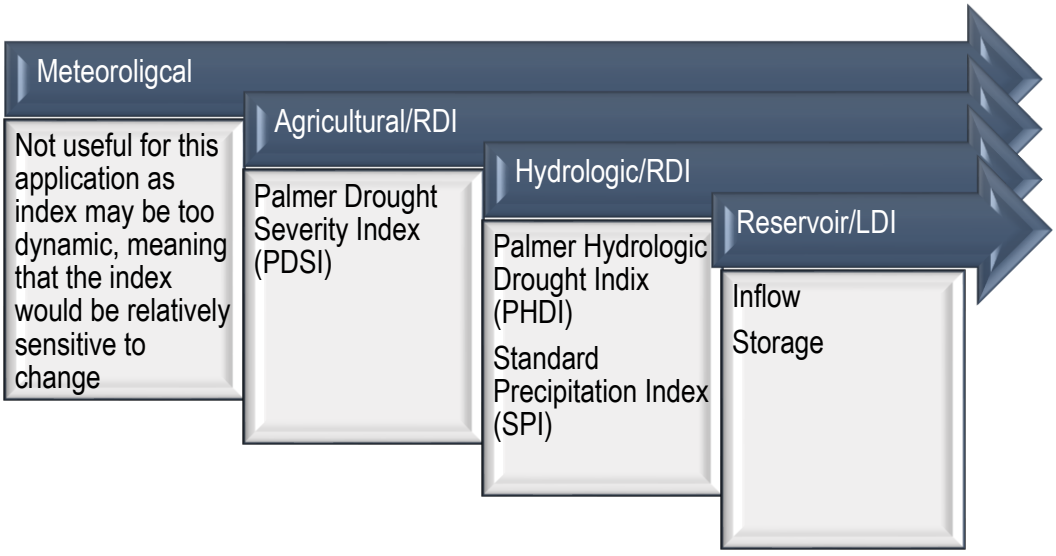

Figure 1. Summary of indicators and indices, including the corresponding drought and domain of applicability, that were selected for further examination.

PART III: EVALUATE AND SELECT RDI

Approach

In this section, the three RDIs selected in Part II were tested in terms of their ability to predict observed, historical droughts. After providing an inventory of baseline conditions over the historical record, multiple drought definitions (scenarios) were proposed. Predictive models were then built through logistic regression to test how well inflow, PDSI, PHDI, and SPI predicted these drought scenarios. The relative performance of the logistic regression models was tested in terms of how well model predictions match up with observed droughts (as defined by the drought scenarios) over the model period. This was done by calculating the Adjusted Deviance R^2 and Bayesian Information Criterion (BIC), both of which are discussed in detail below.

Selecting a Climate Division for Lugert-Altus Reservoir

PDSI, PHDI, and SPI are produced by NOAA's National Climate Data Center (NCDC). Monthly data are available from 1895 to present for nine "Climate Divisions" across the state (Figure 2). The Lugert-Altus Reservoir watershed encompasses Climate Divisions 4 and 7 (Figure 3). A comparison of PDSI between both divisions is provided in Figure 4.

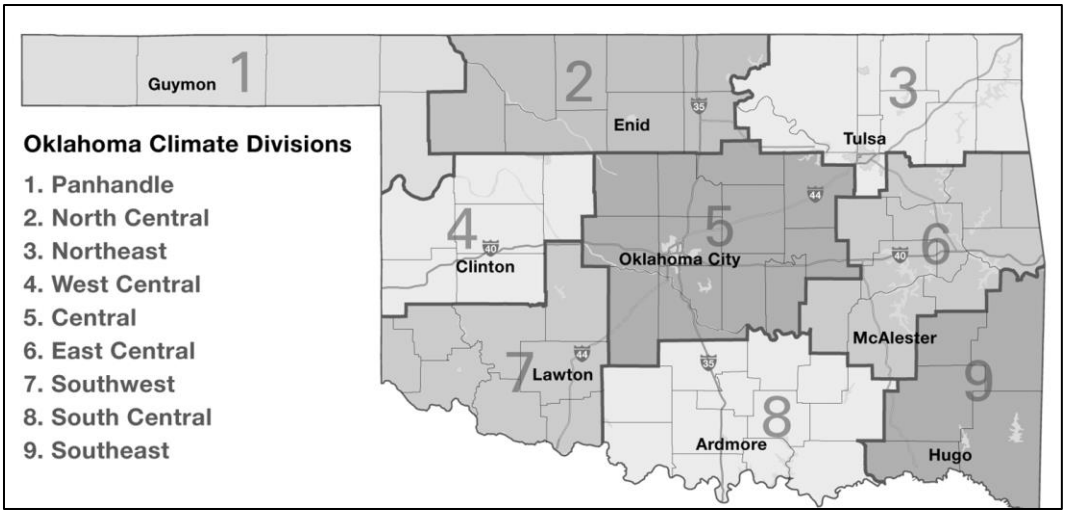

Figure 2. Oklahoma Climate Divisions according to NOAA's National Climate Data Center.

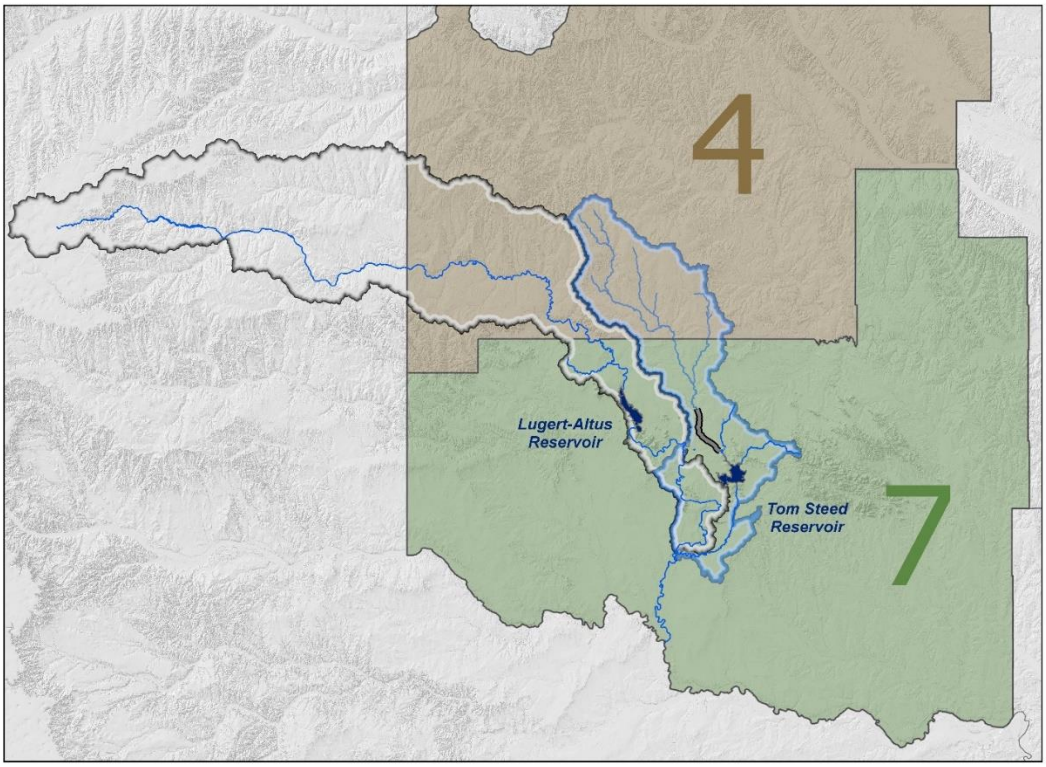

Figure 3. Oklahoma Climate Divisions according to NOAA's National Climate Data Center

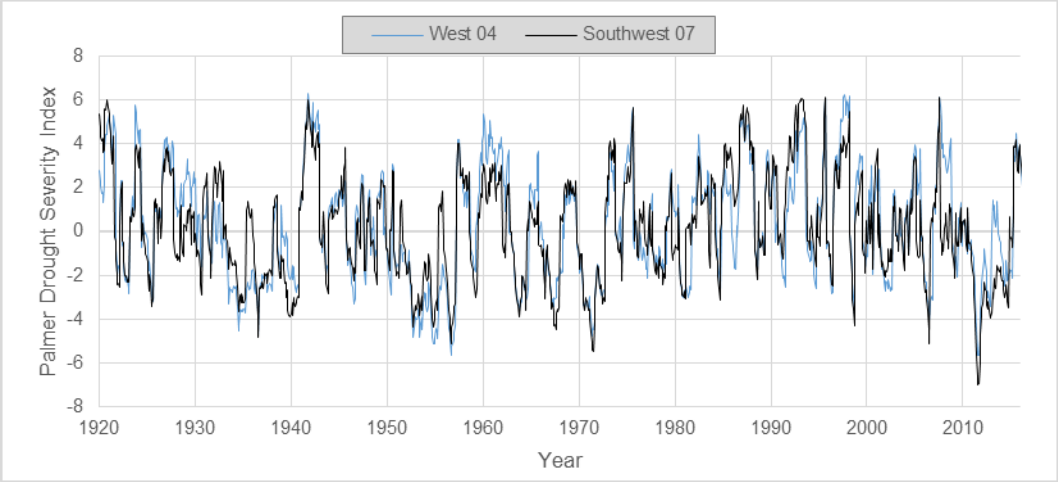

Figure 4. A comparison of PDSI between two climate divisions in western Oklahoma.

Overall, the two Climate Divisions showed similar observed PDSI values; however, the values diverged at times during historical droughts. For example, Climate Division 4 experienced a more significant drought (i.e., lower PDSI) during the 1950s drought but a less significant drought (i.e., higher PDSI) during the 2010s drought. Next, a statistical analysis was performed to determine how various drought indices produced by NOAA for the two climate divisions correlated with inflow into Lugert-Altus Reservoir (Table 3). The West Central (04) climate division resulted in higher correlation coefficients for Inflow and each monthly RDI the same or better correlation coefficients for the running 12-month average for each RDI. Based on this comparison, the West Central (04) climate division was selected to present baseline conditions and for further analysis in the Lugert-Altus Reservoir Hydrologic Basin.

Table 3. A comparison of Correlation Coefficients between drought indices and observed inflow into Lugert-Altus Reservoir at two NOAA climate divisions in southwest Oklahoma.

	NOAA Climate Division	
Drought Index	**West Central 04**	**Southwest 07**
Palmer Drought Severity Index	0.36	0.34
Palmer Drought Severity Index (Running 12-month Average)	0.64	0.64
Palmer Hydrological Drought Index	0.33	0.30
Palmer Hydrological Drought Index (Running 12-month Average)	0.61	0.61
Standardized Precipitation Index	0.42	0.38
12-month Standardized Precipitation Index	0.68	0.30

Note: All the correlation coefficients in the table were significant at the five percent significance level (α=0.05)—
$|r_{critical}|$=0.206 for n = (2016-1926+1)=91, degrees of freedom, df = (91-2)=89.

Baseline Conditions

Baseline inflow and RDI conditions are presented for the period of record 1926-2016 as monthly data and/or as standardized frequency distributions of running 12-month totals and/or averages. While RDI data are presented as running 12-month averages, inflow data are presented as running 12-month totals to be consistent with reservoir storage calculations. Twelve months was selected as the optimum time lag to evaluate Inflow-RDI conditions, including the occurrence of drought, because it reduces the variability of conditions observed over shorter 3- and 6-month (seasonal) time lags while avoiding the "smoothing out" of conditions observed over longer 18- and 24-month time lag. This was further demonstrated by comparing slopes of the lines that indicate RDI-inflow correlations over various time lags (Figure 5).

Running 12-month total inflow, along with its frequency distribution, is presented in Figure 6. Monthly PDSI, PHDI, and SPI are presented in Figure 7, Figure 9, and Figure 11, respectively. The frequency distribution of standardized PDSI, PHDI, and SPI is presented in Figure 8, Figure 10, and Figure 12,

respectively. Standardized percentile conditions for inflow and RDIs are presented individually (Table 4) and in combination (Table 5, Table 6, and Table 7).

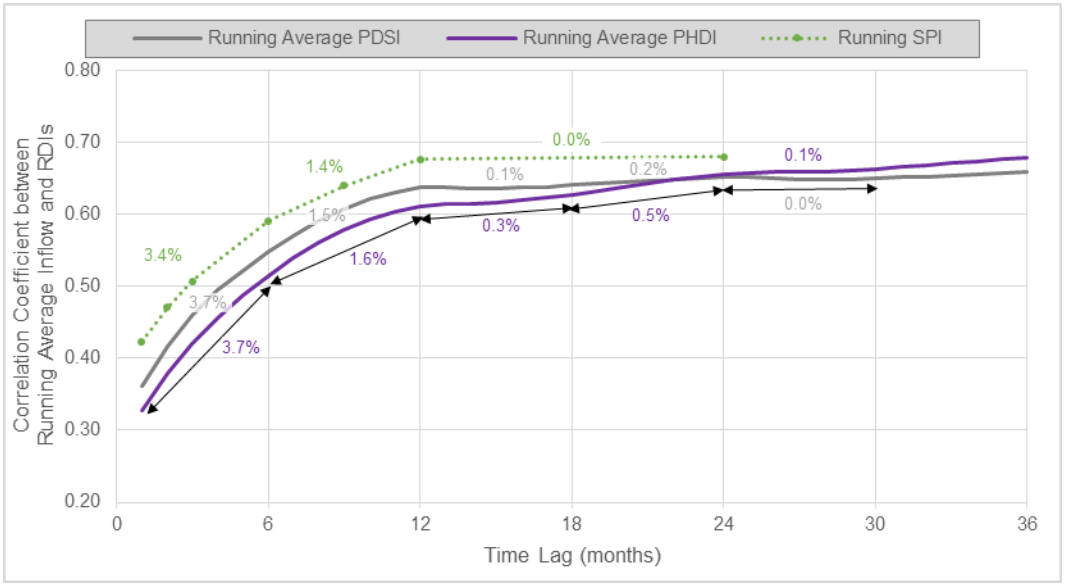

Figure 5. Correlation Coefficients between the running average Inflow and each RDI across time lags from one to 36 months. The slopes of each line between time lag intervals are indicated as percentages below the line. Note: hashed line for SPI denotes interpolated data because data are not available at all time intervals.

Inflow – Running 12-month total and Distribution of running 12-month total

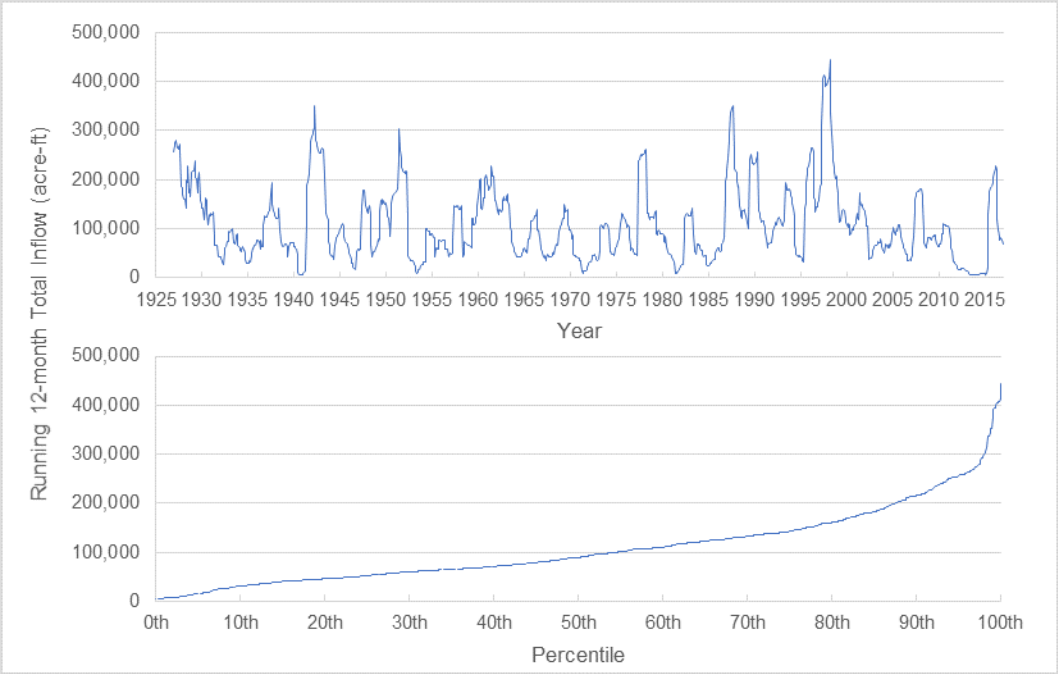

Figure 6. Running 12-month total inflow (top) and frequency distribution (bottom) of inflow over the period of record (1926-2016).

Regional Drought Indices: PDSI, PHDI, and SPI

PDSI – Monthly

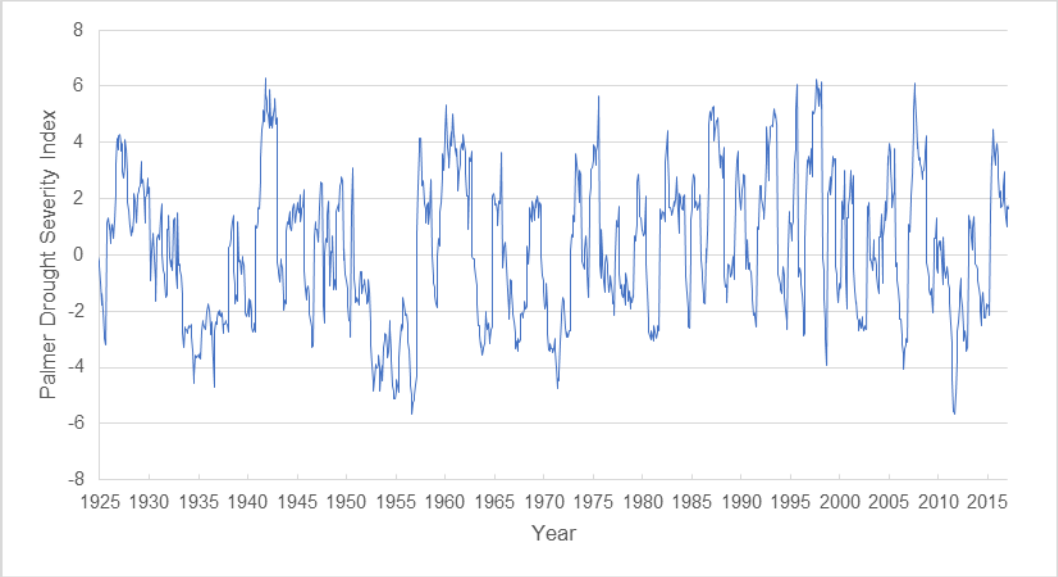

Figure 7. Monthly PDSI over the period of record (1926-2016).

PDSI – Running 12-month average

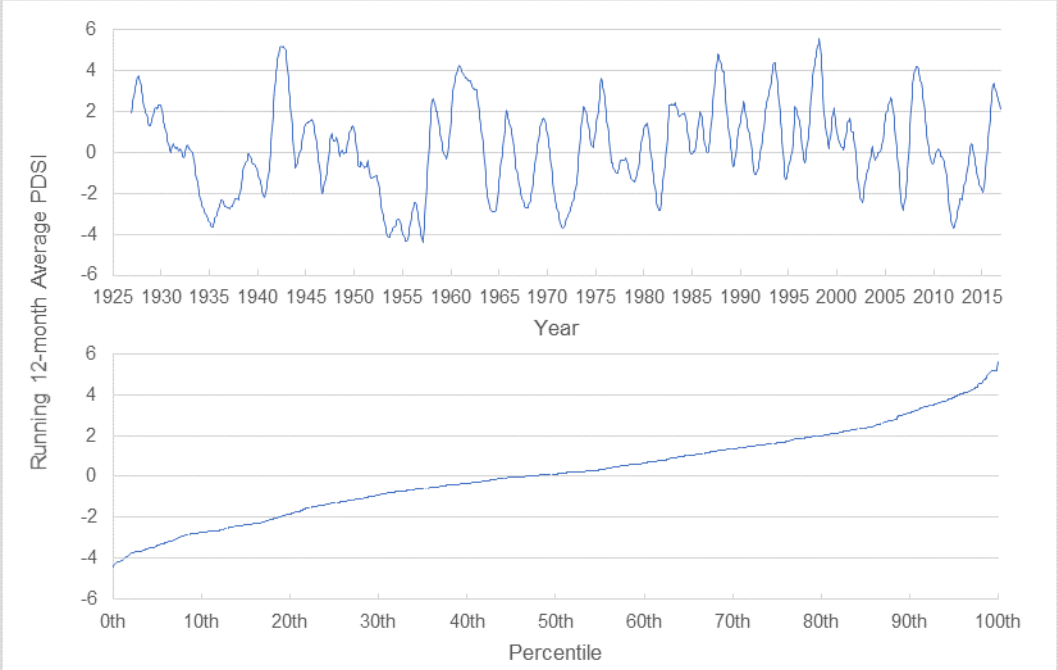

Figure 8. Running 12-month average (top) and frequency distribution (bottom) of PDSI over the period of record (1926-2016).

PHDI – Monthly

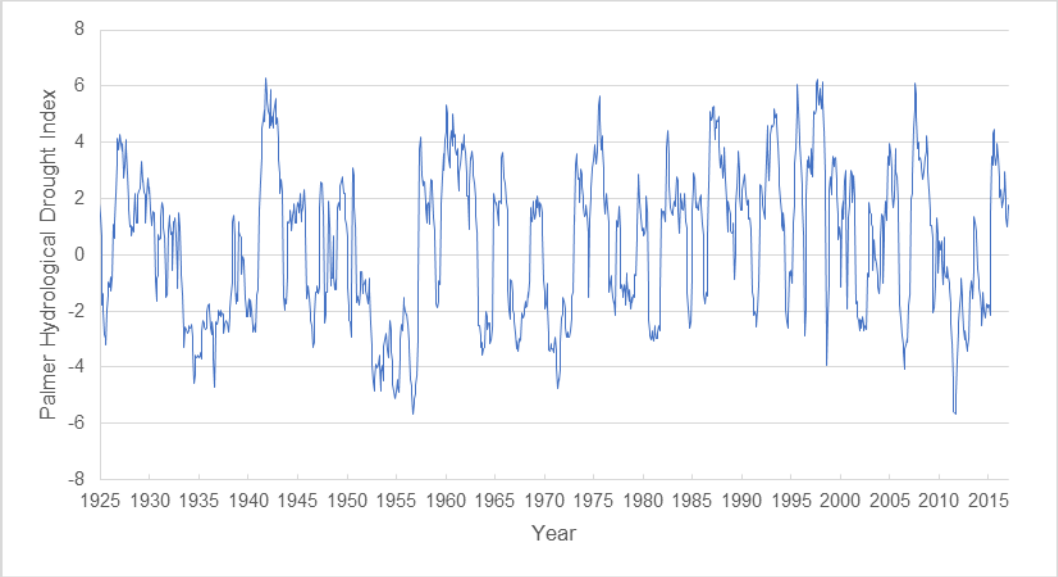

Figure 9. Monthly PHDI over the period of record (1926-2016).

PHDI – Running 12-Month Average

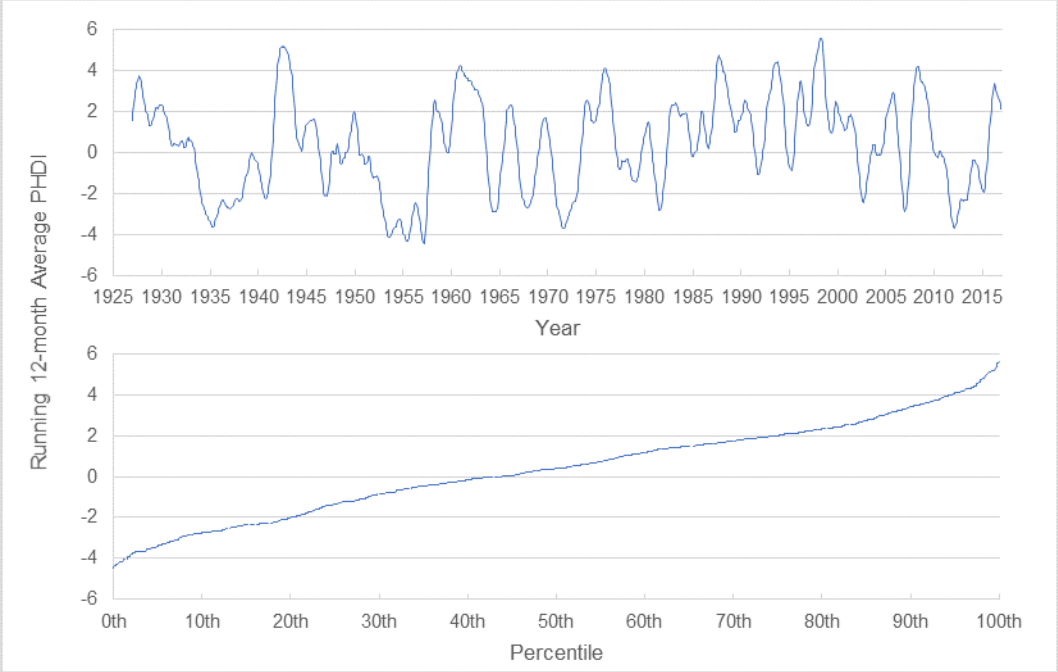

Figure 10. Running 12-month average (top) and frequency distribution (bottom) of PHDI over the period of record (1926-2016).

SPI - Monthly

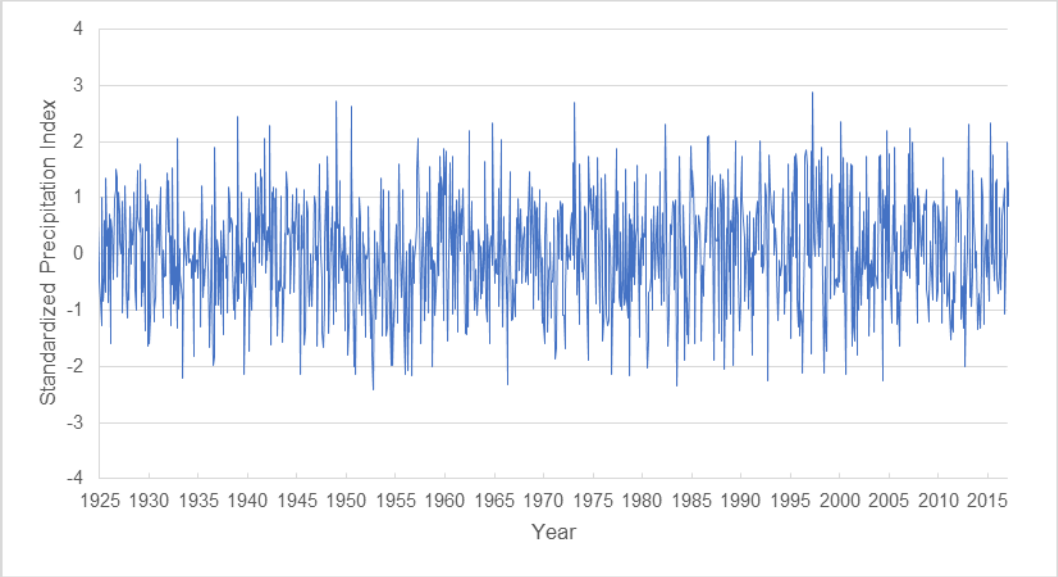

Figure 11. Monthly SPI over the period of record (1926-2016).

12-Month SPI

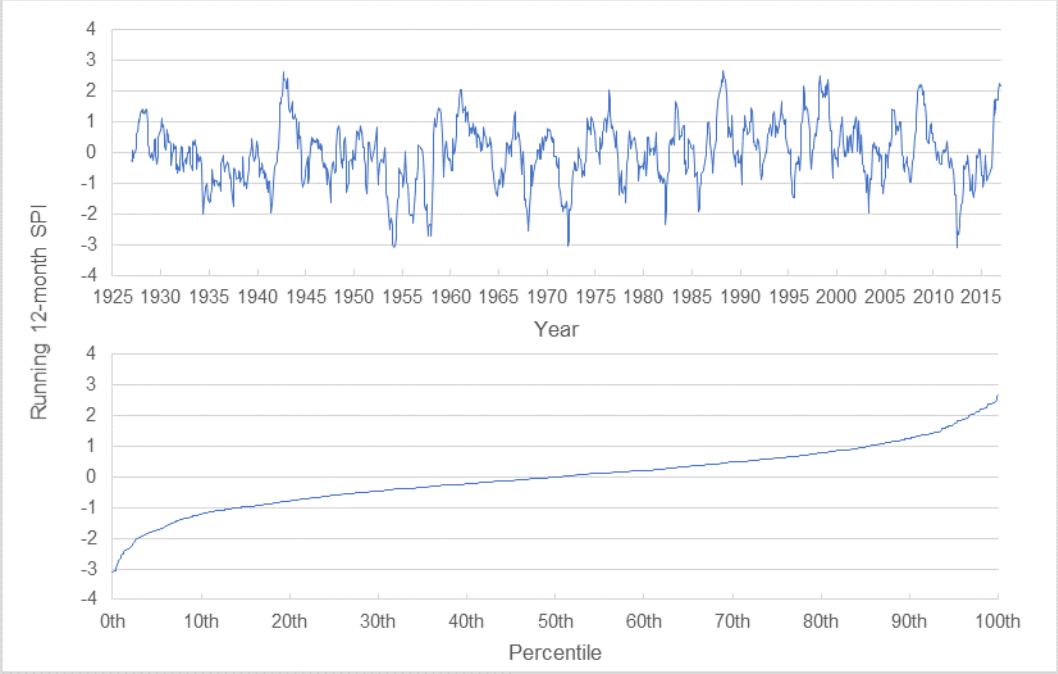

Figure 12. Running 12-month (top) and frequency distribution (bottom) of SPI over the period of record (1926-2016).

Table 4. Standardized distribution of inflow, PDSI, PHDI, and SPI over the period of record (1926-2016).

Percentile	Running 12-month Total Inflow (acre-ft)	Running 12-month Average Palmer Drought Severity Index (PDSI)	Running 12-month Average Palmer Hydrological Drought Index (PHDI)	Running 12-month Standardized Precipitation Index (SPI)
0th	4,600	-4.41	-4.45	-3.09
5th	15,300	-3.37	-3.40	-1.75
10th	30,700	-2.74	-2.75	-1.22
15th	40,400	-2.36	-2.36	-0.99
20th	45,800	-1.83	-2.02	-0.79
25th	52,900	-1.28	-1.35	-0.60
30th	59,900	-0.91	-0.86	-0.47
35th	65,100	-0.58	-0.45	-0.35
40th	70,700	-0.33	-0.17	-0.23
45th	79,100	-0.05	0.05	-0.12
50th	89,100	0.12	0.39	-0.01
55th	101,500	0.32	0.74	0.11
60th	110,000	0.65	1.18	0.19
65th	122,500	1.02	1.49	0.34
70th	132,400	1.35	1.72	0.49
75th	142,700	1.63	1.99	0.60
80th	160,200	1.99	2.33	0.77
85th	182,500	2.36	2.73	0.97
90th	214,800	3.09	3.42	1.25
95th	256,200	3.86	4.06	1.72
100th	444,600	5.58	5.60	2.68

Table 5. Occurrence (percentiles) of combined inflow/PDSI thresholds over the period of record (1926-2016).

Occurrence of Threshold Combinations (Non-Exceedance Frequency)			12-month Running Average PDSI Thresholds																			
			-4.41	-3.37	-2.74	-2.36	-1.83	-1.28	-0.91	-0.58	-0.33	-0.05	0.12	0.32	0.65	1.02	1.35	1.63	1.99	2.36	3.09	3.86	5.58
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Total Inflow Threshold (acre-ft)	4,600	0th	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15,300	5th	0	1	1	1	2	3	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5
	30,700	10th	0	2	4	4	6	7	7	8	8	9	10	10	10	10	10	10	10	10	10	10	10
	40,400	15th	0	3	5	6	9	11	11	12	12	13	14	14	15	15	15	15	15	15	15	15	15
	45,800	20th	0	3	6	8	11	13	14	15	16	17	18	19	19	20	20	20	20	20	20	20	20
	52,900	25th	0	4	7	10	13	15	17	18	19	21	22	23	24	24	24	25	25	25	25	25	25
	59,900	30th	0	4	7	11	14	18	20	21	23	24	26	27	28	28	29	29	30	30	30	30	30
	65,100	35th	0	4	8	11	15	19	21	23	25	27	29	31	32	33	33	34	35	35	35	35	35
	70,700	40th	0	4	8	12	16	19	22	25	27	30	32	34	36	37	37	38	39	40	40	40	40
	79,100	45th	0	4	9	13	17	21	24	27	30	32	35	38	39	40	41	42	44	44	45	45	45
	89,100	50th	0	5	9	14	18	22	25	28	31	34	37	40	42	43	45	46	48	49	50	50	50
	101,500	55th	0	5	10	14	18	22	26	29	32	36	40	43	45	47	49	50	52	53	54	55	55
	110,000	60th	0	5	10	14	18	22	26	29	33	37	41	45	48	50	52	54	56	58	59	60	60
	122,500	65th	0	5	10	14	19	23	27	31	34	38	43	47	50	53	55	58	60	62	64	65	65
	132,400	70th	0	5	10	15	19	24	28	32	35	40	44	49	52	55	58	61	64	67	69	70	70
	142,700	75th	0	5	10	15	20	24	28	33	36	41	45	50	54	57	60	64	67	70	73	75	75
	160,200	80th	0	5	10	15	20	25	29	33	37	41	46	51	55	60	64	67	71	74	77	80	80
	182,500	85th	0	5	10	15	20	25	29	34	38	42	47	52	57	62	66	70	74	77	81	84	85
	214,800	90th	0	5	10	15	20	25	29	34	38	43	48	53	58	63	67	72	76	80	84	88	90
	256,200	95th	0	5	10	15	20	25	30	35	40	45	50	55	60	65	69	74	79	84	88	92	95
	444,600	100th	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

Table 6. Occurrence (percentiles) of combined inflow/PHDI thresholds over the period of record (1926-2016).

Occurrence of Threshold Combinations (Non-Exceedance Frequency)			12-month Running Average PHDI Thresholds																			
			-4.45	-3.40	-2.75	-2.36	-2.02	-1.35	-0.86	-0.45	-0.17	0.05	0.39	0.74	1.18	1.49	1.72	1.99	2.33	2.73	3.42	4.06	5.60
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Total Inflow Threshold (acre-ft)	4,600	0th	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15,300	5th	0	1	1	1	3	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	30,700	10th	0	2	4	4	6	7	8	9	9	10	10	10	10	10	10	10	10	10	10	10	10
	40,400	15th	0	3	5	6	9	11	12	13	13	14	14	15	15	15	15	15	15	15	15	15	15
	45,800	20th	0	3	6	8	11	13	14	16	17	17	18	19	20	20	20	20	20	20	20	20	20
	52,900	25th	0	4	7	9	12	15	16	18	19	21	22	23	24	24	25	25	25	25	25	25	25
	59,900	30th	0	4	7	10	14	17	19	21	22	24	25	26	27	28	29	29	30	30	30	30	30
	65,100	35th	0	4	8	11	15	19	21	23	25	26	28	30	31	32	33	34	35	35	35	35	35
	70,700	40th	0	4	8	11	15	19	22	24	26	29	31	34	35	36	37	39	39	40	40	40	40
	79,100	45th	0	4	9	13	17	21	23	26	29	32	34	37	38	39	41	43	44	44	45	45	45
	89,100	50th	0	5	9	13	17	21	25	27	30	33	36	39	41	43	45	46	48	49	50	50	50
	101,500	55th	0	5	10	14	18	22	26	29	32	35	38	42	44	47	49	51	52	53	54	55	55
	110,000	60th	0	5	10	14	18	22	26	29	33	36	40	44	47	49	52	54	56	58	59	60	60
	122,500	65th	0	5	10	14	18	23	27	30	34	38	42	46	49	52	55	57	60	62	64	65	65
	132,400	70th	0	5	10	15	19	24	28	32	35	39	44	48	52	54	58	60	64	66	68	70	70
	142,700	75th	0	5	10	15	20	24	28	32	36	40	45	49	53	56	60	63	67	70	73	75	75
	160,200	80th	0	5	10	15	20	25	29	33	37	41	46	51	55	59	63	66	70	74	77	80	80
	182,500	85th	0	5	10	15	20	25	29	34	38	43	47	52	57	61	65	69	73	77	81	84	85
	214,800	90th	0	5	10	15	20	25	30	34	38	43	48	53	58	63	67	71	76	80	84	88	90
	256,200	95th	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	74	79	84	88	92	95
	444,600	100th	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

Table 7. Occurrence (percentiles) of combined inflow/SPI thresholds over the period of record (1926-2016).

Occurrence of Threshold Combinations (Non-Exceedance Frequency)			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.6	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.6	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Total Inflow Threshold (acre-ft)	4,600	0th	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15,300	5th	0	0	2	2	2	3	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5
	30,700	10th	0	2	4	4	5	6	7	7	8	8	8	9	9	10	10	10	10	10	10	10	10
	40,400	15th	0	2	4	5	7	8	9	10	11	11	12	13	14	14	15	15	15	15	15	15	15
	45,800	20th	0	3	5	6	8	9	11	12	13	14	15	15	17	18	19	19	19	19	20	20	20
	52,900	25th	0	3	6	7	8	10	12	14	15	15	17	18	20	21	22	23	23	24	25	25	25
	59,900	30th	0	3	6	8	10	12	14	16	17	19	20	21	23	25	26	27	27	28	30	30	30
	65,100	35th	0	3	6	9	11	14	16	18	20	21	23	24	26	28	30	31	32	33	35	35	35
	70,700	40th	0	3	6	9	12	14	17	19	21	23	25	26	28	31	33	35	36	37	39	40	40
	79,100	45th	0	4	7	10	13	16	19	21	23	25	27	29	32	34	37	38	40	41	43	44	45
	89,100	50th	0	4	7	11	14	17	21	23	26	27	29	32	34	38	40	42	44	45	47	49	50
	101,500	55th	0	4	8	12	15	18	22	25	28	30	32	35	37	41	44	46	48	50	52	54	55
	110,000	60th	0	4	8	12	15	19	23	26	29	32	34	38	40	44	48	50	52	54	57	59	60
	122,500	65th	0	4	8	12	15	19	23	27	30	33	36	40	43	47	51	53	56	58	61	64	65
	132,400	70th	0	4	8	12	16	20	24	28	31	35	38	41	45	49	54	57	60	63	66	68	70
	142,700	75th	0	4	8	12	17	21	25	29	33	37	40	44	47	52	57	60	63	67	71	73	75
	160,200	80th	0	5	9	13	18	22	26	30	34	38	42	46	50	55	59	63	67	71	75	78	80
	182,500	85th	0	5	9	14	19	23	27	32	36	40	44	48	52	57	62	66	70	75	79	83	85
	214,800	90th	0	5	10	14	19	24	29	33	37	42	45	50	54	59	64	69	73	78	82	87	90
	256,200	95th	0	5	10	15	20	25	30	35	39	44	49	53	58	63	68	73	77	82	86	91	95
	444,600	100th	0	5	10	15	20	25	31	35	40	46	50	55	60	65	71	75	80	85	90	95	100

Drought Scenarios

Prior to testing how well various thresholds predict observed, historical drought, the term "drought" must be defined. Earlier, four types of droughts were defined in terms of their progression and scale/severity of impacts: meteorological, agricultural, hydrological, socioeconomic. For the purposes of this analysis, "drought" is defined from a hydrological perspective in terms of observed water availability over the period of record. Indeed, if the purpose is to test and compare performance of inflow and RDIs at predicting historical droughts, a set of parameters is needed that defines those droughts.

Most definitions of a hydrological drought center on conditions of a parameter deviate from a historical, long-term mean or median (Loon, 2015). While parameters such as precipitation, temperature, and soil moisture are good indicators of drought, because the focus here is on planning for hydrological droughts, and hence on water management and availability, historical droughts are considered primarily in terms of deviations in streamflow and reservoir storage, although USGS (2017) used deviations from mean precipitation and temperature.

For this analysis, seventeen drought definitions were considered (Table 8). Scenarios 1-5 defined drought in terms of variable deviations from long-term mean and median streamflow (i.e., inflow) into Lugert-Altus Reservoir. Scenario 6 defined drought primarily using an approach incorporated by USGS in its 2017 Scientific Investigations Report on the NFRR Aquifer (USGS, 2017). The approach combined local precipitation and temperature with state-wide deviations in mean streamflow that had been calculated and compared by USGS as part of previous efforts to define and compare historical droughts across the state of Oklahoma (Tortorelli, 2008; Shivers et al, 2013). Unlike the other six drought scenarios which used a January to December calendar year, to define a water year, both USGS (2017) and Tortorelli et al. (1991) used an October to September time frame to define a water year. Scenario 7-17 defined drought based on reservoir storage. Figure 13 below illustrates the frequency of

occurrence, expressed as percentiles, of modeled reservoir storage over the period of record (1926 to 2016). Based off of this figure, the 15th percentile storage of 20,000 acre-ft was selected as a storage threshold such that if Lugert-Altus Reservoir dropped to this level for Scenario 7-16, it would signify the occurrence of a drought; the duration of the drought was subsequently defined as the time between which the reservoir dropped below conservation pool to the time when the reservoir filled back up to conservation pool. Similarly, 30,000 acre-ft was selected as a storage threshold for Scenario 17 based on its use in operational decisions.

Figure 14 though Figure 23 illustrate the occurrence of drought under each of these scenarios over the period of record. Depending on the drought definition, droughts were observed between 15 and 63 percent of months over the period of record. The number and percent of months that were defined as either a drought or non-drought (wet) under each of the scenarios are displayed in Table 9. An illustrative comparison of drought occurrences across all scenarios is provided in Figure 24.

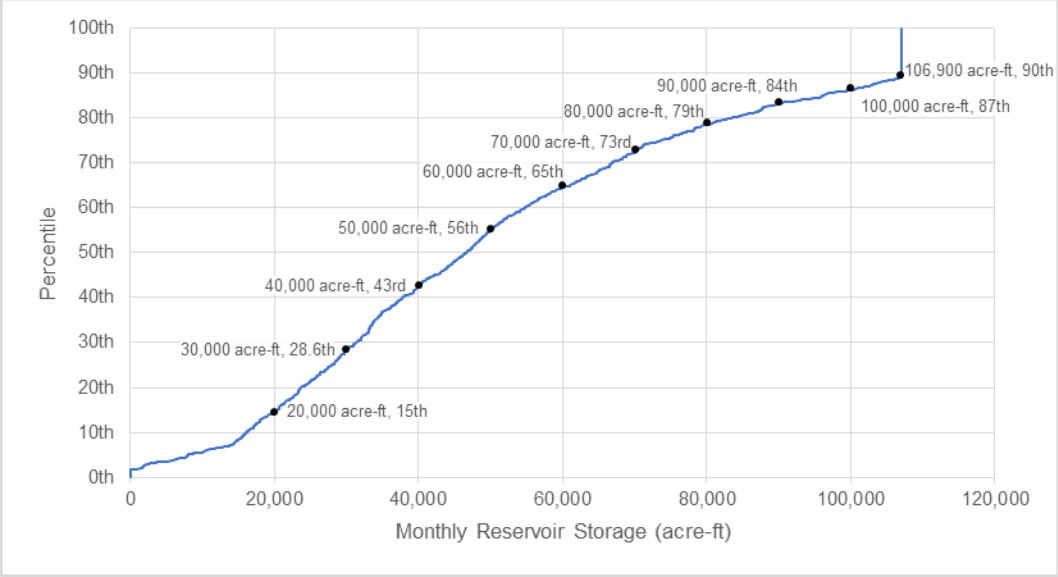

Figure 13. Distribution of end-of-month modeled storage of Lugert-Altus Reservoir over the period record (1926-2016). Assumes 2060 sediment conditions and historical operations with a maximum irrigation demand of 85,630 acre-ft/yr and M&I demand of 4,800 acre-ft/yr during irrigation years and 10,000 acre-ft/yr during shortage years.

Table 8. Seventeen scenarios that define the initiation and end of historical drought periods.

Scenario	Drought Initiates	Drought Ends
1	Annual streamflow below long-term mean	Annual streamflow above long-term mean
2	Annual streamflow below long-term median	Annual streamflow above long-term median
3	Two consecutive years of streamflow below long-term median	Two consecutive years of streamflow above long-term median
4	Three-year running average streamflow below long-term mean	Three-year running average streamflow above long-term mean
5	Five-year running average streamflow below long-term mean	Five-year running average streamflow above long-term mean
6	USGS – Annual precipitation below long-term mean and annual temperature above long-term mean	USGS – Annual precipitation above long-term mean and annual temperature below long-term mean
7	Lugert-Altus Reservoir storage drops below conservation pool, but under condition that storage falls to 20,000 acre-ft	Lugert-Altus Reservoir storage reaches the top of conservation pool
8	Lugert-Altus Reservoir storage drops below 100,000 acre-ft, but under condition that storage falls to 20,000 acre-ft	Lugert-Altus Reservoir storage reaches 100,000 acre-ft
9	Lugert-Altus Reservoir storage drops below 90,000 acre-ft, but under condition that storage falls to 20,000 acre-ft	Lugert-Altus Reservoir storage reaches 90,000 acre-ft
10	Lugert-Altus Reservoir storage drops below 80,000 acre-ft, but under condition that storage falls to 20,000 acre-ft	Lugert-Altus Reservoir storage reaches 80,000 acre-ft
11	Lugert-Altus Reservoir storage drops below 70,000 acre-ft, but under condition that storage falls to 20,000 acre-ft	Lugert-Altus Reservoir storage reaches 70,000 acre-ft
12	Lugert-Altus Reservoir storage drops below 60,000 acre-ft, but under condition that storage falls to 20,000 acre-ft	Lugert-Altus Reservoir storage reaches 60,000 acre-ft
13	Lugert-Altus Reservoir storage drops below 50,000 acre-ft, but under condition that storage falls to 20,000 acre-ft	Lugert-Altus Reservoir storage reaches 50,000 acre-ft
14	Lugert-Altus Reservoir storage drops below 40,000 acre-ft, but under condition that storage falls to 20,000 acre-ft	Lugert-Altus Reservoir storage reaches 40,000 acre-ft
15	Lugert-Altus Reservoir storage drops below 30,000 acre-ft, but under condition that storage falls to 20,000 acre-ft	Lugert-Altus Reservoir storage reaches 30,000 acre-ft
16	Lugert-Altus Reservoir storage drops below 20,000 acre-ft	Lugert-Altus Reservoir storage reaches 20,000 acre-ft
17	Lugert-Altus Reservoir storage drops below 30,000 acre-ft	Lugert-Altus Reservoir storage reaches 30,000 acre-ft

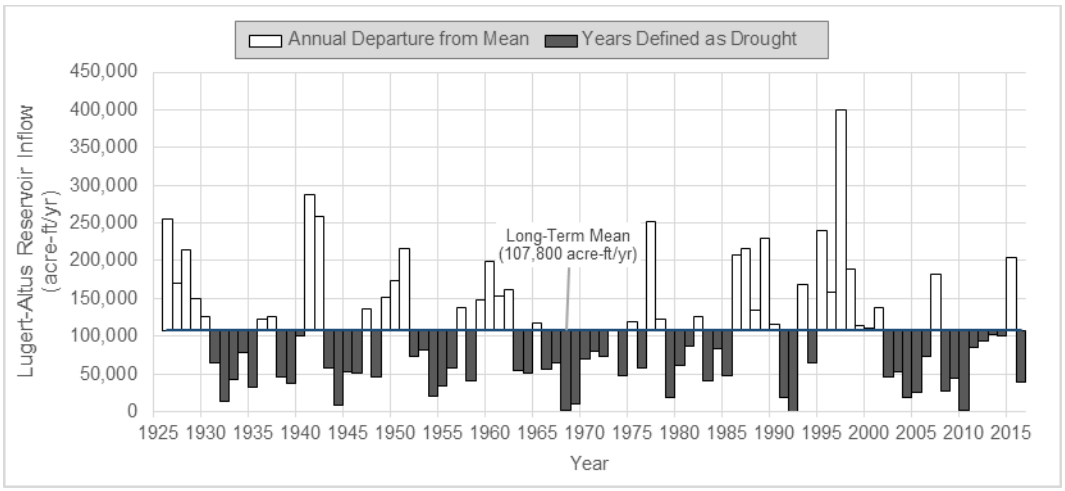

Figure 14. Observed droughts (dark gray shading) under Scenario 1, where droughts are defined such that a drought is initiated when annual streamflow is below the long-term mean, and the drought ends when annual streamflow is above the long-term mean.

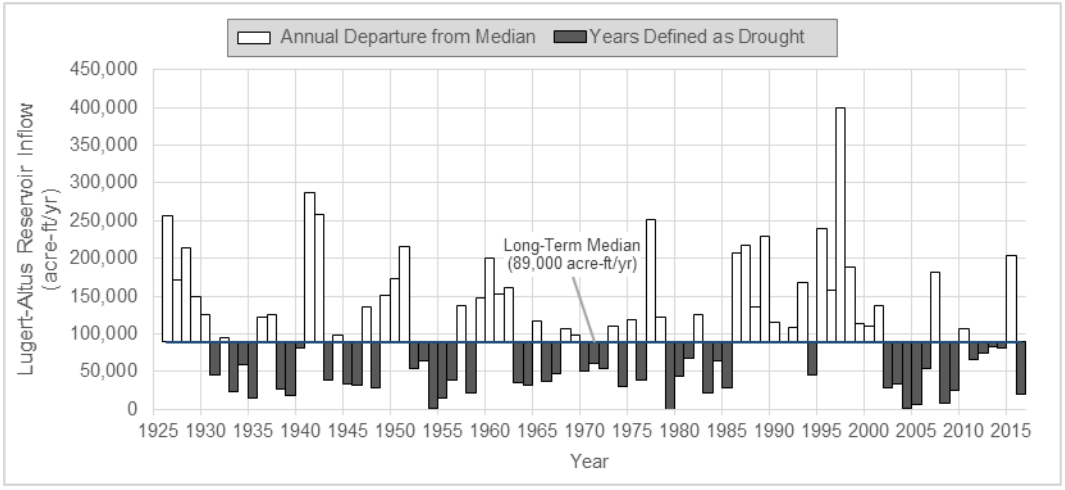

Figure 15. Observed droughts (dark gray shading) under Scenario 2, where droughts are defined such that a drought is initiated when annual streamflow is below the long-term median, and the drought ends when annual streamflow is above the long-term median.

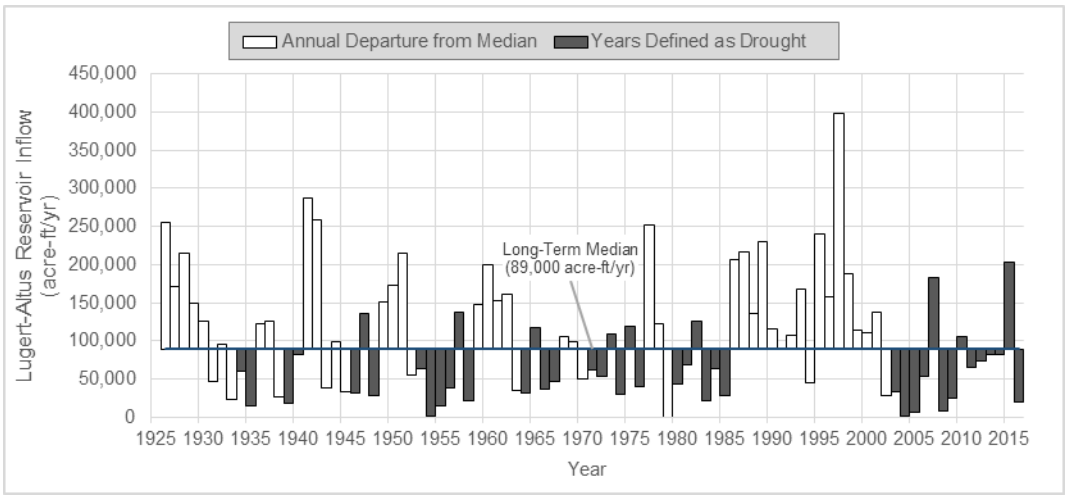

Figure 16. Observed droughts (dark gray shading) under Scenario 3, where droughts are defined such that a drought is initiated when annual streamflow is below the long-term median for two consecutive years, and the drought ends when annual streamflow is above the long-term median for two consecutive years.

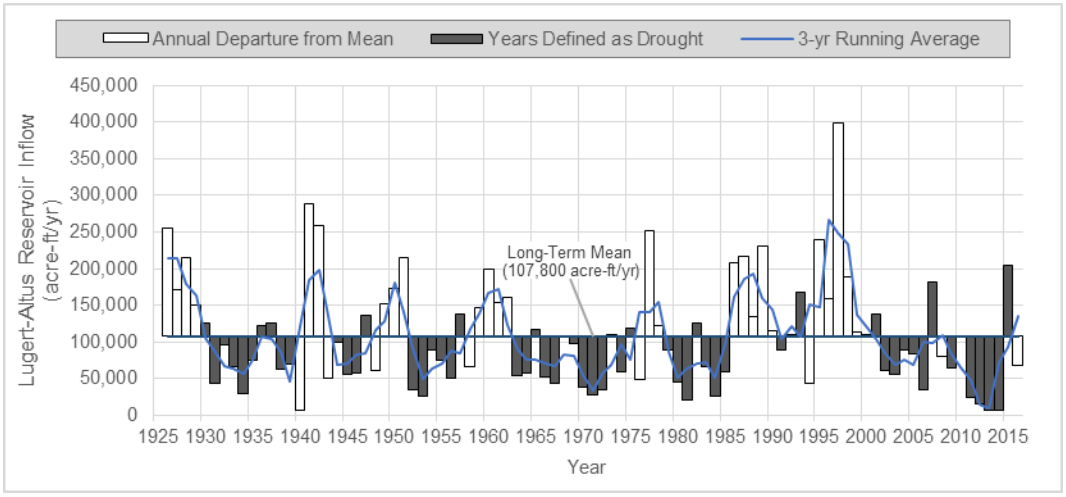

Figure 17. Observed droughts (dark gray shading) under Scenario 4, where droughts are defined such that a drought is initiated when the three-year running average streamflow (blue line) is below the long-term mean, and the drought ends when the three-year running average streamflow is above the long-term mean.

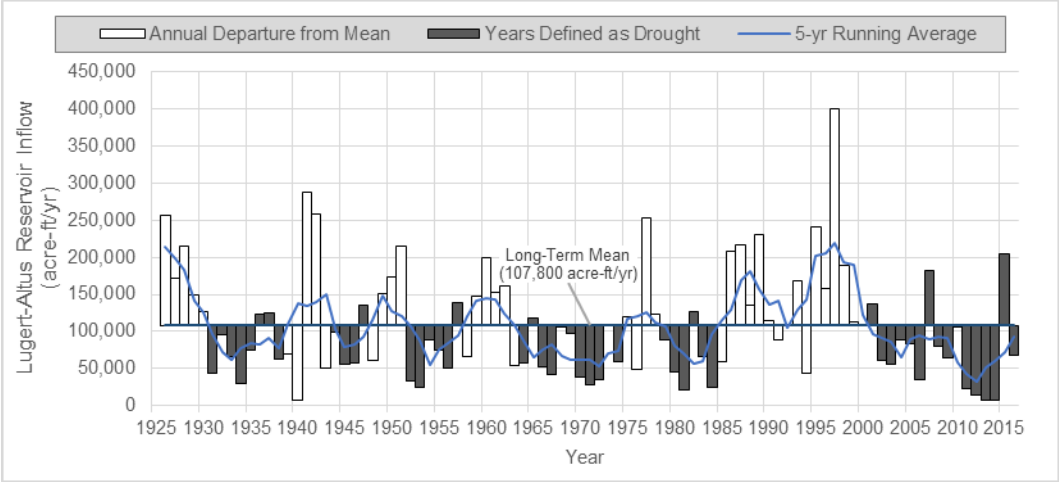

Figure 18. Observed droughts (dark gray shading) under Scenario 5, where droughts are defined such that a drought is initiated when the five-year running average streamflow (blue line) is below the long-term mean, and the drought ends when the five-year running average streamflow is above the long-term mean.

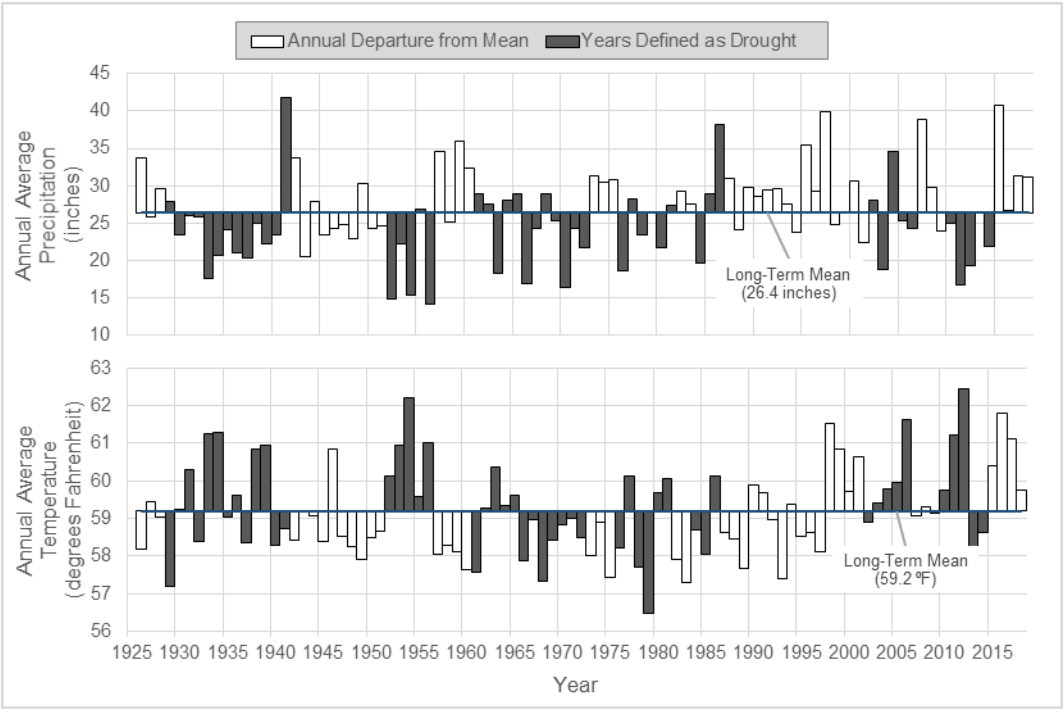

Figure 19. Observed droughts (dark gray shading) under Scenario 6, where droughts are defined such that a drought is initiated when annual precipitation and temperature trends are below the long-term mean, and the drought ends when annual precipitation and temperature trends are above the long-term mean.

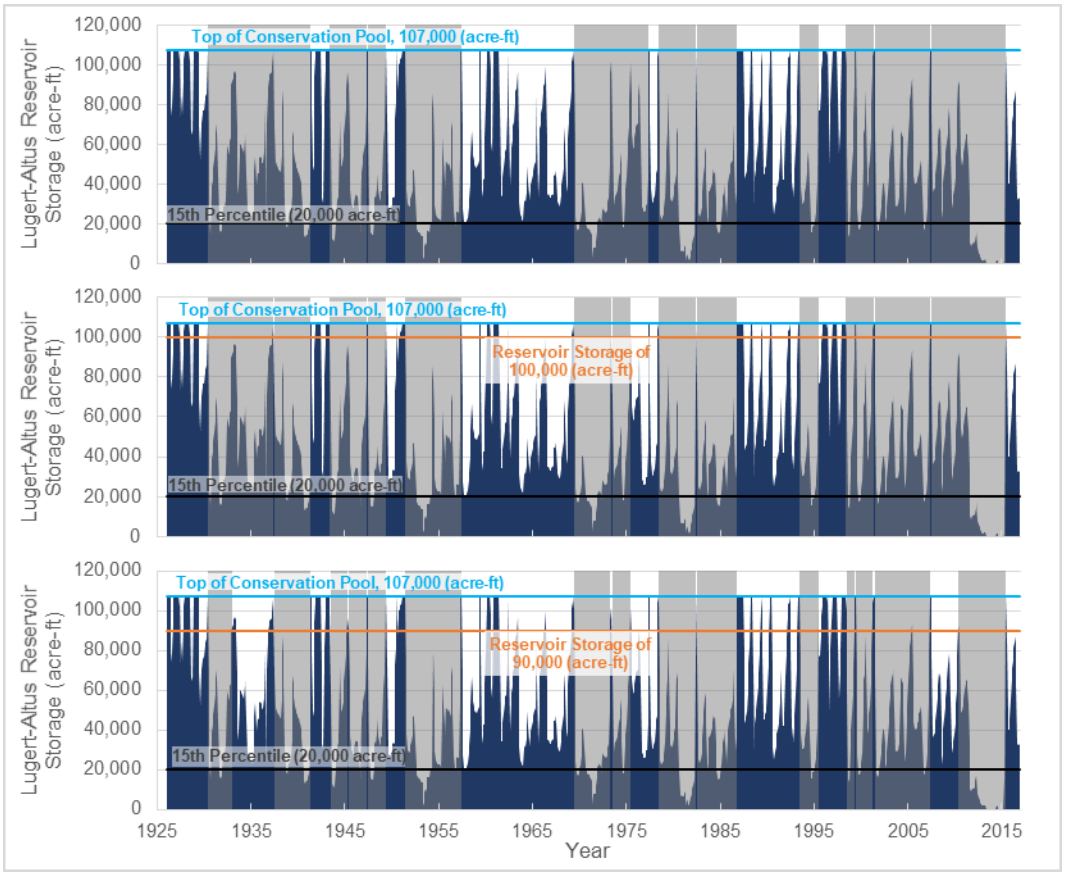

Figure 20. TOP: Observed droughts (light gray shading) under Scenario 7, where droughts are defined such that a drought occurs when the end-of-month modeled reservoir storage drops to 20,000 acre-ft. For modeling purposes, the drought is initiated when reservoir storage falls below conservation pool, and the drought ends when reservoir storage returns to the top of conservation pool. Note: storage is simulated applying 2060 sediment conditions over the entire model period (1926 to 2016) and historical operations with a maximum irrigation demand of 85,630 acre-ft/yr and M&I demand of 4,800 acre-ft/yr during irrigation years and 10,000 acre-ft/yr during shortage years. MIDDLE: Observed droughts under Scenario 8 (defined using an upper limit of reservoir storage of 100,000 acre-ft) and BOTTOM: Observed drought under Scenario 9 (defined using an upper limit of reservoir storage of 90,000 acre-ft).

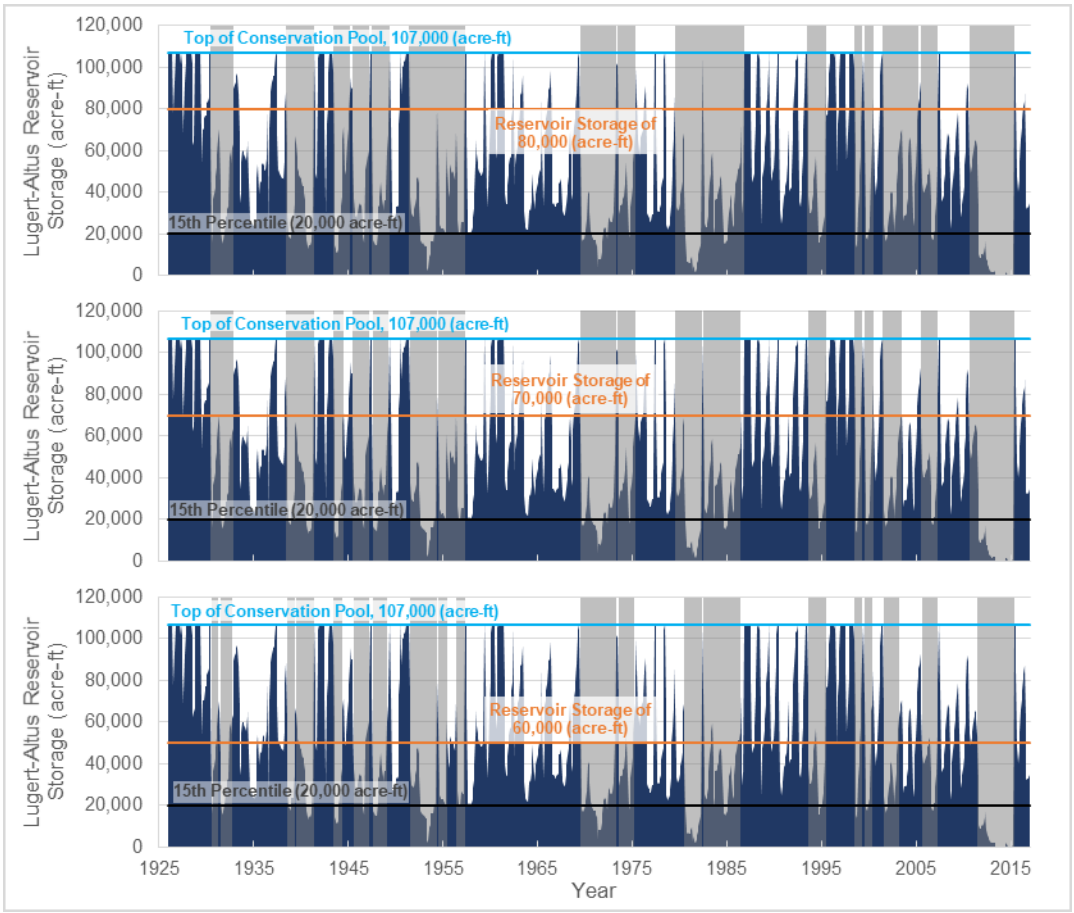

Figure 21. TOP: Observed droughts (light gray shading) under Scenario 10, where droughts are defined such that a drought occurs when the end-of-month modeled reservoir storage drops to 20,000 acre-ft. For modeling purposes, the drought is initiated when reservoir storage falls below 80,000 acre-ft and the drought ends when reservoir storage returns to 80,000 acre-ft. Note: storage is simulated applying 2060 sediment conditions over the entire model period (1926 to 2016) and historical operations with a maximum irrigation demand of 85,630 acre-ft/yr and M&I demand of 4,800 acre-ft/yr during irrigation years and 10,000 acre-ft/yr during shortage years. MIDDLE: Observed droughts under Scenario 11 (defined using an upper limit of reservoir storage of 70,000 acre-ft) and BOTTOM: Observed drought under Scenario 12 (defined using an upper limit of reservoir storage of 60,000 acre-ft).

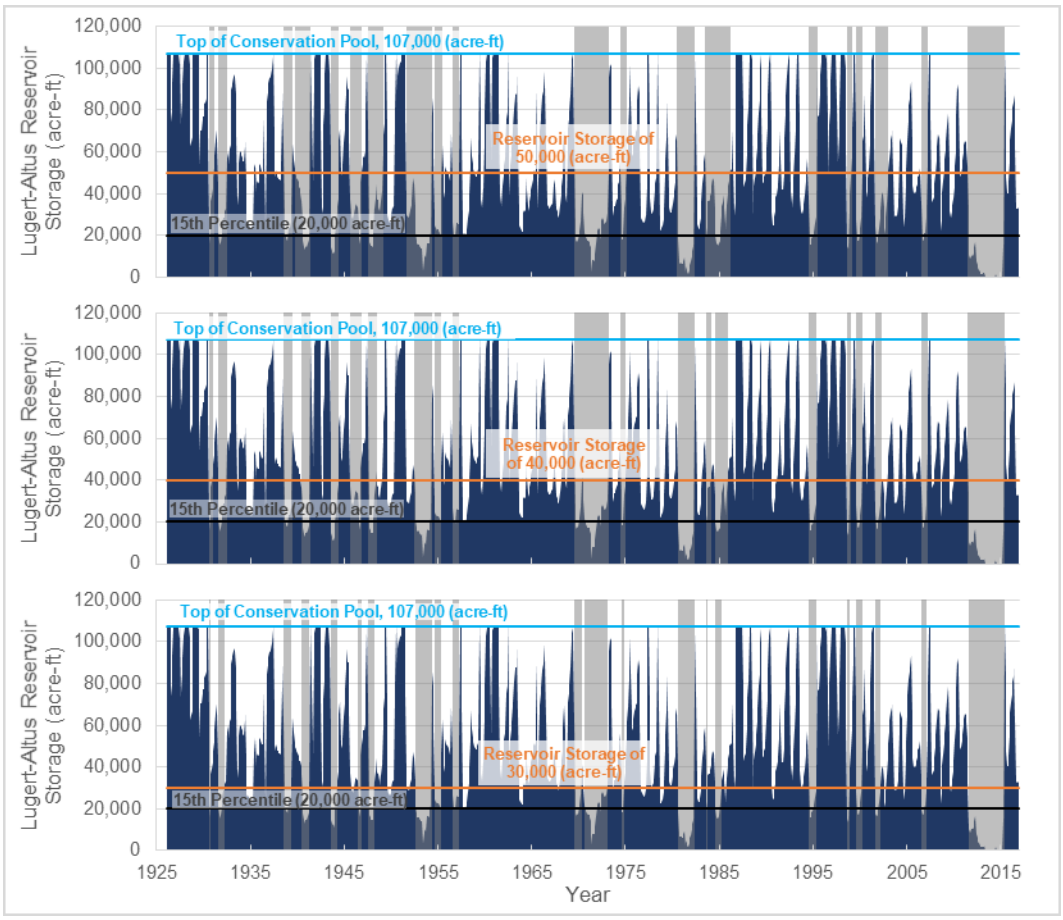

Figure 22. TOP: Observed droughts (light gray shading) under Scenario 13, where droughts are defined such that a drought occurs when the end-of-month modeled reservoir storage drops to 20,000 acre-ft. For modeling purposes, the drought is initiated when reservoir storage falls below 50,000 acre-ft and the drought ends when reservoir storage returns to 50,000 acre-ft. Note: storage is simulated applying 2060 sediment conditions over the entire model period (1926 to 2016) and historical operations with a maximum irrigation demand of 85,630 acre-ft/yr and M&I demand of 4,800 acre-ft/yr during irrigation years and 10,000 acre-ft/yr during shortage years. MIDDLE: Observed droughts under Scenario 14 (defined using an upper limit of reservoir storage of 40,000 acre-ft) and BOTTOM: Observed drought under Scenario 15 (defined using an upper limit of reservoir storage of 30,000 acre-ft).

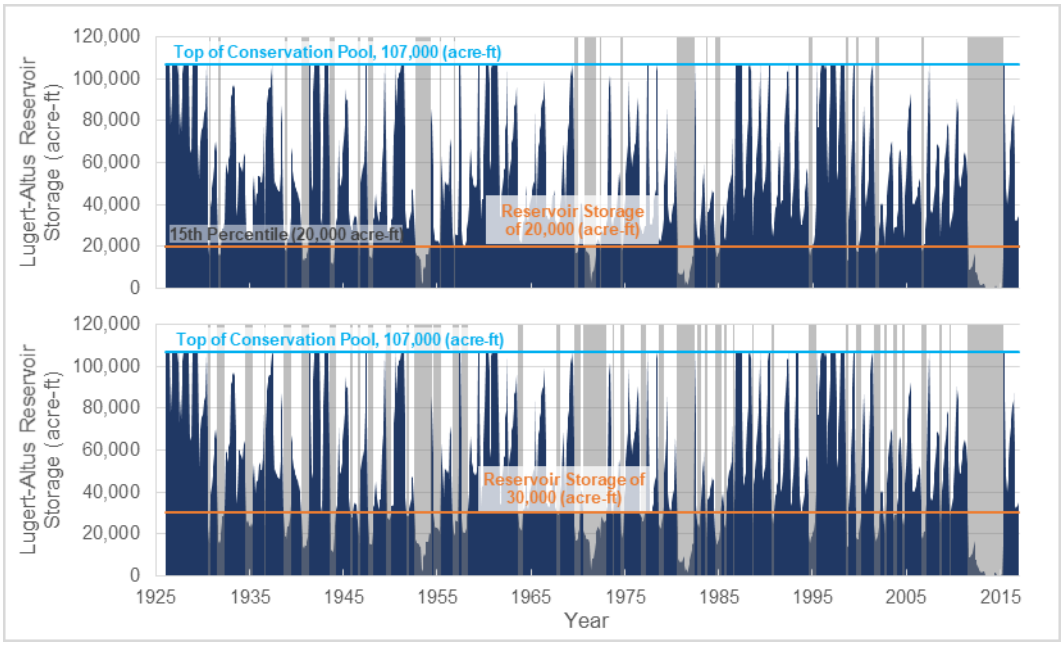

Figure 23. TOP: Observed droughts (light gray shading) under Scenario 16, where droughts are defined such that a drought occurs when the end-of-month modeled reservoir storage drops to 20,000 acre-ft. For modeling purposes, the drought is initiated when reservoir storage falls below 20,000 acre-ft and the drought ends when reservoir storage returns to 20,000 acre-ft. Note: storage is simulated applying 2060 sediment conditions over the entire model period (1926 to 2016) and historical operations with a maximum irrigation demand of 85,630 acre-ft/yr and M&I demand of 4,800 acre-ft/yr during irrigation years and 10,000 acre-ft/yr during shortage years. BOTTOM: Observed drought under Scenario 17 where droughts are defined such that a drought occurs when the end-of-month modeled reservoir storage drops to 30,000 acre-ft. For modeling purposes, the drought is initiated when reservoir storage falls below 30,000 acre-ft and the drought ends when reservoir storage returns to 30,000 acre-ft.

Table 9. Number and percent of months that are defined as either a drought or non-drought (wet) under 17 drought scenarios over the observed period of record (1926-2016).

		Observations				
Drought Scenario		Number of Modeled Months	Number of Observed Drought Months	Percent of Months that are Drought	Number of Observed Wet Months	Percent of Months that are Wet
Inflow-Defined Droughts	1	1,081	624	58	457	42
	2	1,081	540	50	541	50
	3	1,081	516	48	565	52
	4	1,081	672	62	409	38
	5	1,081	624	58	457	42
Temp-Precip Defined-Drought	6	1,081	588	54	493	46
Reservoir-Defined Droughts	7	1,081	681	63	400	37
	8	1,081	653	60	428	40
	9	1,081	557	52	524	48
	10	1,081	513	47	568	53
	11	1,081	469	43	612	57
	12	1,081	411	38	670	62
	13	1,081	341	32	740	68
	14	1,081	283	26	798	74
	15	1,081	231	21	850	79
	16	1,081	160	15	921	85
	17	1,081	310	29	771	71

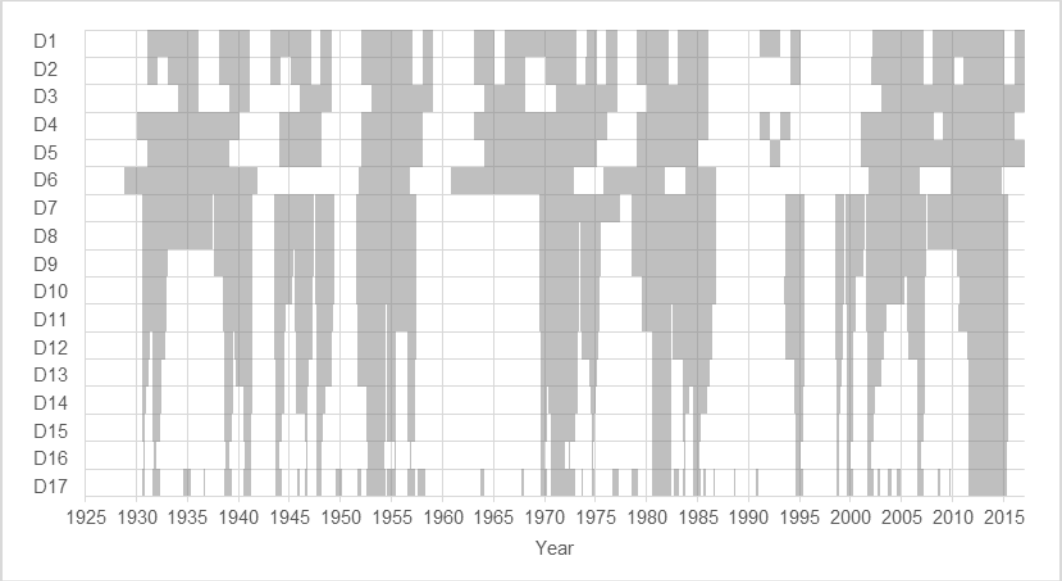

Figure 24. Occurrence of observed droughts (gray shading) under 17 drought scenarios (D1-D17) over the period of record (91 years; 1,081 months). Each bar on the figure represents one month.

Logistic Regression

Next, predictive models were built through logistic regression to test how well inflow, PDSI, PHDI, and SPI predicted these drought scenarios. A total of 105 logistic regression models are developed: one for each of the four indices alone, as well as for Inflow-PDSI; Inflow-PHDI; and Inflow-SPI combinations – with each of these developed based on 15 drought scenarios. By building models based on all 17 drought scenarios, a robust dataset was developed from which to select preferred models. The approach employed for this analysis was called Regression Estimation of Event Probabilities (Glahn, 1985). Here, logistic regressions were fit to binary predictions of either a drought or non-drought (i.e., wet), according to the nonlinear equation:

$$p_i = \frac{\exp\left(b_0 + b_1 x_1 + b_2 x_2\right)}{1 + \exp\left(b_0 + b_1 x_1 + b_2 x_2\right)}$$

Where p_i is the ***"Event Probability" (EP)*** of a drought occurring for each month "i", such that a "1" means that there is a 100 percent probability of a drought, and a "0" means that there is a zero percent probability of a drought. When this equation is applied, a model is developed accounting for the combined variables inflow and PDSI, as follows:

- Variable *"x_1"* represents inflow and "x_2" represents PDSI.
- Variable *"b_0", "b_1",* and *"b_2"* are coefficients derived by the model using the Log-Likelihood equation:

$$L(b) = \sum_{i=1}^{n} \{y_i(b_0 + b_1x_1 + b_2x_2) - \ln\,[1 + \exp(b_0 + b_1x_1 + b_2x_2)]\}$$

The Log-Likelihood [L(b)] equation adjusts b_0, b_1, and b_2 through an iterative process and builds a model that maximizes L(b) based on observed data, namely inflow (x_1) and PDSI (x_2) conditions each month (i) over the model period and whether or not a drought was observed (y = 1) or not observed (y =0). Importantly, if a model is developed for only one index, x_1 would equal either inflow, PDSI, PHDI, or SPI; and if a model is developed for a combination of indices, then x_1 would equal inflow and x_2 would equal either PDSI, PHDI, or SPI. Each of the 105 logistic regression models predicted 1,081 EPs over the model period.

Adjusted Deviance R-Squared

Next, the relative performance of each of the 105 logistic regression models was tested in terms of how well model predictions matched up with observed drought months over the model period (an observed drought scenario is defined on page 29). This was done by calculating the Adjusted Deviance R^2 (Minitab, 2020), which measures how well each model accounts for the different variables (variation) involved with predicting each definition of drought. The Adjusted Deviance R^2 ranges from zero to one, with a zero indicating the model performs poorly and accounts for none of the variation and a one indicating that

the model performs well and accounts for 100 percent of the variation; therefore, the higher the Adjusted Deviance R^2, the better the model prediction.

To calculate Adjusted Deviance R^2, the Deviance R^2 or Likelihood Ratio R^2 firs had to be calculated using the following equation (McFadden, 1974 and Smith and McKenna, 2013):

$$R^2 = 1 - \frac{L(b)}{L(b)_{null}}$$

- Log Likelihood, L(b) is also called the error deviance as previously described at the beginning of this section.
- Null Log Likelihood, $L(b)_{null}$ is the total deviance and repeats the L(b) without the use of variables for prediction.

$$D_T = L(b)_{null} = \sum_{i=1}^{n} \{y_i(b_0) - \ln [1 + \exp(b_0)]\}$$

Similar to L(b), the $L(b)_{null}$ equation adjusts b_0 through an iterative process and builds a model that maximizes $L(b)_{null}$ based on the model period and whether or not a drought was observed (y = 1) or not observed (y =0). In this case, b_0 was determined to be the value that results in an EP equal to the frequency of observed drought in the model period.

$$R^2_{Adj} = R^2 - \frac{(p)\varphi}{L(b)_{null}}$$

- p is the regression degrees of freedom. This is equal to the number of variables used.
- φ is one for binomial and Poisson models.

Results showed that models comprised of two indices had higher Adjusted Deviance R^2 values than models comprised of only one indicator (Figure 25; Table 10). The difference in model performance was more pronounced for more "strict" drought scenarios that defined drought based on relatively dryer conditions and thus triggered the onset of drought less frequently. In other words, the more strict drought definition is (e.g., drought scenario 16 was more strict than drought scenario 1), the more important the role was of more than one indicator in accounting for the variation involved with predicting drought. Results also

showed that models comprised of two indices resulted in a higher Adjusted Deviance R^2values relative to single indices. All models comprised of two indices resulted in similar Adjusted Deviance R^2values, so no clear preference could be determined.

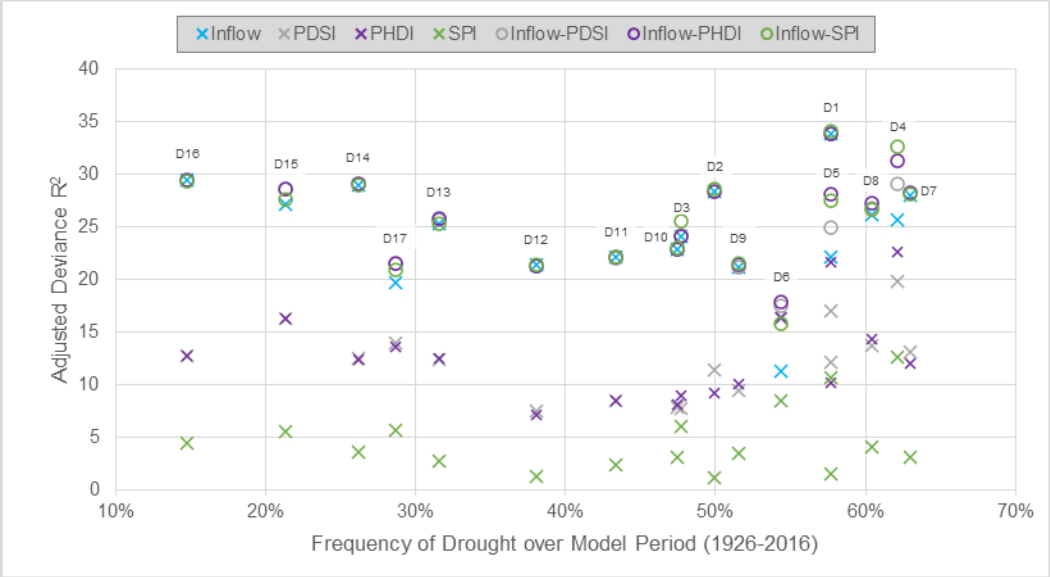

Figure 25. Adjusted Deviance R^2 values for 105 logistic regression models comprised of either a single indicator or two indices across 17 drought scenarios that vary in occurrence frequency.

Table 10. Adjusted Deviance R^2 values for 105 logistic regression models comprised of either a single indicator or two indices across 17 drought scenarios that vary in occurrence frequency.

Drought Scenario	Adjusted Deviance R^2 for Model Period 1926-2016						
	Inflow	PDSI	PHDI	SPI	Inflow-PDSI	Inflow-PHDI	Inflow-SPI
D1	34	12	10	1	34	34	34
D2	28	11	9	1	28	28	29
D3	24	8	9	6	24	24	26
D4	26	20	23	13	29	31	33
D5	22	17	22	11	25	28	27
D6	11	16	16	8	18	18	16
D7	28	13	12	3	28	28	28
D8	26	14	14	4	27	27	27
D9	21	9	10	3	21	21	21
D10	23	8	8	3	23	23	23
D11	22	8	8	2	22	22	22
D12	21	7	7	1	21	21	21
D13	25	12	13	3	26	26	25
D14	29	12	12	4	29	29	29
D15	27	16	16	6	29	29	28
D16	29	13	13	4	29	29	29
D17	20	14	14	6	22	21	21

Bayesian Information Criterion (BIC)

According to Wilks (2011), when multiple alternative logistic regression models are being considered, computation of a Bayesian Information Criterion (BIC) is a useful means of testing the multiplicity of the models and assessing whether the addition of multiple variables sufficiently offsets model complexity (Schwarz 1978). The BIC is determined by the following equation:

$$BIC = -2L(b) + (K + 1)\ln(n)$$

- "n" = sample size
- "K" = number of variables used
- L(b) is the Log Likelihood equation previously at the beginning of this section

The BIC statistic consists of twice the negative of the Log Likelihood plus a penalty for the number of variables used in the model, so the preferred models are those with the lowest BIC value.

Similar to Adjusted Deviance R^2, results also showed that models comprised of two indices resulted in lower BIC scores relative to single indices. All models comprised of two indices resulted in similar BIC scores and no clear preference could be determined.

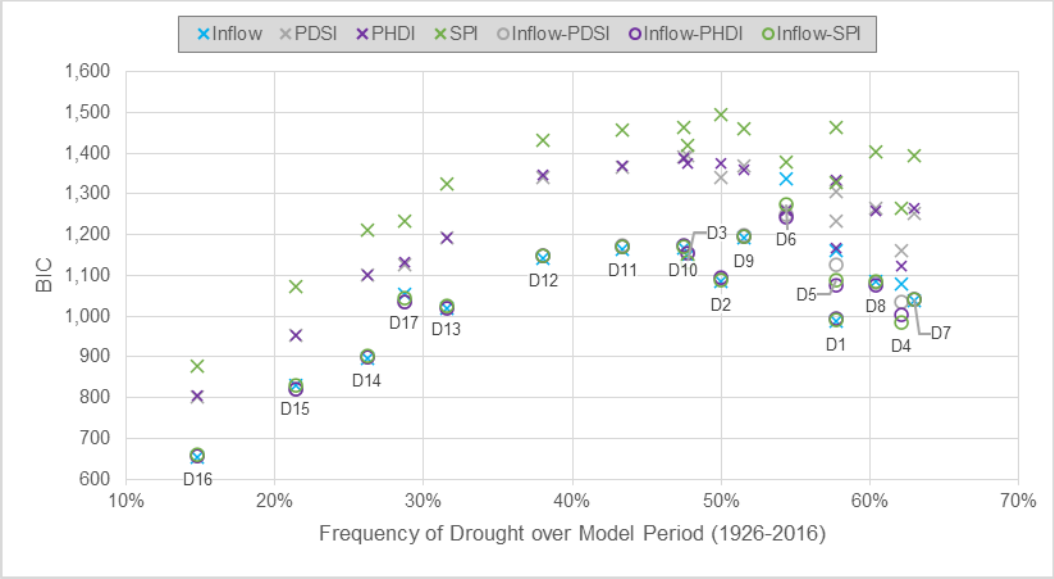

Figure 26. BIC values for 105 logistic regression models comprised of either a single indicator or two indices across 17 drought scenarios that vary in occurrence frequency.

Table 11. BIC values for 105 logistic regression models comprised of either a single indicator or two indices across 17 drought scenarios that vary in occurrence frequency.

Drought Scenario	BIC for Model Period 1 (1926-2016) (Models with lowest score perform best)						
	Inflow	PDSI	PHDI	SPI	Inflow-PDSI	Inflow-PHDI	Inflow-SPI
D1	987	1,307	1,335	1,464	994	993	990
D2	1,087	1,340	1,374	1,494	1,093	1,094	1,089
D3	1,149	1,394	1,375	1,419	1,154	1,156	1,133
D4	1,080	1,163	1,122	1,266	1,037	1,004	986
D5	1,160	1,235	1,167	1,328	1,126	1,077	1,088
D6	1,336	1,261	1,260	1,377	1,248	1,243	1,274
D7	1,039	1,251	1,266	1,393	1,041	1,042	1,043
D8	1,085	1,265	1,257	1,405	1,083	1,076	1,084
D9	1,194	1,368	1,360	1,459	1,199	1,196	1,195
D10	1,167	1,392	1,387	1,463	1,173	1,174	1,171
D11	1,165	1,367	1,368	1,458	1,172	1,172	1,172
D12	1,143	1,342	1,346	1,430	1,149	1,149	1,148
D13	1,019	1,194	1,192	1,324	1,021	1,019	1,026
D14	896	1,101	1,103	1,211	901	901	902
D15	830	952	953	1,073	821	820	832
D16	653	804	804	879	658	659	660
D17	1,053	1,127	1,133	1,235	1,036	1,036	1,043

Preliminary Conclusions

Based on the Adjusted Deviance $R^2$and BIC scores above, single-indicator models were eliminated from further consideration; however, because results did not support elimination of any of the two-indicator models, all three inflow-RDI models (inflow-PDSI, inflow-PHDI, and inflow-SPI) were carried forward for further analyses. Specifically, the next analysis focused on understanding how each of the 17 drought scenarios affects the performance of each of the three inflow-RDI models.

Evaluate Drought Scenarios and Inflow-RDI Model Performance

Approach

In the previous section, using the full range of inflow and RDI conditions observed over the period of record, logistic regression models were developed and evaluated in terms of their ability to account for the variation involved in predicting 17 different drought scenarios. A total of 119 logistic regression models was developed and evaluated for each of the three inflow-RDI combinations, resulting in a total of 357 models for the comparison. In Part V, the focus is specifically on how well Inflow-RDI *thresholds* predicted drought, and preferred thresholds were selected that help define the final range of Hydrologic Threshold Alternatives that are discussed in Part VI. However, before focusing specifically on performance of Inflow-RDI thresholds, this analysis revisits the role that each drought scenario plays in affecting model performance. The objective here was to avoid drawing conclusions and testing thresholds on drought scenarios that yield poor performing models. A common statistical method used to test the validity of logistic regression models is the Hosmer-Lemeshow Goodness of Fit (H-L GOF) Test (Chen et al., 2020). In addition to H-L GOF, a One-way Analysis of Deviance [(which is analogous with more commonly used ANOVA for linear regression tests) (Wilks, 2011)] was performed to check model validity (Hosmer and Lemeshow, 2000). Validity testing was based on logistic regression models derived using the same 17 drought scenarios previously discussed, as well as on observed inflow and RDI data over smaller data subsets (split samples) within the period of record.

Model Periods Defined

Each model's performance was tested in terms of its ability to predict droughts within its respective model period, as well as its ability to predict droughts within the non-model period (a.k.a., "Validation Period"). Seven model periods, designated as "A through G", were evaluated; each of these model periods had a corresponding Validation Period (Table 12). To be clear, each of the seven Model Periods "A-G" was used to generate 17 models, one for each drought scenario "D1-D17", yielding a total of 119 models (Figure 27). Each model was tested for validity through the H-L GOF and Analysis of Deviance as discussed below.

Table 12. Years of monthly data encompassed within seven Model and Validation Periods that are used to derive and test logistic regression models that predict occurrence of drought.

Name	Model Period	Validation Period
A	1926-2016	-[1]
B	1926-1975	1976-2016
C	1976-2016	1926-1975
D	1926-1942	1943-2016
E	1942-1960	1926-1941, 1961-2016
F	1960-1987	1926-1959, 1988-2016
G	2000-2016	1926-1999

[1] Model Period A does not have a corresponding Validation Period because it encompasses the entire period of record.

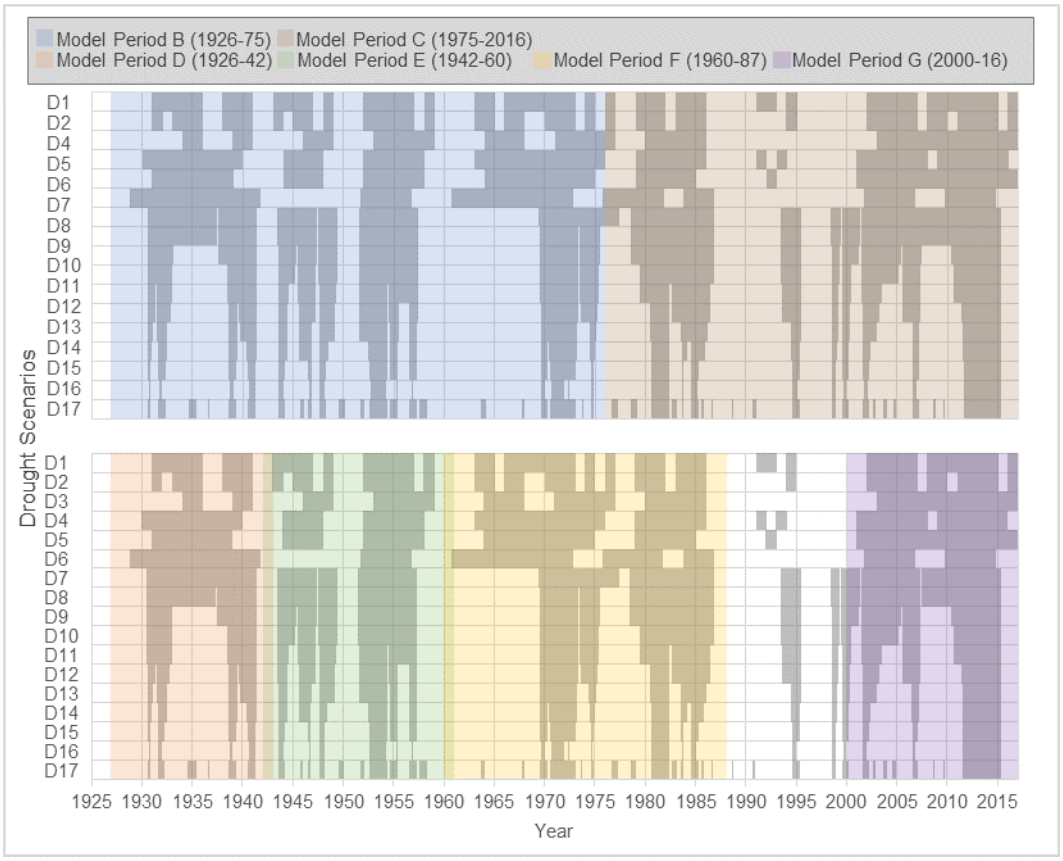

Figure 27. A visual representation of observed droughts (dark shading) under 15 drought scenarios, as well as the seven Model Periods (light colored shading) used to derive and test logistic regression models.

Hosmer-Lemeshow Goodness of Fit (H-L GOF)

The H-L GOF Test is a chi-square test where model predictions are tested against observations made within multiple subgroups of the overall dataset, as follows:

$$H - L_{stat} = \sum_{i=1}^{g} \sum_{j=1}^{2} \frac{\left(obs_{ij} - \exp_{ij}\right)^2}{exp_{ij}}$$

- *"g"* is the number of subgroups. Here, each Model and Validation Period is divided into ten subgroups. Table 13 lists the sample size (months) for each Model and Validation Period; the sample size for each subgroup is derived by dividing the sample size by ten (e.g., for Model Period "B", each subgroup is comprised of 58 months within the Model Period and 49 months within the Validation Period).
- *"obs_{ij}"* was the number of observed drought or wet months within each subgroup.
- *"exp_{ij}"* was the number of predicted (expected) drought or wet months within each subgroup.
- The test used is chi-square with (g – 2) degrees of freedom.

Table 13. Sample size encompassed within seven Model and Validation Periods that are used to derive and test logistic regression models that predict occurrence of drought.

Name	Sample Size (months)	
	Model Period	Validation Period
A	1,081	-[1]
B	589	492
C	492	589
D	193	888
E	228	853
F	336	745
G	204	877

[1] Model Period A does not have a corresponding Validation Period because it encompasses the entire period of record.

In the H-L GOF Test, the *p*-value is calculated as the right hand tail probability of the corresponding chi-squared distribution using the calculated test statistic. A lower *p*-value is indicative of poor fit model, and if $p < 0.05$, then the model was rejected (i.e., a low *p*-value indicated that the model simulations are significantly different from the observations). In other words, the null hypothesis was not rejected[1]. An example is provided below of how the H-L GOF Test performed on a model derived based on Model Period A for Drought 6 (Figure 28, Table 14), where:

- obs_i was the Observed Drought months within each subgroup, ranging from 16 to 96 observed drought months per subgroup.
- obs_j was the Observed Wet (non-drought) months within each subgroup, ranging from 11 to 92 observed wet months per subgroup.
- exp_i was the Expected Drought months within each subgroup. This was derived multiplying the average Event Probably within each subgroup by its subgroup size.
- exp_j was the Observed Wet (non-drought) months within each subgroup. This was derived by subtracting the total months classified as expected drought from its subgroup size.

In this example, the H-L GOF score was a 14, which results in a *p*-value of 0.08; therefore, the model was rejected. Results of the H-L GOF test for all 119 inflow-PDSI models are displayed in Table 15; all 119 Inflow-PHDI models are displayed in Table 16; and all 119 Inflow-SPI models are displayed in Table 17. A model was rejected when the *p*-value from the H-LGOF test was less than 0.05 for both the Model Period and the Validation Period. If the model's *p*-value exceeded 0.05 for one of the Periods, then it was not rejected. Using this logic, rejected models are illustrated by brown shading, and models that were not rejected remain unshaded (Table 15, Table 16, Table 17). Results varied between the different Inflow-RDI models tested; however, results confirmed that the shorter the model period tested, the higher likelihood it was not be rejected by the H-L GOF test; hence, Model Period D-G resulted in the most Drought Scenarios passing (i.e. not rejected).

[1] The null hypothesis was that a model prediction did not match the observed condition. A null hypothesis was rejected when a model was accepted (i.e., not rejected), and the null hypothesis was not rejected when a model was rejected.

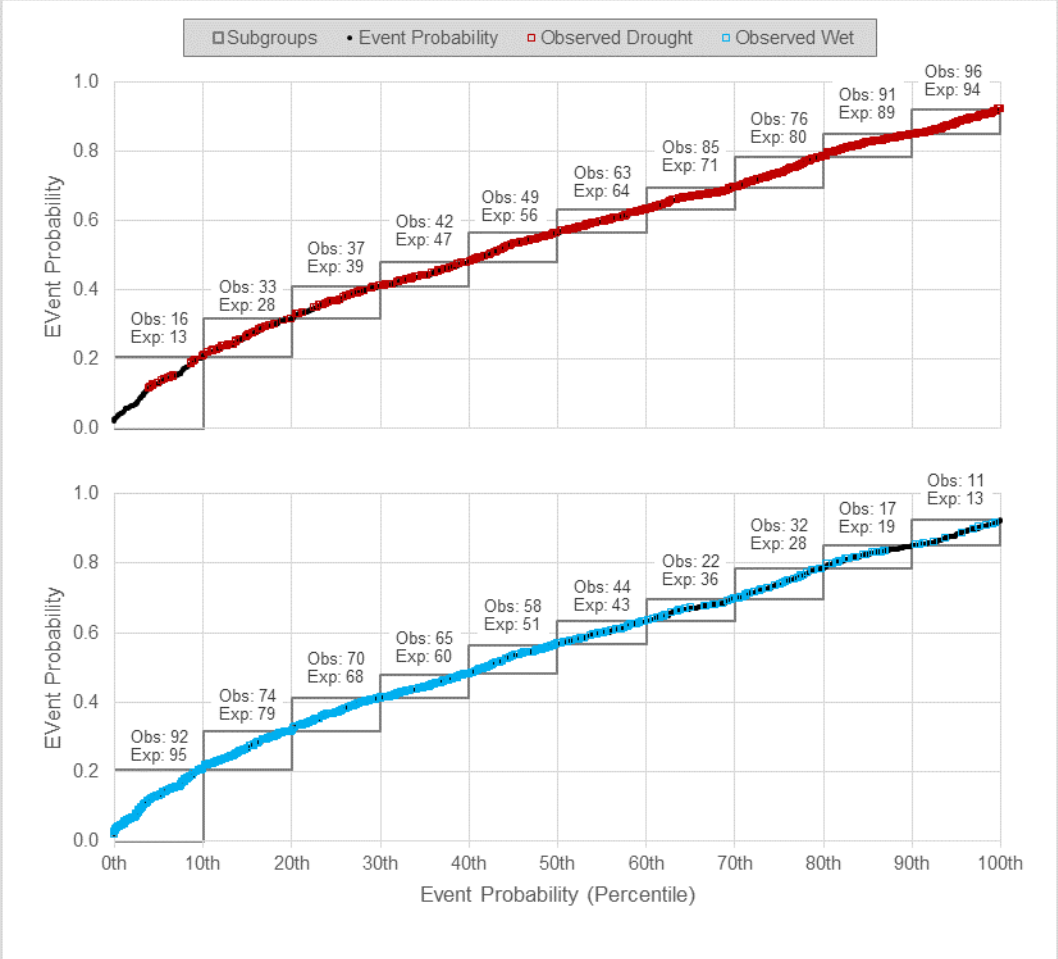

Figure 28. A comparison of observed ("Obs") and expected ("Exp") drought and wet months within each of ten subgroups used to calculate the H-L GOF statistic for a logistic regression model derived by Drought 6, Model Period A.

Table 14. A sample calculation of the H-L GOT statistic and corresponding p-value for a logistic regression model derived by Drought 6, Model Period A.

10 Subgroups		Average Event Probability in Group	Drought		Wet		$H\text{-}L_{Stat}$	
			Observed	Expected	Observed	Expected	Drought	Wet
1	0.0000-0.2063	0.1232	16	108(0.1232) = 13	108-16 = 92	108-13 = 95	(16-13)2/13 = 1	(92-95)2/95 = 0
2	0.2074-0.3163	0.2661	33	108(0.2661) = 28	108-33 = 74	108-28 = 79	(33-28)2/28 = 1	(74-79)2/79 = 0
3	0.3167-0.4110	0.3690	37	108(0.369) = 39	108-37 = 70	108-39 = 68	(37-39)2/39 = 0	(70-68)2/68 = 0
4	0.4115-0.4793	0.4438	42	108(0.4438) = 47	108-42 = 65	108-47 = 60	(42-47)2/47 = 1	(65-60)2/60 = 1
5	0.4806-0.5646	0.5264	49	108(0.5264) = 56	108-49 = 58	108-56 = 51	(49-56)2/56 = 1	(58-51)2/51 = 1
6	0.5675-0.6320	0.5980	63	108(0.598) = 64	108-63 = 44	108-64 = 43	(63-64)2/64 = 0	(44-43)2/43 = 0
7	0.6326-0.6967	0.6658	85	108(0.6658) = 71	108-85 = 22	108-71 = 36	(85-71)2/71 = 3	(22-36)2/36 = 5
8	0.6973-0.7859	0.7397	76	108(0.7397) = 80	108-76 = 32	108-80 = 28	(76-80)2/80 = 0	(32-28)2/28 = 1
9	0.7860-0.8500	0.8233	91	108(0.8233) = 89	108-91 = 17	108-89 = 19	(91-89)2/89 = 0	(17-19)2/19 = 0
10	0.8505-0.9232	0.8827	96	108(0.8827) = 94	108-96 = 11	108-94 = 13	(96-94)2/94 = 0	(11-13)2/13 = 0
						$\sum H\text{-}L_{Stat}$	14	
						H-L GOF p-value	0.08	

Table 15. p-value calculated by the H-L GOF test for 119 logistic regression models derived by a range of drought definitions and Model-Validation Periods for Inflow-PDSI.

H-L GOF Inflow-PDSI *p-value* for Model Period / Validation Period Brown Shading = Model Rejected based on *p-value* for Model and Validation Period							
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G
D1	0.00	0.46 / 0.00	0.00 / 0.00	0.00 / 0.00	0.04 / 0.00	0.10 / 0.00	0.00 / 0.00
D2	0.01	0.47 / 0.02	0.00 / 0.00	0.04 / 0.00	0.23 / 0.03	0.28 / 0.01	0.00 / 0.00
D3	0.00	0.00 / 0.00	0.00 / 0.00	0.49 / 0.00	0.12 / 0.00	0.08 / 0.00	0.00 / 0.00
D4	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00	0.00 / 0.00
D5	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00	0.00 / 0.00
D6	0.08	0.00 / 0.00	0.00 / 0.00	1.00 / 0.00	0.00 / 0.00	0.05 / 0.00	0.00 / 0.00
D7	0.00	0.00 / 0.00	0.02 / 0.00	1.00 / 0.00	0.05 / 0.01	0.00 / 0.00	0.81 / 0.00
D8	0.00	0.00 / 0.00	0.02 / 0.00	0.62 / 0.00	0.05 / 0.02	0.00 / 0.00	0.48 / 0.00
D9	0.02	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.03 / 0.00	0.00 / 0.00	0.22 / 0.00
D10	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.04 / 0.00	0.17 / 0.00	0.25 / 0.00
D11	0.00	0.00 / 0.00	0.00 / 0.00	0.01 / 0.00	0.02 / 0.00	0.20 / 0.00	0.01 / 0.00
D12	0.00	0.00 / 0.00	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00	0.21 / 0.00	0.00 / 0.00
D13	0.00	0.00 / 0.00	0.00 / 0.00	0.19 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D14	0.00	0.00 / 0.00	0.00 / 0.00	0.05 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D15	0.00	0.00 / 0.00	0.00 / 0.00	0.86 / 0.00	0.01 / 0.00	0.00 / 0.00	0.00 / 0.00
D16	0.00	0.00 / 0.00	0.00 / 0.00	0.70 / 0.00	0.00 / 0.19	0.00 / 0.00	0.00 / 0.00
D17	0.00	0.00 / 0.00	0.00 / 0.00	0.24 / 0.00	0.00 / 0.00	0.04 / 0.00	0.00 / 0.00

Table 16. p-values calculated by the H-L GOF test for 119 logistic regression models derived by a range of drought definitions and Model-Validation Periods for Inflow-PHDI.

H-L GOF Inflow-PHDI *p-value* for Model Period / Validation Period Brown Shading = Model Rejected based on p-value for Model and Validation Period							
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G
D1	0.00	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00	0.00 / 0.00	0.65 / 0.05	0.03 / 0.00
D2	0.00	0.07 / 0.00	0.00 / 0.00	0.10 / 0.00	0.08 / 0.03	0.01 / 0.00	0.03 / 0.00
D3	0.00	0.00 / 0.00	0.00 / 0.01	0.02 / 0.00	0.11 / 0.00	0.03 / 0.00	0.00 / 0.00
D4	0.00	0.00 / 0.01	0.08 / 0.00	0.00 / 0.09	0.15 / 0.00	0.00 / 0.00	0.16 / 0.00
D5	0.00	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00	0.15 / 0.00	0.00 / 0.00	0.00 / 0.00
D6	0.00	0.00 / 0.00	0.00 / 0.00	1.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D7	0.00	0.00 / 0.00	0.01 / 0.00	0.97 / 0.00	0.22 / 0.00	0.00 / 0.00	0.29 / 0.00
D8	0.00	0.00 / 0.00	0.04 / 0.00	0.81 / 0.00	0.22 / 0.01	0.00 / 0.00	0.30 / 0.00
D9	0.14	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00	0.41 / 0.00	0.00 / 0.00	0.33 / 0.00
D10	0.00	0.00 / 0.00	0.00 / 0.00	0.21 / 0.00	0.56 / 0.00	0.03 / 0.00	0.12 / 0.00
D11	0.00	0.00 / 0.00	0.00 / 0.00	0.24 / 0.00	0.02 / 0.00	0.01 / 0.00	0.00 / 0.00
D12	0.00	0.00 / 0.00	0.00 / 0.00	0.30 / 0.00	0.04 / 0.00	0.00 / 0.00	0.00 / 0.00
D13	0.00	0.00 / 0.00	0.00 / 0.00	0.04 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D14	0.00	0.00 / 0.00	0.00 / 0.00	0.11 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D15	0.00	0.00 / 0.00	0.00 / 0.00	0.97 / 0.00	0.01 / 0.00	0.00 / 0.00	0.00 / 0.00
D16	0.00	0.00 / 0.00	0.00 / 0.00	0.72 / 0.00	0.00 / 0.22	0.00 / 0.00	0.00 / 0.00
D17	0.00	0.00 / 0.00	0.00 / 0.00	0.37 / 0.00	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00

Table 17. p-values calculated by the H-L GOF test for 119 logistic regression models derived by a range of drought definitions and Model-Validation Periods for Inflow-SPI.

H-L GOF Inflow-SPI *p-value* for Model Period / Validation Period Brown Shading = Model Rejected based on *p-value* for Model and Validation Period							
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G
D1	0.00	0.00 / 0.00	0.02 / 0.00	0.00 / 0.00	0.01 / 0.00	0.03 / 0.11	0.27 / 0.00
D2	0.00	0.02 / 0.00	0.00 / 0.00	0.04 / 0.00	0.05 / 0.00	0.16 / 0.00	0.01 / 0.00
D3	0.20	0.04 / 0.00	0.11 / 0.00	0.13 / 0.00	0.07 / 0.00	0.00 / 0.00	0.01 / 0.00
D4	0.00	0.00 / 0.04	0.14 / 0.00	0.00 / 0.00	0.02 / 0.00	0.00 / 0.00	0.33 / 0.00
D5	0.02	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.02 / 0.00	0.00 / 0.00	0.00 / 0.00
D6	0.05	0.00 / 0.00	0.00 / 0.00	1.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D7	0.00	0.00 / 0.00	0.03 / 0.00	0.13 / 0.00	0.00 / 0.00	0.03 / 0.00	0.16 / 0.00
D8	0.07	0.00 / 0.00	0.06 / 0.00	0.55 / 0.00	0.00 / 0.00	0.00 / 0.00	0.50 / 0.00
D9	0.37	0.01 / 0.00	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00	0.00 / 0.00	0.49 / 0.00
D10	0.00	0.00 / 0.00	0.00 / 0.00	0.23 / 0.00	0.00 / 0.00	0.00 / 0.00	0.03 / 0.00
D11	0.00	0.00 / 0.00	0.00 / 0.00	0.18 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D12	0.00	0.00 / 0.00	0.00 / 0.00	0.41 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D13	0.00	0.00 / 0.00	0.00 / 0.00	0.07 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D14	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00	0.00 / 0.00
D15	0.00	0.00 / 0.00	0.00 / 0.00	0.47 / 0.00	0.01 / 0.03	0.00 / 0.00	0.00 / 0.00
D16	0.00	0.00 / 0.00	0.00 / 0.00	0.23 / 0.00	0.00 / 0.29	0.00 / 0.00	0.00 / 0.00
D17	0.00	0.02 / 0.00	0.00 / 0.00	0.50 / 0.00	0.29 / 0.00	0.00 / 0.00	0.00 / 0.00

Analysis of Deviance

Next, an Analysis of Deviance was performed to test the reduction in deviance for models derived based on individual variables relative to models derived by both variables, inflow and associated RDIs (Minitab, 2020). This served as an added validation to ensure the model was not overly dependent on either inflow or the associated RDI alone, which was shown previously in Part III to be less desirable. Unlike the H-L GOF test, in an Analysis of Deviance test, a model was rejected when the *p*-value is greater than 0.05. To complete this test, the Log Likelihood was first solved with one of the variables removed, similar to the Null Log Likelihood ($L(b)_{null}$) when both variables were zeroed out.

$$L(b)_{without\ RDI} = \sum_{i=1}^{n} \{y_i(b_0 + b_1 x_1) - \ln\,[1 + \exp(b_0 + b_1 x_1)]\}$$

Or

$$L(b)_{without\ Inflow} = \sum_{i=1}^{n} \{y_i(b_0 + b_2 x_2) - \ln\,[1 + \exp(b_0 + b_2 x_2)]\}$$

Similar to L(b), the $L(b)_{without\ Variable}$ equation adjusts b_0 and b_1 through an iterative process and builds a model that maximizes $L(b)_{without\ Variables}$ based on the model period and whether or not a drought was observed (y = 1) or not observed (y =0).

Next, using the ratio below, a chi-square value is generated, along with a corresponding *p*-value.

$$Log - likelihood\ Ratio = -2(L(b) - L(b)_{Without\ Variable})$$

Inflow *p*-values corresponded to models derived based on RDI alone (without inflow), and RDI *p*-values corresponded to models derived based on inflow alone (without RDI). The Analysis of Deviance results for each RDI alone and inflow alone are displayed in Table 18 through Table 23. Unlike the H-L GOF test, which rejected a model when the p-value was less than 0.05, in the

ANOVA test, a model is rejected when the resulting *p*-value was greater than 0.05. If the *p*-value was less than 0.05 for either the Model or the Validation Period, then the model not rejected. Using this logic, rejected models are illustrated by brown shading, and models that are not rejected remain unshaded (Table 18 through Table 23).

Of the 119 inflow-PDSI models derived based on PDSI alone, six models were rejected: D4-Period G, D5-Period D, D6-Period B, D6-Period D, D6-Period E, and D6-Period F (Table 18). Of the 119 inflow-PHDI models derived based on PHDI alone, four models were rejected: D4-Period G, D6-Period B, D6-Period E, and D6-Period F (Table 19). None of the 119 inflow-SPI models derived based on SPI alone were rejected (Table 20). Of the 119 inflow-PDSI models derived based on inflow alone, 32 models were rejected (Table 21). Of the 119 inflow-PHDI models derived based on inflow alone, 32 models were rejected (Table 22). Of the 119 inflow-SPI models derived based on inflow alone, 44 models were rejected (Table 23). Similar to the H-L GOF test, the three longest Model Periods (A-C) had the most models rejected for all models developed.

Table 18. p-values calculated by an Analysis of Deviance (Inflow) for 105 logistic regression models derived by a range of drought definitions and Model-Validation Periods for Inflow-PDSI.

Inflow *p-value* for Model Period / Validation Period Brown Highlight = Model Rejected based on *p-value* for Model and Validation Period							
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G
D1	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D2	0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D3	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D4	0.00	0.00 / 0.00	0.00 / 0.00	0.26 / 0.00	0.00 / 0.00	0.00 / 0.00	0.60 / 1.00
D5	0.00	0.00 / 0.00	0.00 / 1.00	0.68 / 1.00	0.00 / 0.00	0.00 / 0.00	0.20 / 0.00
D6	0.00	0.98 / 0.51	0.00 / 1.00	0.13 / 1.00	0.08 / 1.00	0.91 / 1.00	0.00 / 1.00
D7	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D8	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D9	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D10	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D11	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D12	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D13	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D14	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D15	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D16	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.02	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D17	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.42 / 0.00	0.00 / 0.00	0.00 / 0.00

Table 19. p-values calculated by an Analysis of Deviance (Inflow) for 119 logistic regression models derived by a range of drought definitions and Model-Validation Periods for Inflow-PHDI.

Inflow *p-value* for Model Period / Validation Period Brown Highlight = Model Rejected based on *p-value* for Model and Validation Period							
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G
D1	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D2	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D3	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D4	0.00	0.00 / 0.00	0.00 / 0.00	0.01 / 0.00	0.00 / 0.00	0.00 / 0.00	0.80 / 1.00
D5	0.00	0.00 / 0.00	0.00 / 0.00	0.56 / 0.00	0.00 / 0.00	0.00 / 0.00	0.83 / 0.00
D6	0.00	0.33 / 1.00	0.00 / 1.00	0.01 / 1.00	0.15 / 1.00	0.27 / 1.00	0.00 / 1.00
D7	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D8	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D9	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D10	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D11	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D12	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D13	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D14	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D15	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D16	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D17	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.22 / 0.00	0.00 / 0.00	0.00 / 0.00

Table 20. p-values calculated by an Analysis of Deviance (Inflow) for 119 logistic regression models derived by a range of drought definitions and Model-Validation Periods for Inflow-SPI.

Inflow *p-value* for Model Period / Validation Period Brown Highlight = Model Rejected based on *p-value* for Model and Validation Period							
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G
D1	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D2	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D3	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.01 / 0.00
D4	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D5	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.18 / 0.00
D6	0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 1.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00
D7	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D8	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D9	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D10	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D11	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D12	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D13	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 0.00
D14	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D15	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D16	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
D17	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00

Table 21. p-values calculated by an Analysis of Deviance (PDSI) for 105 logistic regression models derived by a range of drought definitions and Model-Validation Periods for Inflow-PDSI.

PDSI *p-value* for Model Period / Validation Period Brown Highlight = Model Rejected based on *p-value* for Model and Validation Period							
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G
D1	0.82	0.04 / 1.00	0.00 / 1.00	0.40 / 0.33	0.97 / 0.81	0.00 / 1.00	0.00 / 1.00
D2	0.47	0.00 / 1.00	0.00 / 1.00	0.07 / 1.00	0.15 / 0.29	0.16 / 1.00	0.00 / 1.00
D3	0.17	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00
D4	0.00	0.00 / 0.31	0.15 / 0.00	0.00 / 1.00	0.00 / 1.00	0.60 / 0.00	0.00 / 1.00
D5	0.00	0.00 / 1.00	0.26 / 1.00	0.00 / 0.00	0.00 / 1.00	0.01 / 0.00	0.85 / 0.03
D6	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 0.00
D7	0.04	0.00 / 1.00	0.30 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.44 / 1.00
D8	0.00	0.00 / 1.00	0.26 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 1.00	0.39 / 1.00
D9	0.18	0.07 / 1.00	0.02 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00
D10	0.42	0.93 / 1.00	0.70 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00
D11	0.93	0.80 / 1.00	0.46 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00
D12	0.55	0.68 / 0.46	0.79 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00
D13	0.03	0.28 / 0.09	0.01 / 1.00	0.00 / 1.00	0.00 / 0.01	0.00 / 1.00	0.00 / 1.00
D14	0.21	0.56 / 1.00	0.00 / 1.00	0.00 / 1.00	0.01 / 0.01	0.01 / 1.00	0.00 / 1.00
D15	0.00	0.00 / 0.03	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.45 / 0.00	0.00 / 1.00
D16	0.18	0.38 / 1.00	0.00 / 1.00	0.01 / 1.00	0.02 / 1.00	0.56 / 1.00	0.16 / 1.00
D17	0.00	0.00 / 0.00	0.00 / 1.00	0.08 / 1.00	0.00 / 0.00	0.00 / 0.00	0.03 / 0.00

Table 22. p-values calculated by an Analysis of Deviance (PHDI) for 119 logistic regression models derived by a range of drought definitions and Model-Validation Periods for Inflow-PHDI.

PHDI *p-value* for Model Period / Validation Period Brown Highlight = Model Rejected based on *p-value* for Model and Validation Period							
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G
D1	0.30	0.62 / 1.00	0.01 / 1.00	0.32 / 0.04	0.46 / 1.00	0.18 / 1.00	0.00 / 1.00
D2	0.56	0.02 / 1.00	0.00 / 1.00	0.04 / 1.00	0.43 / 0.74	0.30 / 1.00	0.00 / 1.00
D3	0.62	0.00 / 1.00	0.02 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.14 / 0.00
D4	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.02 / 0.00	0.00 / 1.00
D5	0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 1.00	0.00 / 0.00	0.07 / 1.00
D6	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 1.00	0.00 / 0.00	0.00 / 0.00
D7	0.05	0.00 / 1.00	0.29 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.69 / 1.00
D8	0.00	0.00 / 1.00	0.44 / 0.03	0.00 / 0.00	0.00 / 1.00	0.03 / 1.00	0.62 / 1.00
D9	0.02	0.03 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.02 / 1.00	0.00 / 1.00
D10	0.93	0.73 / 1.00	0.08 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00
D11	0.58	0.73 / 1.00	0.13 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00
D12	0.64	0.68 / 0.53	0.61 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00
D13	0.01	0.33 / 0.04	0.00 / 1.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 1.00
D14	0.16	0.50 / 1.00	0.00 / 1.00	0.00 / 1.00	0.07 / 0.00	0.14 / 1.00	0.00 / 1.00
D15	0.00	0.01 / 0.01	0.00 / 1.00	0.00 / 1.00	0.00 / 1.00	0.25 / 0.00	0.00 / 1.00
D16	0.22	0.50 / 1.00	0.00 / 1.00	0.05 / 1.00	0.09 / 1.00	0.63 / 1.00	0.10 / 1.00
D17	0.00	0.00 / 1.00	0.00 / 1.00	0.25 / 1.00	0.00 / 0.00	0.00 / 0.00	0.02 / 0.00

Table 23. p-values calculated by an Analysis of Deviance (SPI) for 119 logistic regression models derived by a range of drought definitions and Model-Validation Periods for Inflow-SPI.

SPI *p-value* for Model Period / Validation Period Brown Highlight = Model Rejected based on *p-value* for Model and Validation Period							
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G
D1	0.04	0.25 / 0.14	0.04 / 1.00	0.80 / 0.06	0.24 / 1.00	0.02 / 1.00	0.02 / 1.00
D2	0.03	0.43 / 0.09	0.01 / 1.00	0.23 / 1.00	0.64 / 1.00	0.00 / 1.00	0.01 / 1.00
D3	0.00	0.00 / 1.00	0.01 / 0.02	0.13 / 1.00	0.00 / 1.00	0.82 / 1.00	0.12 / 0.02
D4	0.00	0.00 / 0.00	0.00 / 0.00	0.16 / 0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00
D5	0.00	0.00 / 1.00	0.00 / 0.00	0.00 / 1.00	0.00 / 1.00	0.00 / 0.00	0.37 / 0.00
D6	0.00	0.00 / 0.00	0.00 / 0.00	0.00 / 1.00	0.00 / 1.00	0.27 / 0.00	0.00 / 0.00
D7	0.12	0.00 / 1.00	0.17 / 1.00	0.00 / 1.00	0.02 / 1.00	0.00 / 1.00	0.00 / 1.00
D8	0.01	0.00 / 1.00	0.01 / 1.00	0.00 / 1.00	0.02 / 0.04	0.72 / 1.00	0.00 / 1.00
D9	0.02	0.30 / 0.27	0.00 / 1.00	0.12 / 1.00	0.02 / 0.00	0.72 / 1.00	0.00 / 1.00
D10	0.11	0.83 / 1.00	0.00 / 1.00	0.00 / 1.00	0.05 / 0.00	0.67 / 1.00	0.00 / 1.00
D11	0.62	0.25 / 1.00	0.01 / 1.00	0.00 / 1.00	0.44 / 0.01	0.57 / 1.00	0.00 / 1.00
D12	0.19	0.03 / 1.00	0.32 / 1.00	0.00 / 1.00	0.25 / 1.00	0.19 / 1.00	0.17 / 1.00
D13	0.81	0.04 / 1.00	0.02 / 1.00	0.00 / 1.00	0.23 / 1.00	0.09 / 1.00	0.02 / 1.00
D14	0.61	0.25 / 1.00	0.03 / 1.00	0.02 / 1.00	0.75 / 1.00	0.43 / 1.00	0.03 / 1.00
D15	0.02	0.15 / 0.09	0.04 / 1.00	0.21 / 1.00	0.09 / 0.00	0.70 / 1.00	0.01 / 1.00
D16	0.59	0.72 / 1.00	0.12 / 1.00	0.93 / 1.00	0.30 / 0.18	0.06 / 1.00	0.12 / 1.00
D17	0.00	0.00 / 1.00	0.12 / 0.00	0.23 / 1.00	0.00 / 0.00	0.80 / 1.00	0.04 / 0.00

Selection of Inflow-RDI Models

Drought scenarios and RDIs were selected based on the combined results of the H-F GOF test and two Analysis of Deviance tests. Statistical results are provided here in terms of whether each set of models, D1-D17, was rejected or not rejected based on their respective *p*-values (identified the section above) for each of the seven Model and Validation Periods (Table 24, Table 25, and Table 26). A model was rejected when it does not pass all three statistical tests (H-L GOF for Inflow-RDI combined; Analysis of Deviance for RDI alone; Analysis of Deviance for inflow alone), whether it was for the Model Period or the Validation Period. Rejected models are illustrated by brown shading, and models that are not rejected remain unshaded (Table 24, Table 25, and Table 26).

Results showed that inflow-PDSI models were rejected slightly more than inflow-PHDI and inflow-SPI models with 21 of 119 inflow-PDSI models not rejected (Table 24), whereas inflow-PHDI models had 22 of 119 models not rejected, and inflow-SPI models had 23 of 119 models not rejected (Table 25 and Table 26, respectively). For inflow-PDSI, D3 models performed the best, with three out of seven Model Periods not rejected, but the other 16 drought scenarios resulted in only two or less Model Periods not rejected (Table 24). For inflow-PHDI, D4, D9, and D10 models performed the best, all of which resulted in three out of seven Model Periods not rejected (Table 25). For inflow-SPI, D3 and D8 performed the best, one of which resulted in three out of seven Model Periods not rejected (D3), and one of which resulted in four out of seven Model Periods not rejected (D8) (Table 26).

A closer examination of Model Period A provided further insight into which inflow-RDI may be preferred. Model Period A was of particular interest because it is the only model period that encompasses the entire period of record and therefore has the most variation in wet-dry conditions. For inflow-PDSI, the best-performing drought scenario (D3) was rejected for Model Period A (Table 24). For inflow-PHDI, one of the three best-performing drought scenarios

(D9) was not rejected for Model Period A (Table 25), and for inflow-SPI, two of the four best-performing drought scenarios (D3 and D8) were not rejected for Model Period A (Table 26).

A closer examination of Model Periods D and G also provided further insight into which inflow-RDI may be preferred. Model Periods D and G were of particular interest because they both encompass the drought of record. For inflow-PDSI, nine of 34 models were not rejected; for inflow-PHDI, 12 of 34 models were not rejected; and for inflow-SPI, 12 of 34 models were not rejected. Combining Model Period A with Model Periods D and G, for inflow-PDSI, ten of 51 models were not rejected; for inflow-PHDI, 13 of 51 models were not rejected; and for inflow-SPI, 16 of 51 models were not rejected.

While any of the three inflow-RDI alternatives could have been selected as preferred alternatives, the decision was made to eliminate inflow-PDSI from further consideration for this analysis. This is because of the three inflow-RDI alternatives: (1) inflow-PDSI resulted in the fewest overall number of models not rejected across all drought scenarios and model periods, as well as the fewest number of models not rejected for Model Periods A, D, and G; (2) the best-performing inflow-PDSI drought scenario (D3) was rejected for Model Period A; and (3) inflow-PDSI resulted in only one drought scenario (D3) having at least three Model Periods not rejected, whereas inflow-PHDI had three drought scenarios with at least three Model Periods not rejected and inflow-SPI had two drought scenarios with at least three Model Periods not rejected.

Table 24. Statistical findings based on p-values calculated by H-L GOF for Inflow-PDSI; Analysis of Deviance for PDSI alone; and Analysis of Deviance for inflow alone.

Brown Shading = Model Rejected								
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G	Number of Models Not Rejected
D1	Reject	Not Reject	Reject	Reject	Reject	Not Reject	Reject	2 out of 7
D2	Reject	Not Reject	Reject	Reject	Reject	Reject	Reject	1 out of 7
D3	Reject	Reject	Reject	**Not Reject**	**Not Reject**	**Not Reject**	Reject	**3 out of 7**
D4	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7
D5	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7
D6	Not Reject	Reject	Reject	Reject	Reject	Reject	Reject	1 out of 7
D7	Reject	Reject	Reject	Not Reject	Not Reject	Reject	Reject	2 out of 7
D8	Reject	Reject	Reject	Not Reject	Not Reject	Reject	Reject	2 out of 7
D9	Reject	Reject	Reject	Reject	Reject	Reject	Not Reject	1 out of 7
D10	Reject	Reject	Reject	Reject	Reject	Not Reject	Not Reject	2 out of 7
D11	Reject	Reject	Reject	Reject	Reject	Not Reject	Reject	1 out of 7
D12	Reject	Reject	Reject	Reject	Reject	Not Reject	Reject	1 out of 7
D13	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D14	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D15	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D16	Reject	Reject	Reject	Not Reject	Not Reject	Reject	Reject	2 out of 7
D17	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7

Table 25. Statistical findings based on p-values calculated by H-L GOF for Inflow-PHDI; Analysis of Deviance for PHDI alone; and Analysis of Deviance for inflow alone.

Brown Shading = Model Rejected								
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G	Number of Models Not Rejected
D1	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7
D2	Reject	Not Reject	Reject	Not Reject	Reject	Reject	Reject	2 out of 7
D3	Reject	Reject	Reject	Reject	Not Reject	Reject	Reject	1 out of 7
D4	Reject	Reject	**Not Reject**	**Not Reject**	**Not Reject**	Reject	Reject	**3 out of 7**
D5	Reject	Reject	Reject	Reject	Not Reject	Reject	Reject	1 out of 7
D6	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D7	Reject	Reject	Reject	Not Reject	Not Reject	Reject	Reject	2 out of 7
D8	Reject	Reject	Reject	Not Reject	Not Reject	Reject	Reject	2 out of 7
D9	**Not Reject**	Reject	Reject	Reject	**Not Reject**	Reject	**Not Reject**	**3 out of 7**
D10	Reject	Reject	Reject	**Not Reject**	**Not Reject**	Reject	**Not Reject**	**3 out of 7**
D11	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D12	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D13	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7
D14	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D15	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D16	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7
D17	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7

Table 26. Statistical findings based on p-values calculated by H-L GOF for Inflow-SPI; Analysis of Deviance for SPI alone; and Analysis of Deviance for inflow alone.

Brown Shading = Model Rejected								
Drought Scenario	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G	Number of Models Not Rejected
D1	Reject	Reject	Reject	Reject	Reject	Not Reject	Not Reject	2 out of 7
D2	Reject	Reject	Reject	Reject	Reject	Not Reject	Reject	1 out of 7
D3	**Not Reject**	Reject	**Not Reject**	Reject	**Not Reject**	Reject	Reject	**3 out of 7**
D4	Reject	Reject	Not Reject	Reject	Reject	Reject	Not Reject	2 out of 7
D5	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7
D6	Not Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	2 out of 7
D7	Reject	Reject	Reject	Not Reject	Reject	Reject	Not Reject	2 out of 7
D8	**Not Reject**	Reject	**Not Reject**	**Not Reject**	Reject	Reject	**Not Reject**	**4 out of 7**
D9	Not Reject	Reject	Reject	Reject	Reject	Reject	Not Reject	2 out of 7
D10	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D11	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D12	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D13	Reject	Reject	Reject	Not Reject	Reject	Reject	Reject	1 out of 7
D14	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7
D15	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7
D16	Reject	Reject	Reject	Reject	Reject	Reject	Reject	0 out of 7
D17	Reject	Reject	Reject	Reject	Not Reject	Reject	Reject	1 out of 7

BIC Verification

Model BIC scores were calculated to verify the findings and conclusions cited above regarding the selection of inflow-PHDI and inflow-SPI models. Table 27 and Table 28 display BIC scores for models that were not rejected by the H-L GOF and Analysis of Deviance tests described above, including the minimum BIC score for each drought scenario (recall that lower BIC scores correspond to better performing models). Overall, BIC scores confirmed the H-L GOF and Analysis of Deviance results. Both inflow-PHDI and inflow-SPI models performed very well for each drought scenario.

Table 27. Inflow-PHDI BIC scores for logistic regression models passing H-L GOF and Analysis of Deviance tests derived by 17 drought definitions and seven model and validation periods.

Drought Scenario	BIC for Model Period / Validation Period							Minimum BIC
	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G	
D1	-	-	-	-	-	-	-	-
D2	-	617 / 517	-	180 / 972	-	-	-	180
D3	-	-	-	-	239 / 205	-	-	205
D4	-	-	525 / 562	174 / 965	205 / 195	-	-	174
D5	-	-	-	-	205 / 186	-	-	186
D6	-	-	-	58 / 4787	-	-	-	58
D7	-	-	-	41 / 2,152	199 / 80	-	-	41
D8	-	-	-	50 / 2,034	199 / 84	-	-	50
D9	1,199	-	-	-	193 / 389	-	167 / 1,442	167
D10	-	-	-	124 / 1,908	201 / 399	-	175 / 1,403	124
D11	-	-	-	127 / 1,923	-	-	-	127
D12	-	-	-	125 / 1,733	-	-	-	125
D13	-	-	-	-	-	-	-	0
D14	-	-	-	99 / 1,594	-	-	-	99
D15	-	-	-	100 / 1,419	-	-	-	100
D16	-	-	-	-	-	-	-	-
D17	-	-	-	-	-	-	-	-

Table 28. Inflow-SPI BIC scores for logistic regression models passing H-L GOF and Analysis of Deviance tests derived by 17 drought definitions and seven model and validation periods.

Drought Scenario	BIC for Model Period / Validation Period							Minimum BIC
	Model Period A	Model Period B	Model Period C	Model Period D	Model Period E	Model Period F	Model Period G	
D1	-	-	-	-	-	323 / 344	175 / 1,015	175
D2	-	-	-	-	-	342 / 350	-	342
D3	1,154	-	498 / 732	-	239 / 205	-	-	205
D4	-	-	525 / 562	-	-	-	133 / 1538	133
D5	-	-	-	-	-	-	-	-
D6	1,248	-	-	58 / 4,787	-	-	-	58
D7	-	-	-	41 / 2,152	-	-	115 / 1,235	41
D8	1,083	-	455 / 688	50 / 2,034	-	-	118 / 1,343	50
D9	1,199	-	-	-	-	-	167 / 1,442	167
D10	-	-	-	124 / 1,908	-	-	-	124
D11	-	-	-	127 / 1,923	-	-	-	127
D12	-	-	-	125 / 1,733	-	-	-	125
D13	-	-	-	125 / 1,562	-	-	-	125
D14	-	-	-	-	-	-	-	-
D15	-	-	-	-	-	-	-	-
D16	-	-	-	-	-	-	-	-
D17	-	-	-	-	269 / 199	-	-	199

Conclusions

The analyses provided above demonstrated that Inflow-PHDI and Inflow-SPI models performed equally well. Given the similarities in model performance, some additional considerations were used in the selection of either PHDI or SPI to combine with inflow. A pragmatic approach was to seek guidance using a national resource that is broadly used by stakeholders such as the United States Drought Monitor (USDM). The USDM uses drought intensity categories which, among other considerations, uses two of the RDIs used in this analysis, namely, PDSI and SPI. Because PDSI already was eliminated from consideration, SPI was selected as the RDI to combine with inflow for further analysis in Part V on preferred thresholds that could be used as Streamwater Management Alternatives.

PART IV: SELECTION OF DROUGHT SCENARIOS AND MODEL PERIODS

Before evaluating model threshold performance in Part V, one final step was to narrow the range of models used in threshold testing. This was done by eliminating all models that were rejected based on the combined H-L GOF and Analysis of Deviance results cited above. For inflow-SPI, Model Periods B, E, and F were eliminated altogether because Model Period B was rejected across all drought scenarios, and Model Periods E and F were rejected across all drought scenarios except for only two. Because Model Period E was eliminated, D17 was eliminated. This was because D17 was rejected for all model periods except Model Period E. Because Model Period F was eliminated, D2 was eliminated. This was because D2 was rejected for all model periods except Model Period F. Scenarios D5, D14, D15, and D16 models were rejected across all model periods (Table 26); therefore, those drought scenarios were eliminated from further consideration in inflow-SPI threshold testing. A total of 11 drought scenarios and four model periods were carried forward.

Applying this logic to all of the inflow-SPI models, a total of 100 inflow-SPI models was eliminated, leaving 19 inflow-SPI models carried forward. The final list of models carried forward for threshold performance testing in Part V is provided in Table 29.

Table 29. Inflow-SPI logistic regression models selected for threshold performance testing based on H-L GOF and Analysis of Deviance results.

	Inflow-SPI
	Model Period
D1	G
D2	-
D3	A, C
D4	C, G
D5	-
D6	A, D
D7	D, G
D8	A, C, D, G
D9	A, G
D10	D
D11	D
D12	D
D13	D
D14	-
D15	-
D16	-
D17	-

PART V: INFLOW-SPI THRESHOLD PERFORMANCE TESTING

In this section, the range of Inflow-SPI thresholds identified in Part III were tested in terms of their to predict drought as defined through the analysis and findings in Part IV. Recall that the range of thresholds considered was constrained by the conditions observed over the period of record. As noted in Table 7, of the 1,081 months on record, observed running 12-month inflow has historically ranged from 4,600 to 444,600 acre-ft and observed SPI historically ranged from -3.09 to 2.68. A total of 441 fifth-percentile occurrence thresholds fell within the range of observed for Inflow-SPI conditions (Figure 29). Recognizing that the future does not emulate the past, and that any combination of inflow and RDIs may occur in the future, all 441 thresholds were considered here for performance testing.

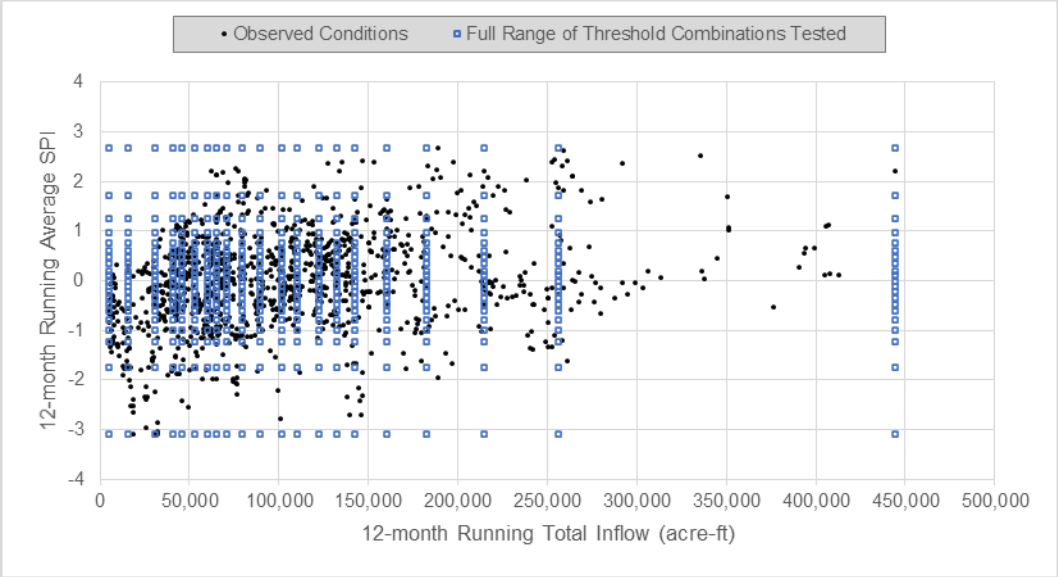

Figure 29. The fifth-percentile thresholds (blue squares) within the full range of observed monthly Inflow- SPI conditions (black dots).

When testing the performance these Inflow-SPI thresholds, four outcomes were considered possible "A", "B", "C", and "D", as follows (Table 30):

"A": A drought was observed, and the threshold correctly predicted it.

"B": A drought was not observed (i.e., wet period), yet the threshold falsely predicted a drought.

"C": A drought was observed, yet the threshold failed to predict it.

"D": A drought was not observed, and the threshold correctly predicted a non-drought period.

The best outcomes were both A and D, meaning the threshold correctly predicted a drought (A) that was known to occur, and it also correctly predicted wet periods (D). Indicators to avoid were those that predicted droughts that were known not to occur (B), resulting in an incorrect prediction, and/or thresholds that missed droughts that were known to have occurred (C).

Table 30. Four possible outcomes (A-D) associated with testing the performance of a threshold at predicting observed, historical droughts.

		Observed Drought		Marginal Totals for Predictions
		Yes	No	
Predicted Drought	Yes	A	B	A + B
	No	C	D	C + D
Marginal Totals for Observations		A + C	B + D	-

Two steps were employed to test the performance of all 441 Inflow-SPI thresholds under consideration. In Step 1, the analysis returns to the logistic regression models selected in Part IV, this time replacing the observed Inflow-SPI variable used to generate the models with each of the 441 Inflow-SPI thresholds under consideration. The model outputs were evaluated to determine which thresholds generated drought predictions over the full period of record (Model Period A: 1926-2016). The range of Inflow-SPI thresholds that did not generate drought predictions were eliminated from further consideration. In Step 2, each of the thresholds carried forward (not eliminated in Step 1) were analyzed in terms of the four possible outcomes, A, B, C, or D to assess its performance at

accurately predicting drought and non-drought periods over the period of record. This was done through calculation of the threshold's Mean Squared Error (MSE) and Conditional Probability, both of which are discussed below.

Step 1. Logistic Regression Model Predictions

Here, each of the 441 Inflow-SPI thresholds was inserted into to the logistic regression models as derived from drought scenarios D1, D3-D4, and D6-D13 and model outputs were evaluated to determine which thresholds generated drought predictions. In Step 2, the accuracy of those predictions was tested against the observed record.

Recall that logistic regression models calculated an Event Probability (EP) between "0" and "1", with higher EPs indicating a more likelihood of drought. For this analysis, a drought was considered to be predicted over the model period when the EP exceeded the frequency of observed drought for the model period under consideration (Gold et al., 2020). For example, the frequency of drought as defined by Drought Scenario 3 (D3) was 0.48 (48 percent of the 1,081 months were classified as an observed drought). When the 31st percentile Inflow-SPI threshold (inflow ≤ 70,700 and SPI ≤ 0.34) was input into the logistic regression model, the EP was 0.59 per the equation below:

$$p_{10} = \frac{\exp\left(1.96+(0.383)(0.34\ SPI)+(0.0000208)(70{,}700\ acre-ft)\right)}{1+\exp\left(1.96+(0.383)(0.34\ SPI)+(0.0000208)(70{,}700\ acre-ft)\right)} = 0.59$$

Because the EP exceeds 0.48, a drought would be predicted anytime inflow ≤ 70,700 and SPI ≤ 0.34.

When the 61st percentile Inflow-SPI threshold (inflow ≤ 122,500 and SPI ≤ 1.25) was input into the logistic regression model, the EP was 0.25 per the equation below:

$$p_{25} = \frac{\exp\left(1.96+(0.383)(1.25\ SPI)-0.0000208(122{,}500\ acre-ft)\right)}{1+\exp\left(1.96+(0.383)(1.25\ SPI)-0.0000208(122{,}500\ acre-ft)\right)} = 0.25$$

Because the EP was less than 0.48, a drought would not be predicted anytime inflow ≤ 122,500 and SPI ≤ 1.25. Figure 30 below illustrates EPs for all 441 Inflow-SPI threshold combinations for D3. It shows that thresholds below approximately the 31st percentile generally resulted in drought predictions. According to Figure 31, which displays the inflow and SPI values that correspond to these percentiles, when inflow was ≤ to 142,700 acre-ft/yr and SPI ≤ 2.68, a drought (as defined by D3) was predicted. In fact, if one variable was held constant, say SPI, then for each SPI between -3.09 and 2.68, there was a total of 235 possible inflow thresholds that predicted drought (as illustrated by full blue squares within the purple outline). What this means is that out of the 441 Inflow-SPI threshold combinations tested, 235 thresholds would be carried forward for performance testing in Step 2.

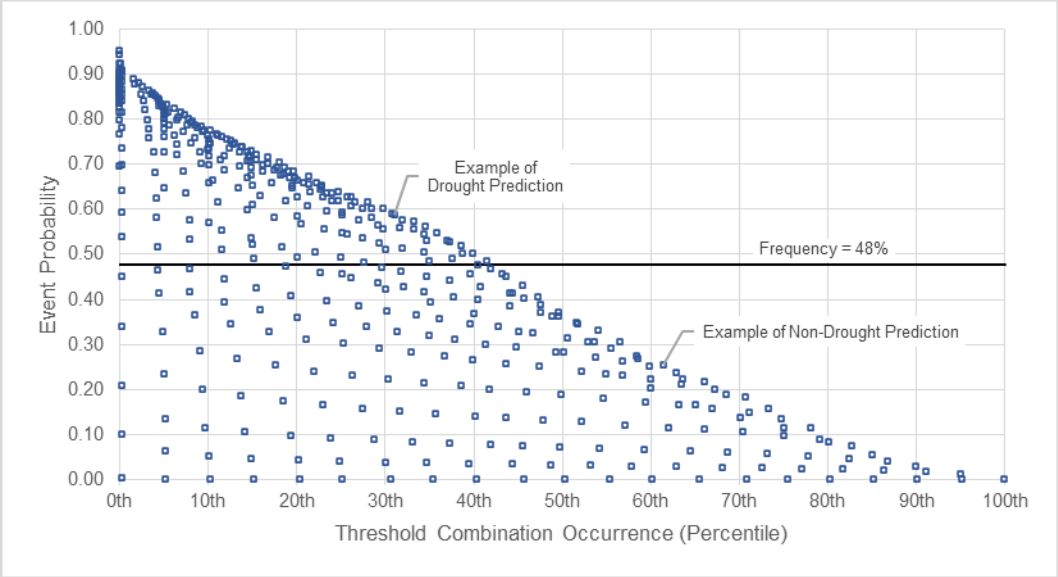

Figure 30. Event Probability outputs from logistic regression models simulating 441 Inflow-SPI threshold combinations for D3, Model Period A. In this case, droughts or non-droughts are predicted when Event Probability exceeds or falls below, respectively, drought frequency (denoted by black line) as defined by D3, Model Period A.

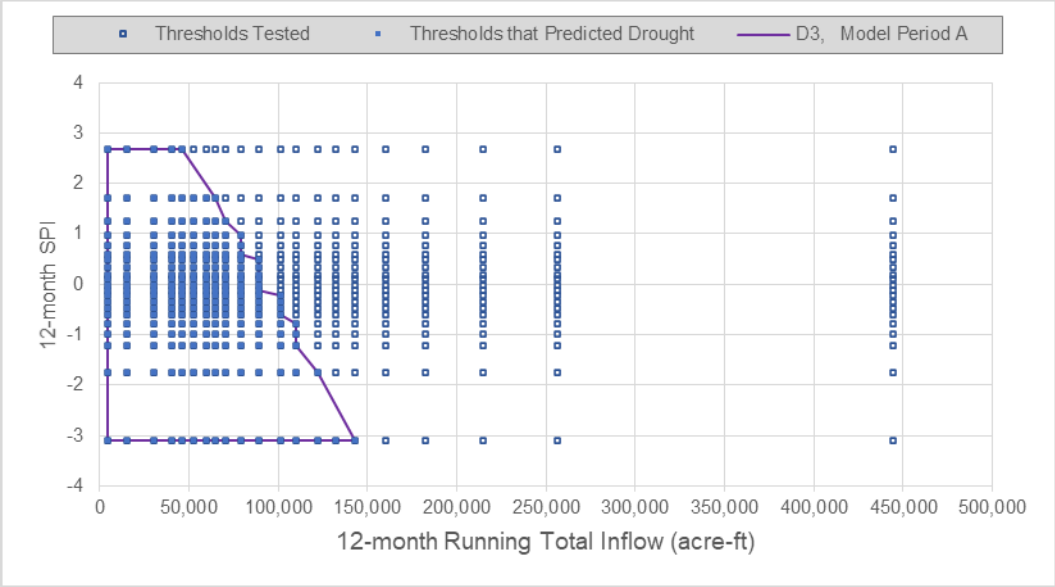

Figure 31. Drought and non-drought predictions of 441 Inflow-SPI thresholds simulated using logistic regression models for D3, Model Period A. Thresholds within the purple geometric shape result in drought predictions.

These calculations were extended for the other 19 logistic regression models for Inflow-SPI selected in Part IV based on drought scenario and model period (Figure 32). In Figure 32, the geometric shapes formed by the colored outlines, each representing a drought scenario, encircle the upper limits of inflow that correspond with each SPI between 2.68 and -3.09 that resulted in a drought prediction. Under D3, for each SPI between 2.68 and -3.09, a total of 235 possible inflow thresholds predicted drought under Model Period A, and 257 possible Inflow-SPI thresholds predicted drought under Model Period C. Under D1, a total of 217 possible Inflow-SPI thresholds predicted drought under Model Period G. Under D4, a total of 270 possible Inflow-SPI thresholds predicted drought under Model Period C, and 276 possible Inflow-SPI thresholds predicted drought under Model Period G. Under D6, a total of 238 possible Inflow-SPI thresholds predicted drought under Model Period A, and 364 possible Inflow-SPI thresholds predicted drought under Model Period D. Under D7, a total of 315 possible Inflow-SPI thresholds predicted drought under Model Period D, and 224 possible Inflow-SPI thresholds predicted drought under Model Period G. Under D8, a total of 261 possible Inflow-SPI thresholds predicted drought under Model Period A, and 284, 314, and 216 under Model Period C, D, and G, respectively.

Under D9, a total of 246 possible Inflow-SPI thresholds predicted drought under Model Period A, and 242 possible Inflow-SPI thresholds predicted drought under Model Period G. Under D10, a total of 233 possible Inflow-SPI thresholds predicted drought under Model Period D. Under D11, a total of 232 possible Inflow-SPI thresholds predicted drought under Model Period D. Under D12, a total of 224 possible Inflow-SPI thresholds predicted drought under Model Period D. Under D13, a total of 216 possible Inflow-SPI thresholds predicted drought under Model Period D. The upper inflow limit (i.e., maximum inflow) for each SPI value that resulted in a drought prediction for D1, D3-D4, and D6-D13 is tabulated in Table 31 through Table 33, as well as the total number of Inflow-SPI threshold combinations within those limits.

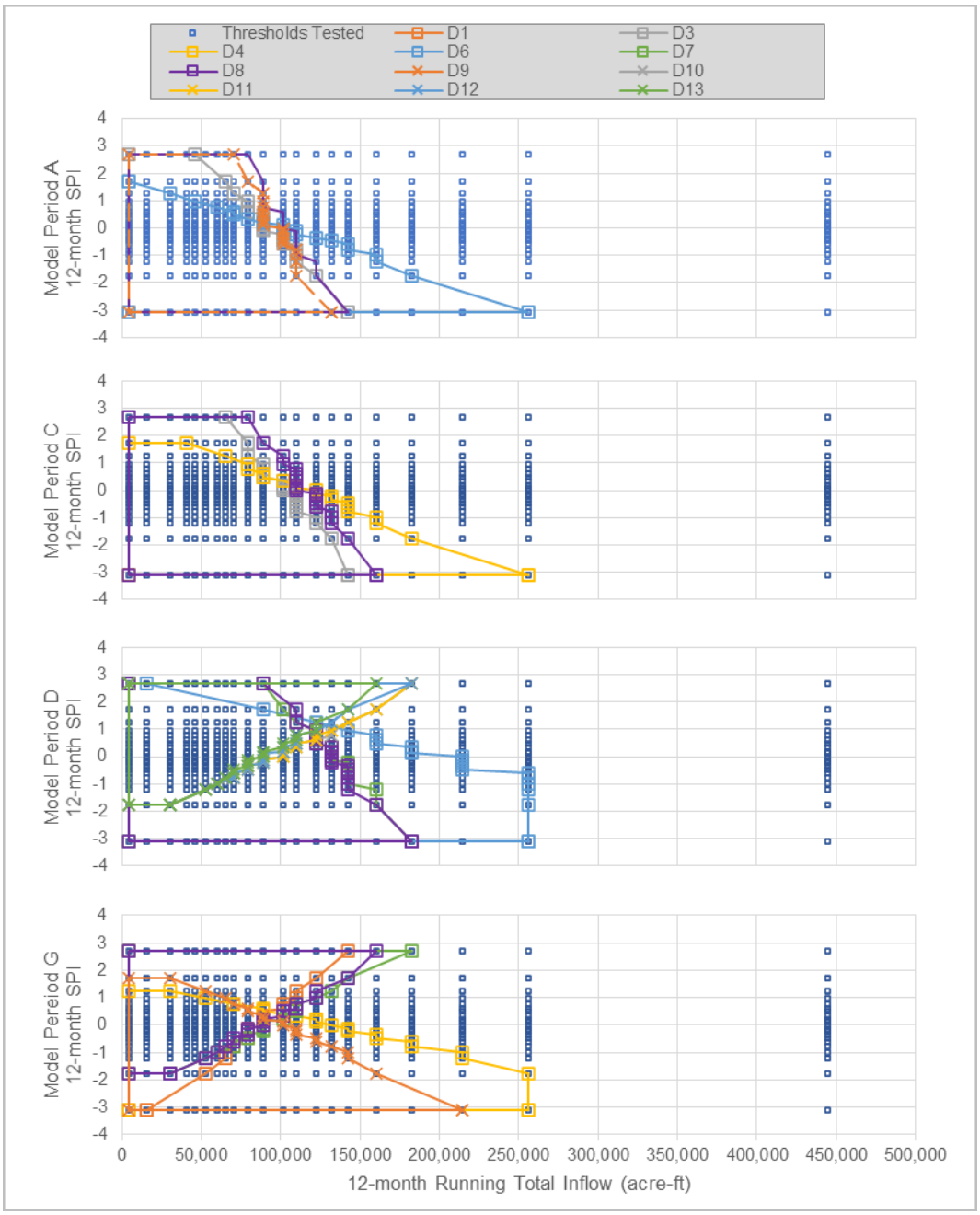

Figure 32. Drought and non-drought predictions of 441 Inflow-SPI thresholds simulated using logistic regression models derived by D1, D3-4, and D6-D13 and their respective model periods. Thresholds within the colored geometric shapes result in drought predictions. Note that Model Period D results in a majority of overlap between D7 and D8 and D10 through D13.

Table 31. The upper inflow limit corresponding to each SPI value, as simulated by D1, D3-4, and D6 logistic regression models, that resulted in drought predictions, as well as the total number of Inflow-SPI threshold combinations within those limits.

SPI	D1	D3		D4		D6	
	Model Period G	Model Period A	Model Period C	Model Period C	Model Period G	Model Period A	Model Period D
	Upper Inflow Limit (acre-ft)						
2.68	142,700	45,800	65,100	-	-	-	15,300
1.72	122,500	65,100	79,100	40,400	-	4,600	89,100
1.25	110,000	70,700	79,100	65,100	30,700	30,700	122,500
0.97	110,000	79,100	89,100	79,100	52,900	45,800	142,700
0.77	101,500	79,100	89,100	79,100	70,700	59,900	160,200
0.60	101,500	79,100	89,100	89,100	89,100	70,700	160,200
0.49	89,100	89,100	89,100	89,100	89,100	70,700	182,500
0.34	89,100	89,100	101,500	101,500	110,000	79,100	182,500
0.19	89,100	89,100	101,500	110,000	122,500	89,100	182,500
0.11	89,100	89,100	101,500	110,000	122,500	101,500	182,500
-0.01	89,100	89,100	101,500	122,500	132,400	101,500	214,800
-0.12	79,100	89,100	110,000	122,500	142,700	110,000	214,800
-0.23	79,100	101,500	110,000	132,400	142,700	110,000	214,800
-0.35	79,100	101,500	110,000	132,400	160,200	122,500	214,800
-0.47	79,100	101,500	110,000	142,700	160,200	132,400	214,800
-0.60	70,700	101,500	110,000	142,700	182,500	142,700	256,200
-0.79	70,700	110,000	110,000	142,700	182,500	142,700	256,200
-0.99	65,100	110,000	122,500	160,200	214,800	160,200	256,200
-1.22	65,100	110,000	122,500	160,200	214,800	160,200	256,200
-1.75	52,900	122,500	132,400	182,500	256,200	182,500	256,200
-3.09	15,300	142,700	142,700	256,200	256,200	256,200	256,200
Number of Inflow-SPI Threshold Combinations Remaining	217	235	257	270	276	238	364

Table 32. The upper inflow limit corresponding to each SPI value, as simulated by D7-D8 logistic regression models, that resulted in drought predictions, as well as the total number of Inflow-SPI threshold combinations within those limits.

SPI	D7		D8			
	Model Period D	Model Period G	Model Period A	Model Period C	Model Period D	Model Period G
	Upper Inflow Limit (acre-ft)					
2.68	89,100	182,500	79,100	79,100	89,100	160,200
1.72	101,500	142,700	89,100	89,100	110,000	142,700
1.25	110,000	132,400	89,100	101,500	110,000	122,500
0.97	122,500	122,500	89,100	101,500	122,500	122,500
0.77	122,500	110,000	89,100	110,000	122,500	110,000
0.60	122,500	110,000	101,500	110,000	122,500	110,000
0.49	122,500	110,000	101,500	110,000	122,500	101,500
0.34	132,400	101,500	101,500	110,000	132,400	101,500
0.19	132,400	101,500	101,500	110,000	132,400	89,100
0.11	132,400	89,100	101,500	110,000	132,400	89,100
-0.01	132,400	89,100	101,500	110,000	132,400	89,100
-0.12	132,400	89,100	110,000	122,500	132,400	79,100
-0.23	142,700	89,100	110,000	122,500	132,400	79,100
-0.35	142,700	79,100	110,000	122,500	142,700	79,100
-0.47	142,700	79,100	110,000	122,500	142,700	70,700
-0.60	142,700	70,700	110,000	122,500	142,700	70,700
-0.79	142,700	70,700	110,000	132,400	142,700	65,100
-0.99	142,700	59,900	110,000	132,400	142,700	59,900
-1.22	160,200	52,900	122,500	132,400	142,700	52,900
-1.75	160,200	30,700	122,500	142,700	160,200	30,700
-3.09	182,500	-	142,700	160,200	182,500	-
Number of Inflow-SPI Threshold Combinations Remaining	315	224	261	284	314	216

Table 33. The upper inflow limit corresponding to each SPI value, as simulated by D-9-D13 logistic regression models, that resulted in drought predictions, as well as the total number of Inflow-SPI threshold combinations within those limits.

SPI	D9		D10	D11	D12	D13
	Model Period A	Model Period G	Model Period D	Model Period D	Model Period D	Model Period D
	Upper Inflow Limit (acre-ft)					
2.68	70,700	160,200	182,500	182,500	182,500	160,200
1.72	79,100	142,700	160,200	160,200	142,700	142,700
1.25	89,100	122,500	142,700	142,700	132,400	122,500
0.97	89,100	122,500	132,400	132,400	122,500	122,500
0.77	89,100	110,000	132,400	122,500	110,000	110,000
0.60	89,100	110,000	122,500	122,500	110,000	110,000
0.49	89,100	101,500	110,000	110,000	110,000	101,500
0.34	89,100	101,500	110,000	110,000	101,500	101,500
0.19	89,100	89,100	101,500	101,500	101,500	89,100
0.11	89,100	89,100	101,500	101,500	89,100	89,100
-0.01	101,500	89,100	101,500	101,500	89,100	89,100
-0.12	101,500	79,100	89,100	89,100	89,100	79,100
-0.23	101,500	79,100	89,100	89,100	89,100	79,100
-0.35	101,500	79,100	79,100	79,100	79,100	79,100
-0.47	101,500	70,700	79,100	79,100	79,100	70,700
-0.60	101,500	70,700	70,700	70,700	70,700	70,700
-0.79	110,000	65,100	70,700	70,700	70,700	65,100
-0.99	110,000	59,900	59,900	59,900	59,900	59,900
-1.22	110,000	52,900	52,900	52,900	52,900	52,900
-1.75	110,000	30,700	30,700	30,700	30,700	30,700
-3.09	132,400	-	-	-	-	-
Number of Inflow-SPI Threshold Combinations Remaining	246	242	233	232	224	216

Overall, a total of 8,379 EPs were evaluated for inflow-SPI (19 models simulating 441 inflow-SPI thresholds). Of these, 4,864 EPs were found to be drought predictions using inflow-SPI thresholds in accordance with the logic described above, while 3,515 were not. All of the logistic regression drought predictions corresponding to 4,864 EPs were combined and illustrated in

Figure 33. Of these, 388 of the inflow-SPI thresholds corresponding to drought predictions are shared among the 19 models (Figure 33). The remaining 4,476 thresholds that did not predict droughts under any of the 19 models were eliminated from further consideration. Of the 388 remaining, those that predicted drought by only one of the 19 models were considered to be "outliers", and therefore eliminated. This eliminated another 39 thresholds that predicted drought only by model: D6 and D11 under Model Period D (Figure 33). Once these were eliminated, 349 inflow-SPI threshold combinations remained and were carried forward to the next step of the analysis (Figure 34; Table 34). Results for all threshold combinations are included in Appendix Table 57 through Table 74.

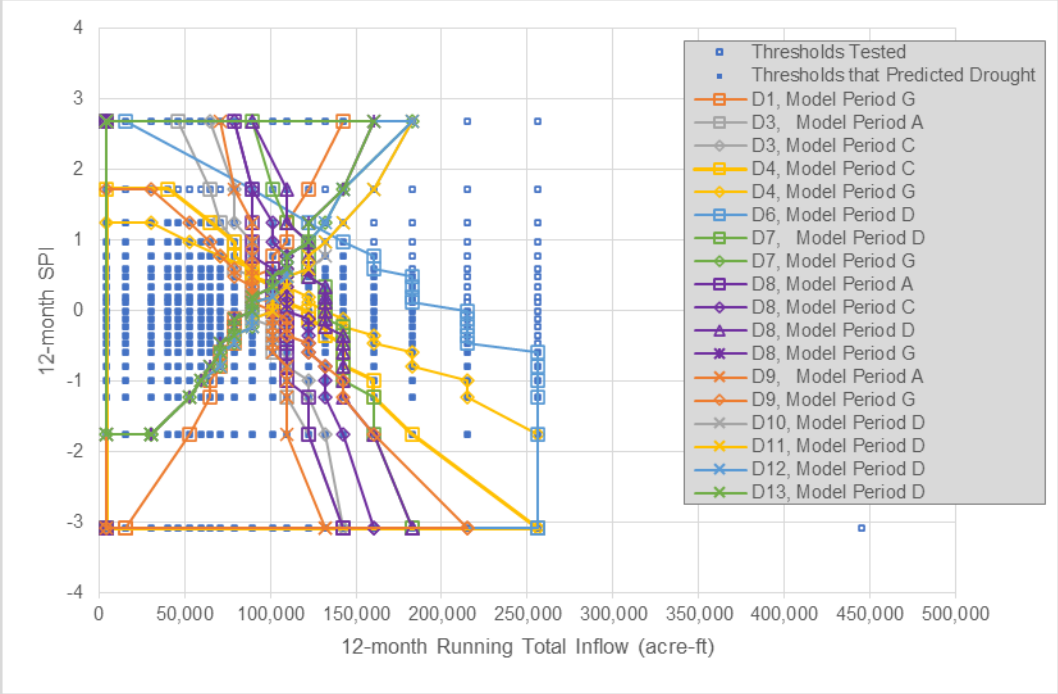

Figure 33. Combined results of 19 logistic regression models in terms of drought (388 thresholds) and non-drought (51) predictions.

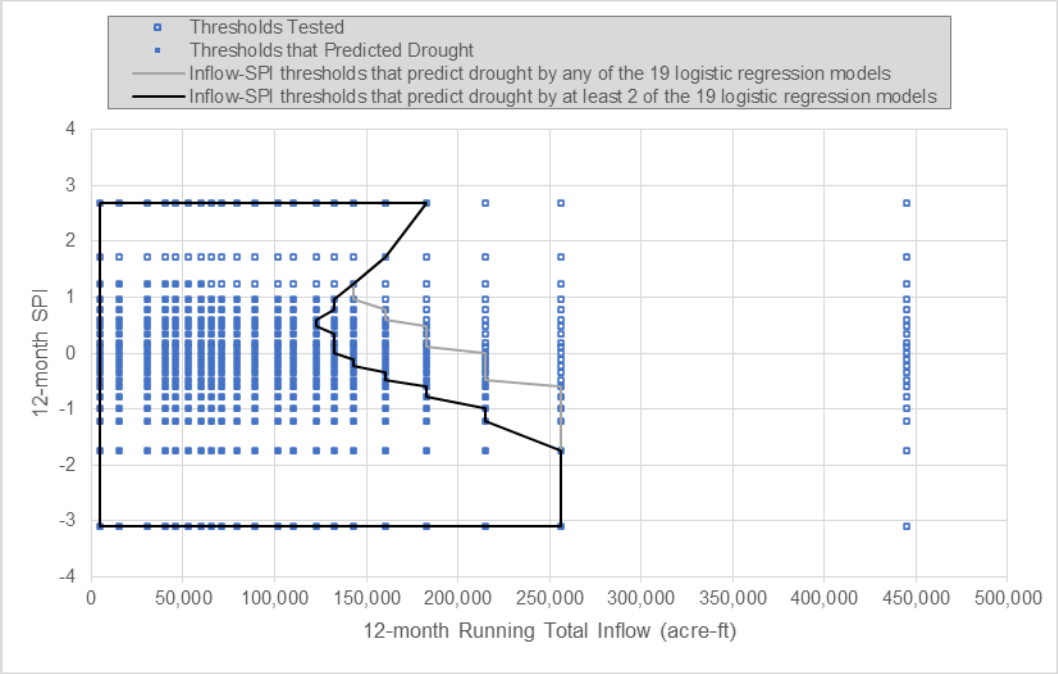

Figure 34. Inflow-SPI thresholds that resulted in drought predictions by all 19 logistical regression models (gray line) compared to thresholds that resulted in drought predictions by at least two of the 19 logistic regression models (black line).

Table 34. Inflow-SPI thresholds that result in drought predictions by at least two of the 19 logistic regression models.

SPI	Upper Inflow Limit (acre-ft)
2.68	182,500
1.72	160,200
1.25	142,700
0.97	132,400
0.77	132,400
0.60	122,500
0.49	122,500
0.34	132,400
0.19	132,400
0.11	132,400
-0.01	132,400
-0.12	142,700
-0.23	142,700
-0.35	160,200
-0.47	160,200
-0.60	182,500
-0.79	182,500
-0.99	214,800
-1.22	214,800
-1.75	256,200
-3.09	256,200
Number of Inflow-SPI Threshold Combinations Remaining	349

Step 2. Threshold Performance

In the previous step, logistic regression models were used to narrow down 441 potential Inflow-SPI thresholds to 349 thresholds that yield drought predictions. In Step 2, the accuracy of those predictions was tested against the observed record. Each of the threshold combinations were analyzed in terms of the four possible outcomes: A, B, C, or D (Table 30). The analysis drew on atmospheric science methods that test meteorological forecasting, many of which are detailed in Wilks (2011) and Jolliffe and Stephenson (2012). First, the "Mean Squared Error" (MSE) of each combined inflow-RDI threshold was calculated. The MSE is identical to the Brier Score (Brier, 1950), which is the most commonly-used performance measure of precipitation forecasts (Murphy and Winkler, 1987). The MSE quantifies the average squared difference between a threshold's prediction versus the observation (Wilks, 2011). Additionally, the ratio of predicted droughts that were actually observed (i.e., "Probability of Detection") was combined with the ratio of positive versus false positive predictions (i.e., "Success Ratio") and a "Conditional Probability" was derived of each inflow-RDI threshold (Wilks, 2011).

Mean Squared Error (MSE)

The MSE quantifies the average squared difference between a threshold's prediction versus the observation. First, to determine how well the observation predicted a drought observation, the analysis needed to define when a drought prediction was initiated (i.e., when observed conditions fell below a particular threshold) and when a drought prediction ended (i.e., when observed conditions rose above a particular threshold).

Importantly, for this analysis, a drought prediction was initiated when observed conditions were less than or equal to *both* the inflow threshold and the RDI threshold. However, a drought prediction ended only when observed conditions increased above *only the inflow threshold*. This criterion was

considered important because a wide variation in climatic and hydrologic conditions exist over the Lugert-Altus Reservoir hydrologic basin, and study partners wanted to employ a conservative approach that weighted local conditions over regional conditions when determining when to exit a drought for water management/mitigation purposes; as such, even if a large rain event occurred in the upper reaches of the basin that increases an RDI above an established threshold, if inflow into Lugert-Altus Reservoir remained low, then water management/mitigation measures would continue until such time that inflow increases above its established threshold. For example, focusing specifically on predictions during the drought of record, namely the period: Aug 2011 - Sept 2015, which was a drought period common to all drought definitions, if a decision was made to end a drought prediction when observed conditions increased above *either an inflow threshold* (e.g., 89,100 acre-ft) or *a SPI threshold (e.g., -0.35)*, then only 60 percent of the drought of record was predicted; whereas, if a drought prediction ended when observed conditions increased above *only the inflow threshold* (e.g., 89,100 acre-ft), then 83 percent of the drought of record was predicted. These two scenarios, Scenario 1 and Scenario 2, are illustrated in Figure 35, respectively. Scenario 2 should be preferred because it captured the entire drought of record. It did so by weighing more heavily the local conditions (i.e., inflow into Lugert-Altus Reservoir) and therefore did not exit the drought despite a rain event that was observed in the upper basin which caused SPI to increase during the drought of record.

Calculating drought predictions in this way changed the frequency of months (i.e. occurrence percentiles) that droughts were predicted over the period of record for a given inflow-RDI threshold combination. Recall the occurrence percentiles corresponding to the full range of observed inflow-RDI thresholds displayed in Table 6 and Table 7. Here, those occurrence percentiles were updated to account for this new criterion placed on how a drought prediction was defined, namely that inflow alone would be the index determining when to exit a drought (i.e., end a drought prediction). Returning to the previous example but this time comparing occurrence frequencies over the entire period of record, if a

drought prediction ended when observed conditions increased above either the inflow threshold of 89,100 acre-ft or a SPI threshold of -0.35 (Scenario 1), then a drought would be predicted 23 percent of all months over the period of record (Table 6; Figure 36); whereas, if a drought prediction ended when observed conditions increased above only the inflow threshold of 89,100 acre-ft/yr (Scenario 2), then a drought would be predicted 33 percent of all months over the period of record (Table 35; Figure 36). Henceforth, Scenario 2 was selected as the preferred scenario for making drought predictions. Importantly, just because a certain set of threshold combinations predicts a drought, this does not mean that the predictions were correct. The accuracy of such predictions is the subject of the remaining analysis discussed in the following sections.

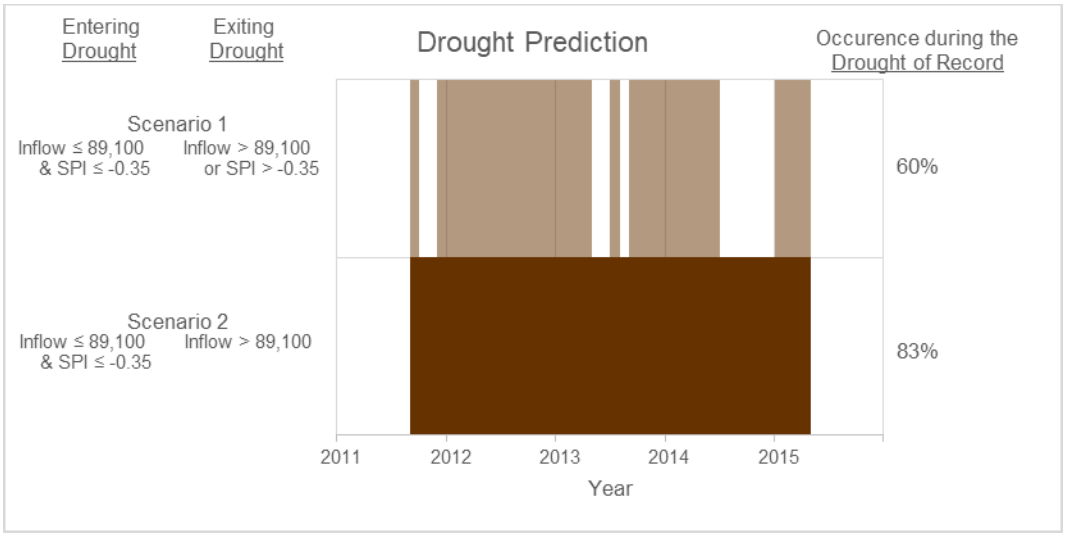

Figure 35. Two drought prediction frequency outcomes during the drought of record (Aug 2011 – Sept 2015) resulting from two scenarios. Under Scenario 1, a drought prediction ended when observed conditions increased above either an inflow threshold (e.g., 89,100 acre-ft) or a SPI threshold (e.g., -0.35) (light brown shading). Under Scenario 2, a drought prediction ended when observed conditions increased above only the inflow threshold (e.g., 89,100 acre-ft) (dark brown shading).

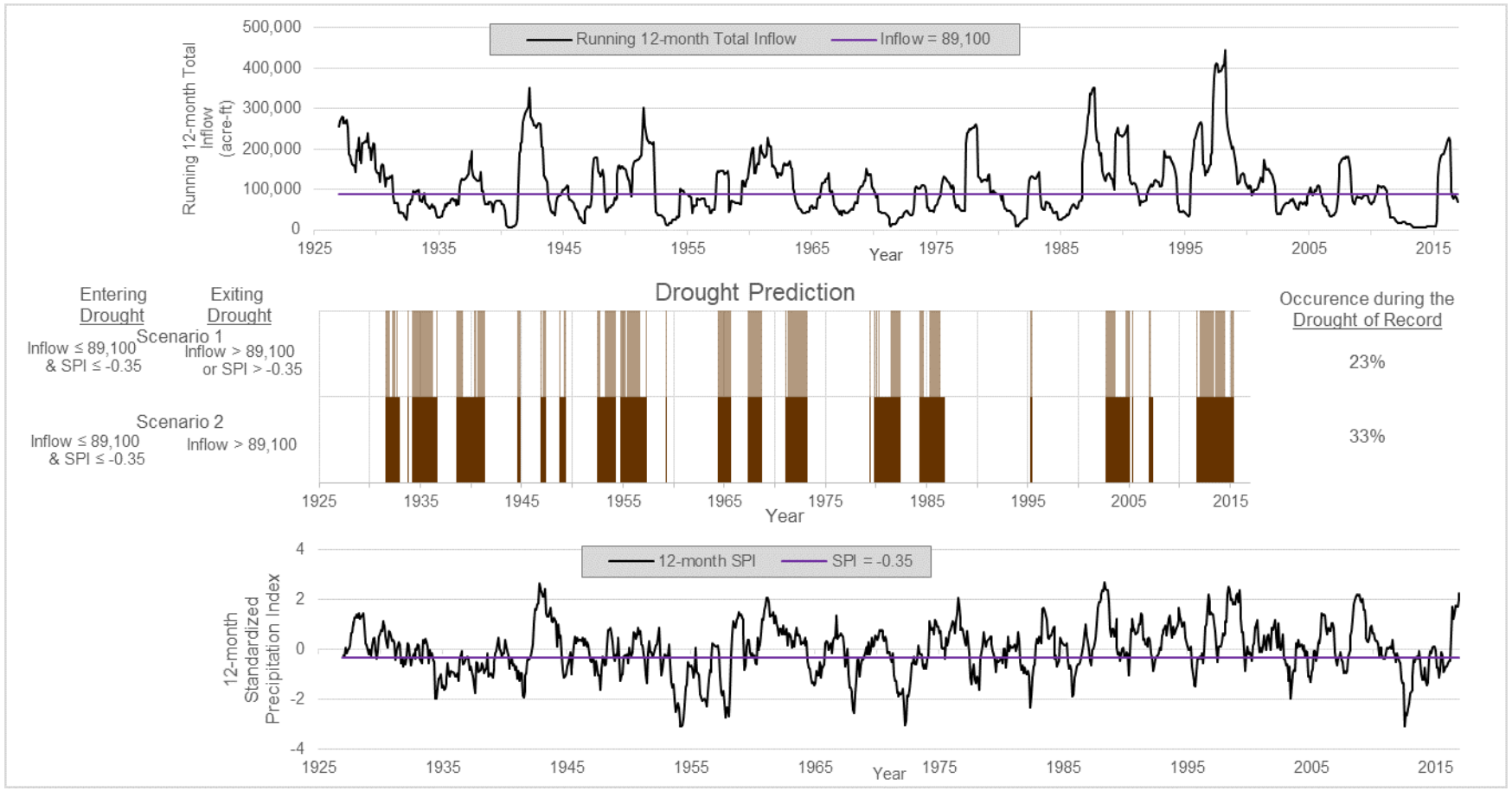

Figure 36. Two drought prediction frequency outcomes (percent of months) over the period of record (1926- 2016) resulting from two scenarios. Under Scenario 1, a drought prediction ended when observed conditions increased above either an inflow threshold (e.g., 89,100 acre-ft) or a SPI threshold (e.g., -0.35) (light brown shading). Under Scenario 2, a drought prediction ended when observed conditions increased above only the inflow threshold (e.g., 89,100 acre-ft) (dark brown shading).

Table 35. Occurrence (percentiles) of drought conditions over the period of record (1926-2016) for inflow-SPI. Threshold combinations denoted with "- " were previously eliminated from consideration.

Occurrence of Threshold Combinations (Non-Exceedance Frequency)			Drought Initiation: Observed condition was ≤ to 12-month SPI Thresholds Drought Exit: Not Applicable																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.6	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.6	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
Drought Initiation: Observed condition ≤ 12-month Running Total Inflow Threshold (acre-ft) Drought Exit: Observed condition > 12-month Running Total Inflow Threshold (acre-ft)	4,600	0th	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15,300	5th	0	3	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	30,700	10th	3	5	6	6	7	8	8	8	9	9	9	9	10	10	10	10	10	10	10	10	10
	40,400	15th	4	5	7	7	9	10	12	12	12	12	13	14	14	15	15	15	15	15	15	15	15
	45,800	20th	4	6	7	9	11	13	15	15	15	15	17	17	18	19	19	19	19	20	20	20	20
	52,900	25th	4	6	9	11	12	15	16	16	17	17	19	20	21	22	23	23	24	25	25	25	25
	59,900	30th	4	7	10	12	15	18	19	20	20	21	23	23	25	26	26	27	28	29	30	30	30
	65,100	35th	4	9	11	14	17	20	22	22	23	24	26	27	28	29	31	32	33	34	35	35	35
	70,700	40th	4	10	12	16	19	22	24	24	25	26	28	30	31	33	35	36	37	38	39	40	40
	79,100	45th	4	14	17	21	23	26	28	29	29	30	32	33	36	37	39	40	41	43	44	44	45
	89,100	50th	4	15	17	23	24	29	32	33	35	35	36	37	39	41	43	44	45	47	48	49	50
	101,500	55th	7	16	19	24	28	33	35	36	38	38	39	41	42	44	47	49	49	51	52	54	55
	110,000	60th	7	22	25	30	33	40	42	44	44	45	46	47	48	50	53	54	56	57	58	59	60
	122,500	65th	7	22	25	33	37	42	45	46	47	48	49	50	52	54	57	58	61	62	63	64	65
	132,400	70th	7	24	27	34	40	45	48	50	51	52	53	54	56	59	-	-	65	66	68	69	70
	142,700	75th	7	29	34	41	49	53	54	56	58	58	-	-	-	-	-	-	-	-	73	74	75
	160,200	80th	10	34	40	48	55	59	60	63	-	-	-	-	-	-	-	-	-	-	-	80	80
	182,500	85th	10	40	49	56	65	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85
	214,800	90th	12	47	56	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

With this definition of drought predictions in mind, the discussion turns to calculating the MSE. An example MSE calculation is presented first to provide clarity on how the MSE approach. Here, the 35th percentile SPI (-0.35) was combined with the 50th percentile inflow (89,100 acre-ft). Together, the combined inflow-SPI conditions predicted a drought 33 percent of the time over the period record, and they predicted a non-drought/wet prediction 67 percent of the time. Next, the MSE compared the threshold's drought prediction with whether or not a drought was actually observed (either "A" or "B"). It did this for each month when the combined inflow-SPI conditions predicted a drought. A similar comparison was performed between predictions versus observations of non-drought/wet periods (either "C" or "D"). The MSE then squares the difference between the predictions and observations of each of the four outcomes and then adds them all together. Continuing with this example using the MSE equation:

$$Mean\ Squared\ Error = MSE = \frac{1}{n}\sum_{k=1}^{n}(y_k - o_k)^2$$

Where:

n = number of months evaluated (1,081 months over ~91 years)

y = threshold prediction such that there is a 33 percent probability of a drought being predicted and an 67 percent probability of a non-drought/wet period being predicted.

o = observed drought result (Yes = 1; No = 0).

Result:

$$MSE = \frac{1}{1{,}081}[A(0.33-1)^2 + B(0.67-0)^2 + C(0.33-1)^2 + D(0.67-0)^2] = 0.33$$

This step was repeated to test the prediction performance for all seventeen inflow thresholds (0th to 80th percentile) when combined with the 35th percentile SPI of -0.35. In this example, performance results are displayed for D1 only. Table 36 presents the prediction outcomes under D1 of the full range of inflow

thresholds remaining when combined with a SPI of -0.35; Table 37 presents the calculations and corresponding MSE scores; and Figure 37 illustrates the MSE scores. Results showed that combining a SPI of -0.35 with higher inflow thresholds produced lower MSE scores, and thus was better at predicting observed conditions relative to combining a SPI of -0.35 with lower inflow thresholds. When all 349 MSE scores for D1 were plotted (Figure 38), it was evident that thresholds falling on the lower and upper end of the drought-prediction frequency distribution scored higher MSEs and those falling in the middle of the frequency distribution (between the 50^{th} and 60^{th} percentiles) scored the lowest MSEs.

The MSE scores for all remaining thresholds simulated by each of the eleven drought scenarios for inflow-SPI are provided in the Appendix, Table 86 through Table 96. Overall, MSE scores ranged from 0.17 to 0.68 for inflow-SPI across all drought scenarios over the period of record. Within each of the drought scenarios, the threshold with the lowest MSE score was identified (Table 38). Of the 349 thresholds evaluated for inflow-SPI, one threshold had the lowest MSE score for two of the eleven drought scenarios (inflow $\leq$ 132,400 acre-ft/yr and SPI $\leq$ 2.68), leaving a total of ten unique inflow-SPI thresholds that performed the best. Each threshold identified in Table 38 was selected for further consideration.

Table 36. Prediction outcomes of a range of inflow thresholds when combined with a SPI of -0.35; Drought Scenario 1.

		Predictions					
		(A+B)	(C+D)	A	B	C	D
Running 12-month Total Inflow Threshold (Percentile)	Running 12-month Total Inflow Threshold (acre-ft)	Number of Months Predicted as Drought	Number of Months Predicted as Wet	Number of Months Correctly Predicted as Drought	Number of Months Incorrectly Predicted as Drought	Number of Months Incorrectly Predicted as Wet	Number of Months Correctly Predicted as Wet
0th	4,600	0	1,081	0	0	624	457
5th	15,300	53	1028	47	6	577	451
10th	30,700	89	992	77	12	547	445
15th	40,400	129	952	112	17	512	440
20th	45,800	161	920	143	18	481	439
25th	52,900	178	903	157	21	467	436
30th	59,900	216	865	183	33	441	424
35th	65,100	242	839	204	38	420	419
40th	70,700	264	817	223	41	401	416
45th	79,100	311	770	258	53	366	404
50th	89,100	352	729	292	60	332	397
55th	101,500	387	694	325	62	299	395
60th	110,000	471	610	393	78	231	379
65th	122,500	502	579	402	100	222	357
70th	132,400	540	541	416	124	208	333
75th	142,700	610	471	462	148	162	309
80th	160,200	677	404	499	178	125	279

Table 37. Mean Squared Error of a range of inflow thresholds when combined with a SPI of -0.35; Drought Scenario 1.

	Analysis					
	(A+B)/1,081	A (Probability – 1)^2	B (Probability – 0)^2	C (1 – Probability – 1)^2	D (1 – Probability – 0)^2	[A(Drought Probability-1)^2 +B(Drought Probability-0)^2 +C(Wet Probability-1)^2+D (Wet Probability- 0)^2] /1,081
Running 12-month Total Inflow Threshold (Percentile)	Probability of Predicting a Drought as a percentage of Total Months (1,081) [i.e. Drought Occurrence of Threshold Combination]	Number of Months Correctly Predicted as Drought (A) Weighted Times Probability of Error Squared	Number of Months Incorrectly Predicted as Drought (B) Weighted Times Probability of Error Squared	Number of Months Incorrectly Predicted as Wet (C) Weighted Times Probability of Error Squared	Number of Months Correctly Predicted as Wet (D) Weighted Times Probability of Error Squared	Mean Squared Error
0th	(0+0) / 1,081 = 0%	0(0%-1)^2=0	0(0%-0)^2=0	624(1-0%-1)^2=0	457(1-0%-0)^2=457	[0+0+0+457]/1,081 =0.42
5th	(47+6) / 1,081 = 5%	47(5%-1)^2=42	6(5%-0)^2=0	577(1-5%-1)^2=1	451(1-5%-0)^2=407	[42+0+1+407]/1,081 =0.42
10th	(77+12) / 1,081 = 8%	77(8%-1)^2=65	12(8%-0)^2=0	547(1-8%-1)^2=4	445(1-8%-0)^2=377	[65+0+4+377]/1,081 =0.41
15th	(112+17) / 1,081 = 12%	112(12%-1)^2=87	17(12%-0)^2=0	512(1-12%-1)^2=7	440(1-12%-0)^2=341	[87+0+7+341]/1,081 =0.4
20th	(143+18) / 1,081 = 15%	143(15%-1)^2=103	18(15%-0)^2=0	481(1-15%-1)^2=11	439(1-15%-0)^2=317	[103+0+11+317]/1,081 =0.4
25th	(157+21) / 1,081 = 16%	157(16%-1)^2=111	21(16%-0)^2=1	467(1-16%-1)^2=12	436(1-16%-0)^2=308	[111+1+12+308]/1,081 =0.4
30th	(183+33) / 1,081 = 20%	183(20%-1)^2=117	33(20%-0)^2=1	441(1-20%-1)^2=18	424(1-20%-0)^2=271	[117+1+18+271]/1,081 =0.38
35th	(204+38) / 1,081 = 22%	204(22%-1)^2=124	38(22%-0)^2=2	420(1-22%-1)^2=20	419(1-22%-0)^2=255	[124+2+20+255]/1,081 =0.37
40th	(223+41) / 1,081 = 24%	223(24%-1)^2=129	41(24%-0)^2=2	401(1-24%-1)^2=23	416(1-24%-0)^2=240	[129+2+23+240]/1,081 =0.36
45th	(258+53) / 1,081 = 29%	258(29%-1)^2=130	53(29%-0)^2=4	366(1-29%-1)^2=31	404(1-29%-0)^2=204	[130+4+31+204]/1,081 =0.34
50th	(292+60) / 1,081 = 33%	292(33%-1)^2=131	60(33%-0)^2=7	332(1-33%-1)^2=36	397(1-33%-0)^2=178	[131+7+36+178]/1,081 =0.33
55th	(325+62) / 1,081 = 36%	325(36%-1)^2=133	62(36%-0)^2=8	299(1-36%-1)^2=39	395(1-36%-0)^2=162	[133+8+39+162]/1,081 =0.32
60th	(393+78) / 1,081 = 44%	393(44%-1)^2=123	78(44%-0)^2=15	231(1-44%-1)^2=45	379(1-44%-0)^2=119	[123+15+45+119]/1,081 =0.28
65th	(402+100) / 1,081 = 46%	402(46%-1)^2=117	100(46%-0)^2=21	222(1-46%-1)^2=47	357(1-46%-0)^2=104	[117+21+47+104]/1,081 =0.27
70th	(416+124) / 1,081 = 50%	416(50%-1)^2=104	124(50%-0)^2=31	208(1-50%-1)^2=52	333(1-50%-0)^2=83	[104+31+52+83]/1,081 =0.25
75th	(462+148) / 1,081 = 56%	462(56%-1)^2=89	148(56%-0)^2=46	162(1-56%-1)^2=51	309(1-56%-0)^2=60	[89+46+51+60]/1,081 =0.23
80th	(499+178) / 1,081 = 63%	499(63%-1)^2=68	178(63%-0)^2=71	125(1-63%-1)^2=50	279(1-63%-0)^2=38	[68+71+50+38]/1,081 =0.21

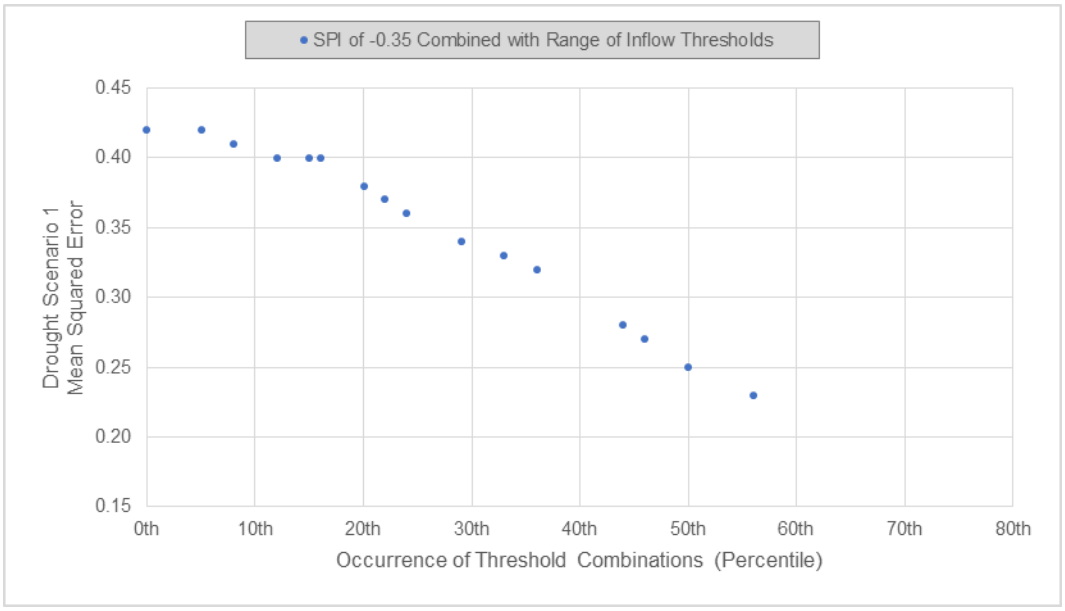

Figure 37. Mean Squared Error of a range of inflow thresholds when combined with a SPI of -0.35; Drought Scenario 1.

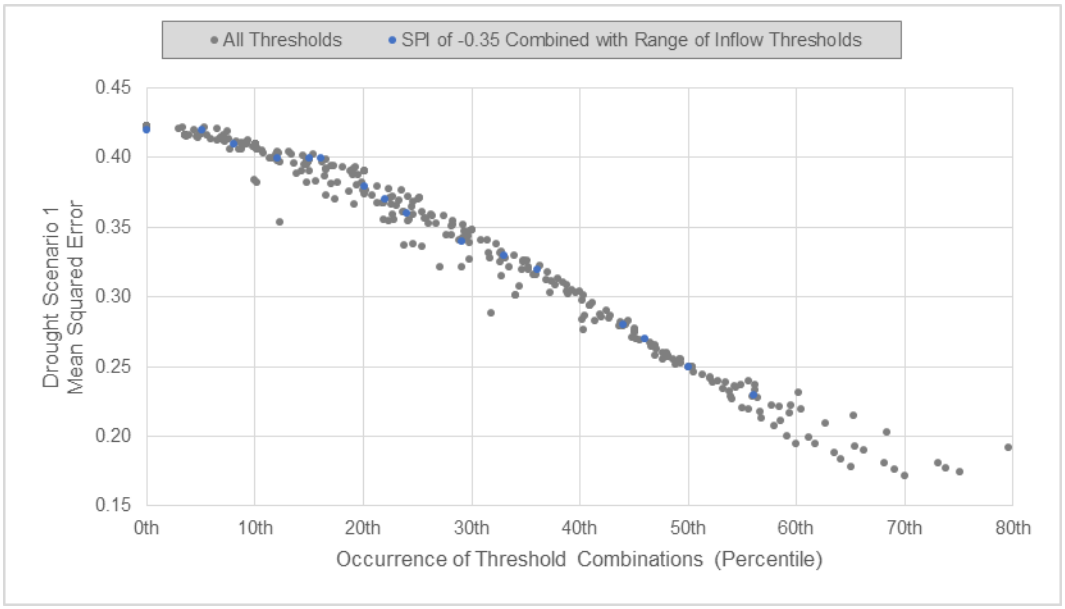

Figure 38. Mean Squared Error of a range of all thresholds for Drought Scenario 1.

Table 38. The Inflow-SPI thresholds with the lowest MSE score within each drought scenarios.

Drought Scenario	Minimum MSE Score			
	12-month Running Total Inflow (acre-ft)	12-month SPI	Percentile	MSE
D1	132,400	2.68	70	0.17
D3	182,500	-0.79	65	0.19
D4	142,700	1.25	73	0.17
D6	132,400	0.97	66	0.21
D7	142,700	2.68	75	0.17
D8	132,400	2.68	70	0.18
D9	132,400	1.72	69	0.20
D10	122,500	1.72	64	0.21
D11	110,000	2.68	60	0.22
D12	110,000	1.72	59	0.23
D13	110,000	1.25	58	0.23

Split-Sample Verification of MSE

As a means of verifying MSE results associated with predictions over the period of record, a split-sample verification analysis was performed by comparing the MSEs and corresponding optimum threshold ranges as defined by the period of record with those observed over six subset sample periods within the period of record. Based on previous results obtained so far, two outcomes were expected: (1) Given the lower amount of variability in the smaller sample periods, MSEs of thresholds within those samples should be equal to or lower than those observed over the period of record; and (2) optimum thresholds should be similar between subset samples and the period of record. The same time periods previously identified for logistic regression modeling were used here, albeit for a different purpose (Figure 39). A list of each split-sample's drought frequency as defined by each of the six drought scenarios is provided in Table 39.

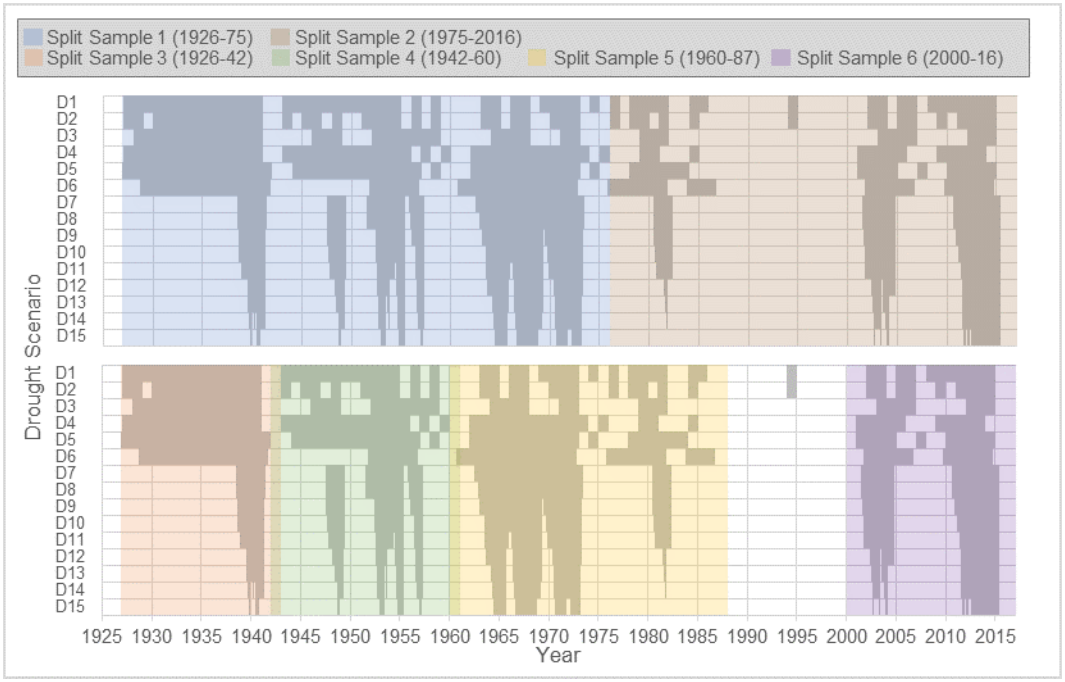

Figure 39. Split-sample periods used to verify MSE results that were calculated over the period of record, 1926-2016.

Table 39. A comparison of drought frequency between the period of record (1926-2016) and six split-sample periods for the 15 drought scenarios for the inflow-SPI models.

Drought Scenarios	Percent of Months Identified as Drought						
	1926-2016 (Period of Record)	1926-1975	1976-2016	1926-1942	1942-1960	1960-1987	2000-2016
D1	58%	59%	56%	50%	58%	61%	76%
D3	48%	45%	51%	25%	47%	57%	82%
D4	62%	67%	56%	62%	53%	71%	82%
D6	54%	62%	46%	81%	28%	75%	59%
D7	63%	59%	68%	67%	61%	57%	88%
D8	60%	57%	64%	66%	61%	50%	88%
D9	52%	47%	57%	39%	59%	49%	70%
D10	47%	44%	51%	33%	58%	46%	62%
D11	43%	42%	45%	32%	52%	44%	52%
D12	38%	37%	39%	28%	45%	39%	44%
D13	32%	33%	30%	24%	42%	31%	36%
Average	51%	50%	51%	46%	51%	53%	67%

Despite the variation in split-sample drought frequencies relative to the period of record, MSEs were lower for all split-samples compared to the period of record (Table 40). As expected, when the number of months evaluated was reduced, the error in correctly identifying drought was reduced. Overall, the split-sample results verified that inflow-SPI thresholds with relatively higher occurrence frequencies had lower MSE scores. Specifically, the range of threshold occurrence frequencies over the period of record (1926-2016) with the lowest MSE scores (i.e., 58^{th} to 70^{th} percentiles for inflow-SPI) fell within the range of threshold occurrence frequencies over the six split-sample periods, although threshold occurrence frequencies with the lowest MSE scores over the six split-sample periods were generally higher than those over the period of record (Table 38; Table 40). The full suite of results for each split-sample and respective drought scenario is provided in Appendix Table 86 through Table 151.

Table 40. Occurrence of Thresholds with a minimum MSE for each Model Period.

Drought Scenario	Occurrence (Percentile) of Inflow-SPI Threshold Combinations with the Minimum MSE						
	1926-2016	1926-1975	1976-2016	1926-1942	1942-1960	1960-1987	2000-2016
D1	70th / 0.17	70th / 0.09	70th / 0.08	70th / 0.03	75th / 0.03	75th / 0.06	75th / 0.03
D3	65th / 0.19	65th / 0.11	68th / 0.08	65th / 0.03	68th / 0.04	68th / 0.05	60th / 0.03
D4	73th / 0.17	75th / 0.08	68th / 0.08	80th / 0.02	65th / 0.04	80th / 0.04	85th / 0.03
D6	66th / 0.21	66th / 0.12	65th / 0.09	85th / 0.02	57th / 0.05	24th / 0.06	66th / 0.03
D7	75th / 0.17	75th / 0.1	85th / 0.07	80th / 0.01	75th / 0.04	68th / 0.06	85th / 0.01
D8	70th / 0.18	70th / 0.1	68th / 0.08	80th / 0.01	75th / 0.04	32th / 0.06	85th / 0.01
D9	69th / 0.2	69th / 0.12	74th / 0.08	65th / 0.04	70th / 0.04	32th / 0.06	73th / 0.03
D10	64th / 0.21	60th / 0.12	63th / 0.09	60th / 0.04	70th / 0.04	68th / 0.06	73th / 0.03
D11	60th / 0.22	60th / 0.12	63th / 0.09	60th / 0.04	70th / 0.04	68th / 0.06	63th / 0.04
D12	59th / 0.23	60th / 0.12	63th / 0.1	60th / 0.04	65th / 0.05	65th / 0.07	63th / 0.04
D13	58th / 0.23	60th / 0.13	63th / 0.1	60th / 0.04	60th / 0.05	32th / 0.07	60th / 0.04

Conditional Probability

While the MSE measured how well the RDIs predicted historical drought conditions in terms of all four outcomes A, B, C, and D (Table 30), the Conditional Probability Approach, using the same variables and outcomes defined in Table 30, focused on the combined probability of a threshold correctly predicting an observed drought (i.e., [A/(A+C)]) with the probability of observing a predicted drought [A/(A+B)] (Wilks, 2011). The former is known as the "probability of detection" (POD), while the latter is known as the "success ratio" (SR) (NOAA et al, 2019). Unlike MSE which ideally is low, better performing RDIs have a higher POD and SR.

As was done for MSE, the POD and SR were calculated for all 349 inflow-SPI thresholds under the 11 drought scenarios. Similar to MSE, the analysis began with presenting results for one example SPI threshold under one drought scenario before presenting results for the other drought scenarios. Referring to Table 7, the same example is considered where the 35th percentile

SPI (-0.35) was combined with the 50th percentile inflow (89,100 acre-ft) to test performance under Drought Scenario 1; here, the conditional probabilities (POD and SR) were calculated as follows:

$$Probability\ of\ Detection\ (POD) = \frac{A}{A+C} = \frac{292}{292+332} = 47\%$$

$$Success\ Ratio\ (SR) = \frac{A}{A+B} = \frac{292}{292+60} = 83\%$$

In other words, of the 624 drought months observed on record (under Drought Scenario 1), this threshold combination correctly predicted 292 of those or 47 percent; the remaining 332 historical droughts months (53 percent) were missed. However, of the 352 droughts that were predicted, 292 (83 percent) were correct, meaning that 60 (17 percent) were false positives (i.e., the threshold predicted a drought, but a drought was not observed). This step was repeated for all 17 inflow thresholds (0th to 80th percentile) when combined with the 35th percentile SPI of -0.35 (Table 41 and Figure 40). Figure 41 illustrates this example threshold alongside results for all thresholds tested for Drought Scenario 1. The figure shows that lower threshold occurrence frequencies had higher SRs but lower PODs, whereas higher threshold occurrence frequencies had lower SRs but higher PODs. Optimum thresholds appeared to be those that fell somewhere in the middle, and within an area where POD and SR overlap.

As illustrated in Figure 42, the optimum inflow-SPI threshold(s), as denoted by the black squares, were those that occurred at those occurrence percentiles where the intersection occurred. Specifically, for Drought Scenario 1, POD and SR overlapped at around the 58th percentile occurrence frequency; for Drought Scenario 3, POD and SR overlapped at around the 48th percentile occurrence frequency; and for Drought Scenario 4, POD and SR overlapped at around the 63rd percentile occurrence frequency (Figure 42). Figure 43 illustrates results for Drought Scenario 6-8; Figure 44 illustrates results for Drought Scenario 9-11; and Figure 45 illustrates results for Drought Scenario 12 and 13.

Table 42 list the 40 specific POD-SR intersections (i.e., optimal thresholds) for all inflow-SPI thresholds, respectively, across all the respective drought scenarios. Four inflow-SPI threshold combinations repeat between the 11 drought scenarios: D3 and D10 both include inflow < 110,000 acre ft/yr and SPI < 0.19, inflow < 122,500 acre ft/yr and SPI < -0.12, and inflow < 132,400 acre ft/yr and SPI < -0.47 and D4 and D7 both include inflow < 122,500 acre ft/yr and SPI < 1.25. In total, 36 unique inflow-SPI thresholds were selected for further consideration. All other thresholds were eliminated from consideration. Results for all threshold combinations are included in Appendix Table 152 through Table 162.

Table 41. Conditional Probability results of a range of inflow thresholds when combined with a SPI of -0.35; Drought Scenario 1.

Running 12-month Total Inflow Threshold (Percentile)	Observations	Predictions		Analysis		
	(A+C)	(A+B)	A	(A+B)/1,081	A / (A+C)	A / (A+B)
	Number of Observed Drought Months	Number of Months Predicted as Drought	Number of Months Correctly Predicted as Drought (A)	Occurrence Frequency of Threshold Combinations (percent)	Probability of Detection (POD) (percent)	Success Ratio (SR) (percent)
0th	624	0	0	0 / 1,081 = 0	0 / 624 = 0	-
5th	624	53	47	53 / 1,081 = 5	47 / 624 = 8	47 / 53 = 89
10th	624	89	77	89 / 1,081 = 8	77 / 624 = 12	77 / 89 = 87
15th	624	129	112	129 / 1,081 = 12	112 / 624 = 18	112 / 129 = 87
20th	624	161	143	161 / 1,081 = 15	143 / 624 = 23	143 / 161 = 89
25th	624	178	157	178 / 1,081 = 16	157 / 624 = 25	157 / 178 = 88
30th	624	216	183	216 / 1,081 = 20	183 / 624 = 29	183 / 216 = 85
35th	624	242	204	242 / 1,081 = 22	204 / 624 = 33	204 / 242 = 84
40th	624	264	223	264 / 1,081 = 24	223 / 624 = 36	223 / 264 = 84
45th	624	311	258	311 / 1,081 = 29	258 / 624 = 41	258 / 311 = 83
50th	624	352	292	352 / 1,081 = 33	292 / 624 = 47	292 / 352 = 83
55th	624	387	325	387 / 1,081 = 36	325 / 624 = 52	325 / 387 = 84
60th	624	471	393	471 / 1,081 = 44	393 / 624 = 63	393 / 471 = 83
65th	624	502	402	502 / 1,081 = 46	402 / 624 = 64	402 / 502 = 80
70th	624	540	416	540 / 1,081 = 50	416 / 624 = 67	416 / 540 = 77
75th	624	610	462	610 / 1,081 = 56	462 / 624 = 74	462 / 610 = 76
80th	624	677	499	677 / 1,081 = 63	499 / 624 = 80	499 / 677 = 74

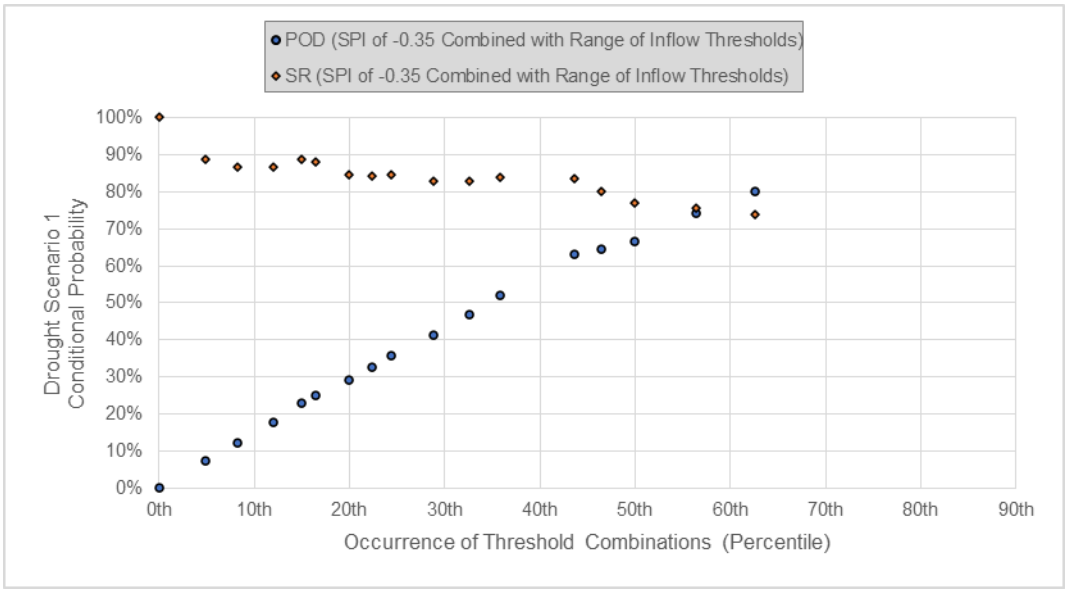

Figure 40. Conditional Probability results of a range of inflow thresholds when combined with a SPI of -0.35; Drought Scenario 1.

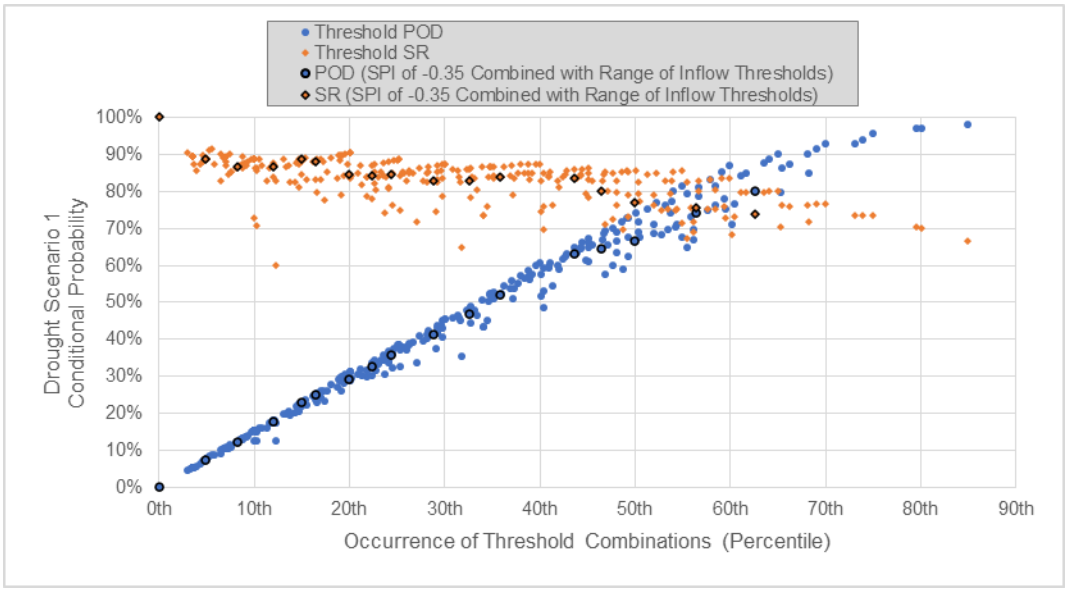

Figure 41. Conditional probability of all inflow-SPI thresholds for Drought Scenario 1.

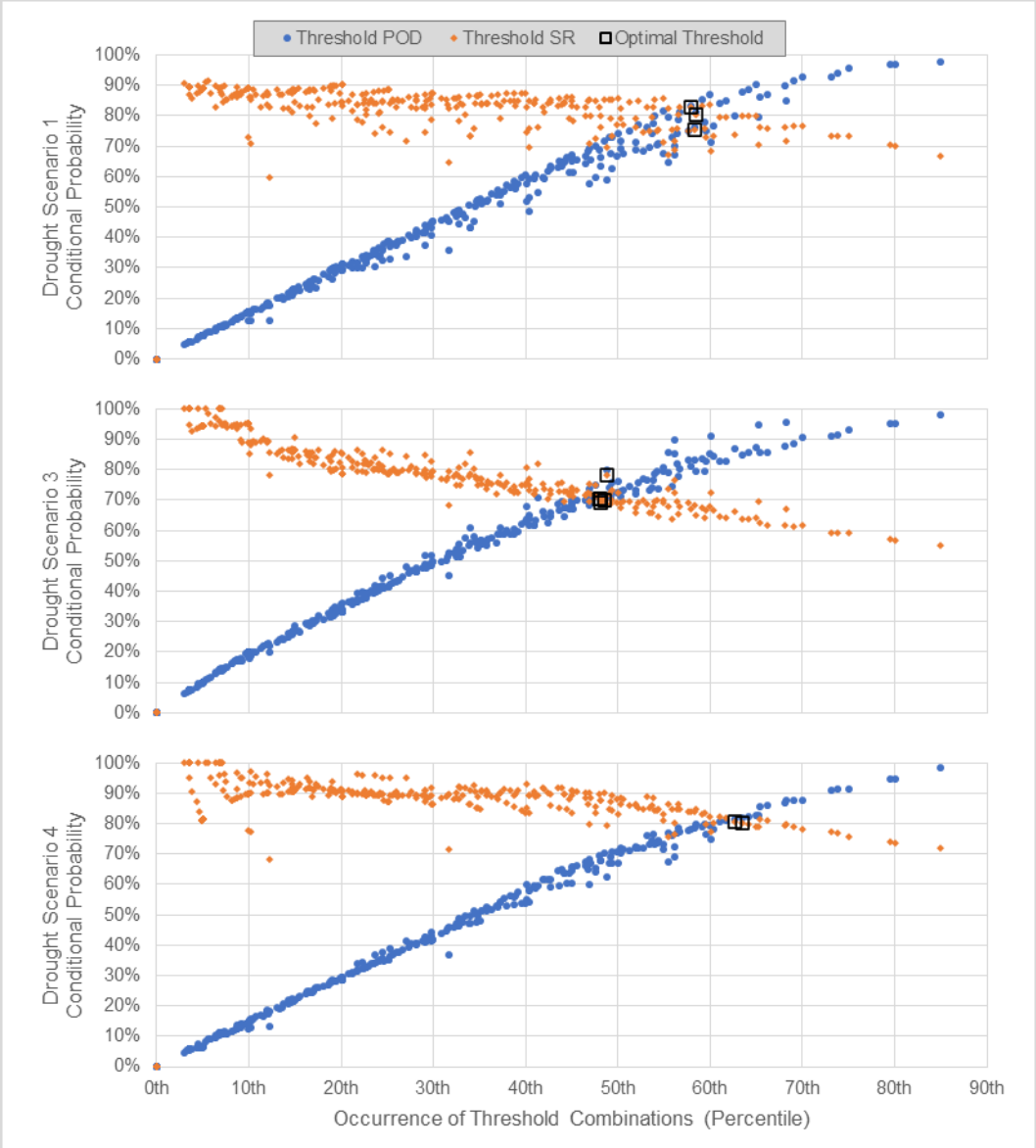

Figure 42. Conditional probability of all inflow-SPI thresholds for Drought Scenario 1, 3, and 4.

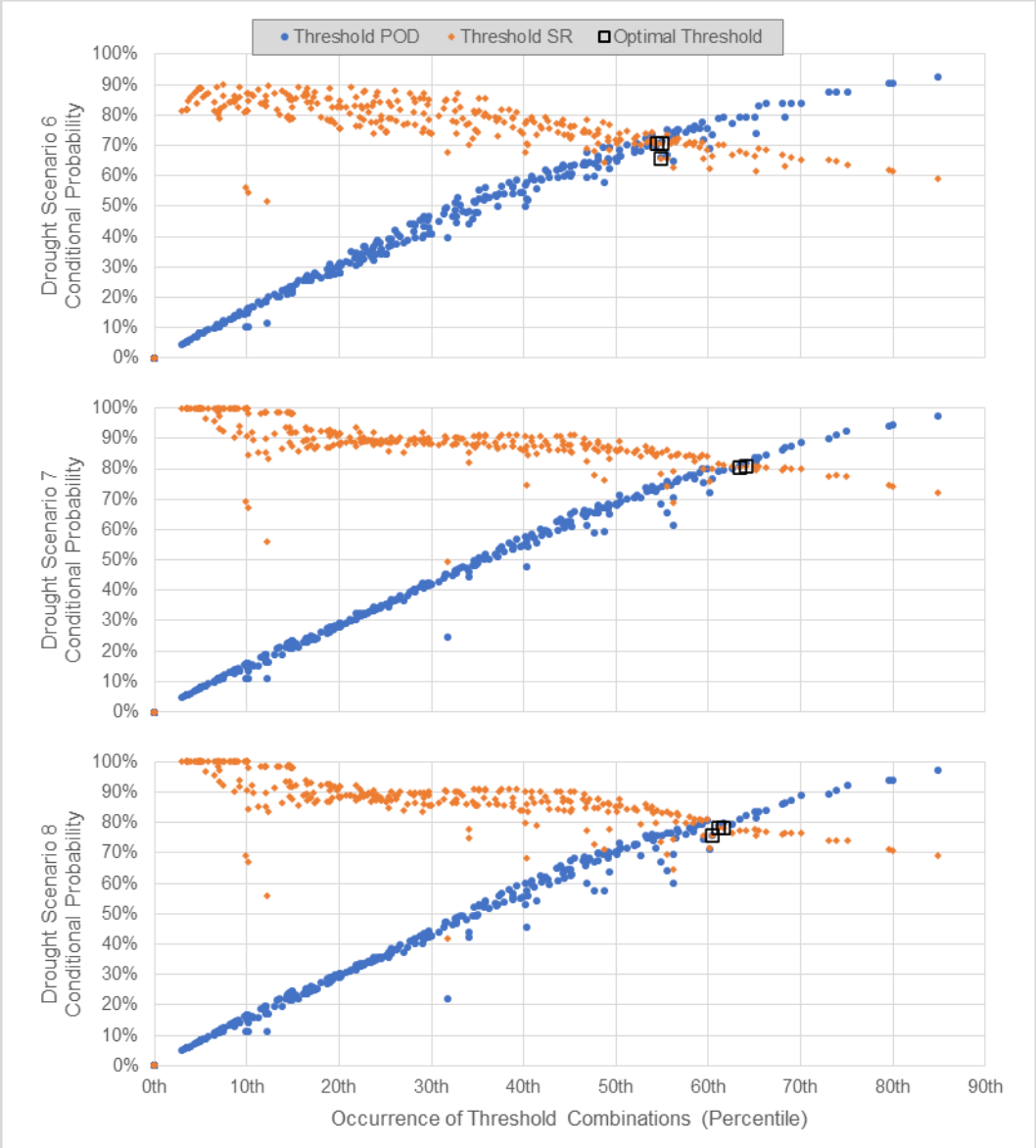

Figure 43. Conditional probability of all inflow-SPI thresholds for Drought Scenario 6-8.

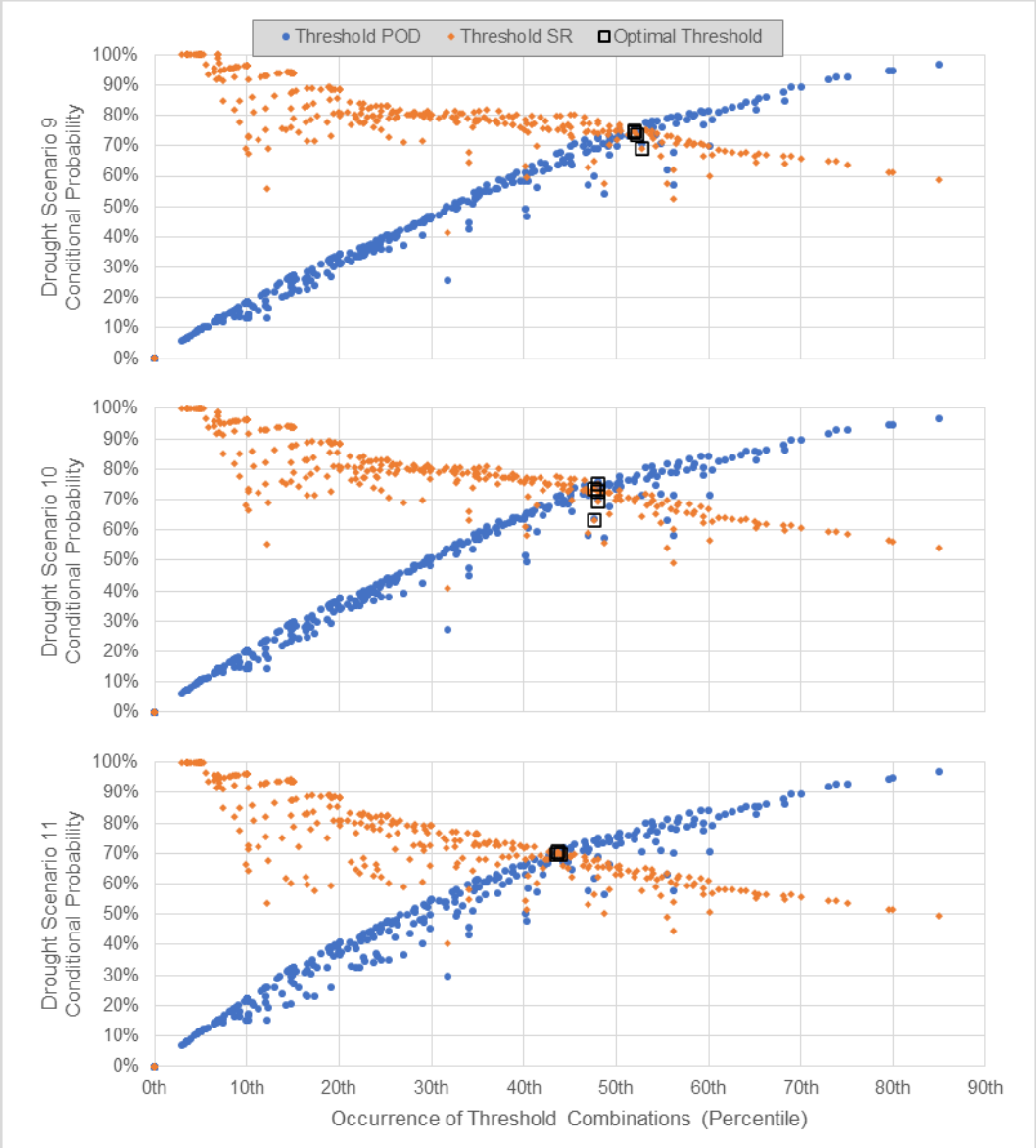

Figure 44. Conditional probability of all inflow-SPI thresholds for Drought Scenario 9-11.

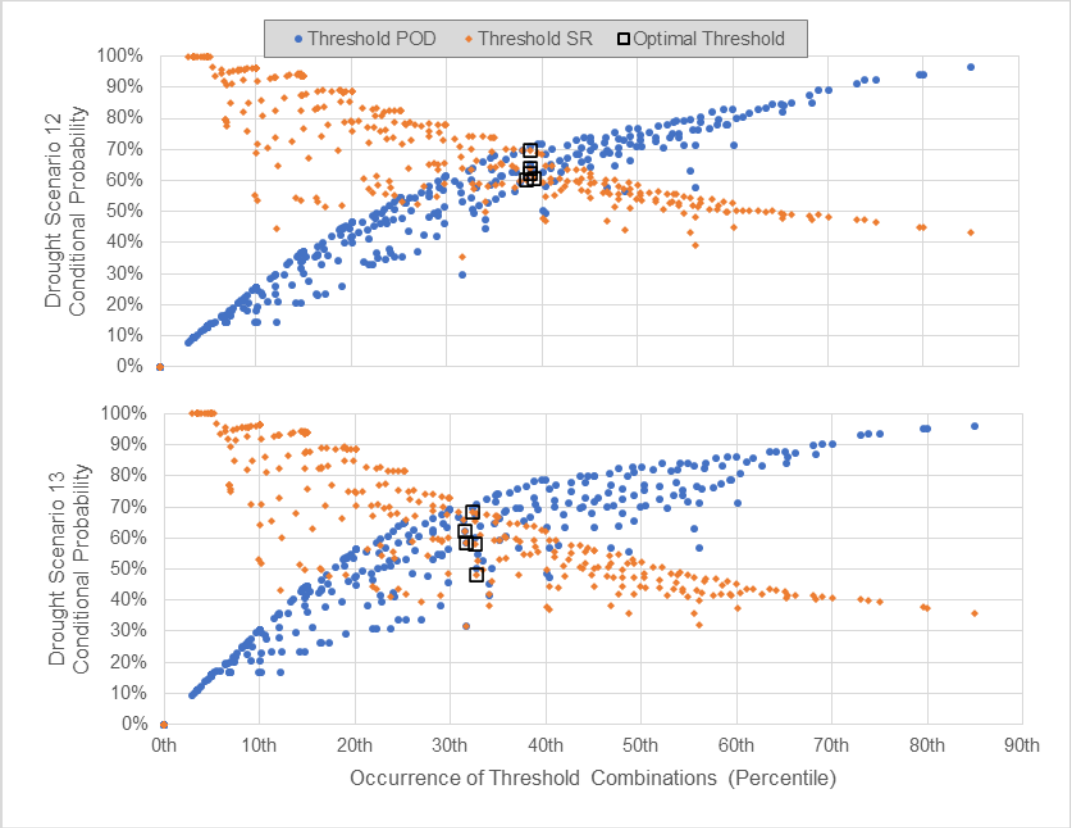

Figure 45. Conditional probability of all inflow-SPI thresholds for Drought Scenario 12-13.

Table 42. Range of optimal inflow-SPI thresholds and corresponding occurrence percentiles under eleven drought scenarios as determined by Conditional Probability results.

Drought Scenario	Optimal Inflow-SPI Thresholds				
	12-month Running Total Inflow (acre-ft)	12-month Running Average SPI	Percentile	POD	SR
D1	142,700	-0.12	37	76%	75%
	122,500	0.60	53	81%	80%
	110,000	1.25	57	83%	83%
D3	182,500	-1.22	9	80%	78%
	132,400	-0.47	24	70%	69%
	122,500	-0.12	33	71%	70%
	110,000	0.19	40	71%	70%
	101,500	0.60	46	71%	70%
D4	160,200	-0.35	30	81%	81%
	122,500	1.25	61	82%	80%
D6	160,200	-0.79	18	66%	66%
	132,400	0.11	41	70%	70%
	101,500	2.68	55	71%	71%
D7	122,500	1.25	61	81%	81%
	122,500	1.72	64	82%	81%
D8	160,200	-0.47	26	76%	76%
	122,500	0.77	56	79%	78%
	122,500	0.97	58	80%	78%
D9	142,700	-0.60	21	71%	69%
	132,400	-0.12	35	75%	74%
	122,500	0.19	43	76%	75%
	101,500	1.25	52	75%	74%
D10	160,200	-0.99	13	64%	63%
	132,400	-0.47	24	70%	69%
	122,500	-0.12	33	74%	73%
	110,000	0.19	40	76%	75%
	89,100	1.25	47	74%	74%
D11	110,000	-0.35	26	70%	70%
	110,000	-0.23	29	71%	70%
	79,100	1.25	43	71%	70%
D12	101,500	-0.12	30	61%	60%
	101,500	-0.01	32	63%	61%
	89,100	0.19	34	64%	62%
	79,100	0.49	37	65%	64%
	70,700	1.25	39	71%	70%
D13	122,500	-0.99	12	50%	48%
	89,100	-0.47	21	59%	58%
	89,100	-0.35	23	60%	58%
	79,100	-0.01	27	62%	62%
	65,100	0.60	31	70%	68%

Conclusions

This section began with 349 potential inflow-SPI thresholds under consideration. Through the calculation of each threshold's MSE and Conditional Probability, 44 unique inflow-SPI thresholds[b] were selected as optimal in terms of their ability to predict observed, historical conditions as defined by their respective drought scenarios (Table 38; Table 42). Recognizing that future droughts can manifest in any of these drought scenario forms[c], an important consideration was not just how well these thresholds could predict the specific drought being tested, but how it could predict *any* of the droughts. For this reason, the term *optimal threshold* was refined by identifying each threshold's minimum MSE, maximum POD and maximum SR associated with *any* of the drought scenarios under consideration (Table 43).

[b] The 44 unique threshold combinations were derived by combining the 10 inflow-SPI thresholds from the MSE analysis and 36 inflow-SPI thresholds from the Conditional Probability, which two of these inflow-SPI thresholds were common between both analyses.

[c] It is recognized that drought can come in any form, not just the drought scenarios under consideration here; but drought must be defined in specific terms for the purposes of analysis.

Table 43. Minimum MSE, maximum POD, and maximum SR corresponding to 44 Inflow-SPI thresholds that are arranged by frequency of occurrence (percentile) over the period of record, 1926-2016.

Summary of Threshold Performance					
12-month Running Total Inflow (acre-ft)	12-month Running Average SPI	Occurrence Frequency (Percentile)	Minimum MSE for all Drought Scenarios	Maximum POD for all Drought Scenarios	Maximum SR for all Drought Scenarios
79,100	-0.01	32	0.33	62%	91%
89,100	-0.47	32	0.33	59%	90%
65,100	0.60	32	0.32	70%	88%
89,100	-0.35	33	0.32	60%	90%
122,500	-0.99	33	0.32	55%	92%
101,500	-0.12	38	0.31	67%	91%
79,100	0.49	39	0.30	73%	89%
70,700	1.25	39	0.30	78%	87%
89,100	0.19	39	0.30	71%	90%
101,500	-0.01	39	0.30	69%	91%
110,000	-0.35	44	0.28	71%	92%
79,100	1.25	44	0.27	80%	86%
110,000	-0.23	44	0.28	72%	92%
160,200	-0.99	48	0.25	75%	83%
89,100	1.25	48	0.26	82%	87%
110,000	0.19	48	0.26	76%	90%
132,400	-0.47	48	0.26	70%	88%
122,500	-0.12	48	0.26	74%	88%
101,500	0.60	49	0.25	80%	90%
182,500	-1.22	49	0.25	80%	80%
132,400	-0.12	52	0.24	76%	86%
122,500	0.19	52	0.24	77%	86%
101,500	1.25	52	0.24	84%	86%
142,700	-0.60	53	0.24	77%	85%
132,400	0.11	54	0.23	78%	85%
160,200	-0.79	55	0.23	80%	81%
101,500	2.68	55	0.22	84%	86%
110,000	1.25	58	0.21	86%	85%
142,700	-0.12	58	0.21	83%	84%
122,500	0.60	58	0.21	83%	85%

Table 43. Continued. Minimum MSE, maximum POD, and maximum SR corresponding to 44 Inflow-SPI thresholds that are arranged by frequency of occurrence (percentile) over the period of record, 1926-2016.

Summary of Threshold Performance					
12-month Running Total Inflow (acre-ft)	12-month Running Average SPI	Occurrence Frequency (Percentile)	Minimum MSE for all Drought Scenarios	Maximum POD for all Drought Scenarios	Maximum SR for all Drought Scenarios
110,000	1.72	59	0.20	86%	84%
110,000	2.68	60	0.19	87%	84%
160,200	-0.47	60	0.21	84%	80%
122,500	0.77	61	0.20	84%	82%
122,500	0.97	62	0.20	86%	82%
160,200	-0.35	63	0.20	87%	81%
122,500	1.25	63	0.19	88%	81%
122,500	1.72	64	0.18	89%	81%
182,500	-0.79	65	0.19	95%	80%
132,400	0.97	66	0.18	87%	81%
132,400	1.72	69	0.18	92%	80%
132,400	2.68	70	0.17	93%	80%
142,700	1.25	73	0.17	93%	78%
142,700	2.68	75	0.17	96%	78%

Next, three steps were undertaken to further limit the range of thresholds to carry forward for additional analyses. The first step was to eliminate thresholds with positive SPI values, as well as thresholds with occurrence frequencies that exceeded 50 percent. This was because: (1) it was considered unpractical to adopt drought management strategies when conditions are considered to be wet (i.e., non-drought) according to the Palmer Drought Index Categories (Palmer, 1965); and (2) it was considered unpractical to adopt drought management strategies at a frequency that exceeds the frequency of average drought conditions, which was 51 percent over the period of record [(1926-2016) (Table 39)]. After applying these criteria, the number of inflow-SPI thresholds was reduced from 44 thresholds to 12 thresholds (Table 44). This range should provide stakeholders with a broad range of hydrologic threshold options from which to select depending on how those hydrologic threshold options affect water availability in the reservoirs and within the basin as a whole[d].

[d] This study did not select or otherwise recommend which hydrologic threshold options should be implemented. Any potential recommendations and/or decisions would be made by the OWRB and in coordination with stakeholders upon the completion of this study.

Table 44. Minimum MSE, maximum POD, and maximum SR corresponding to 12 inflow-SPI thresholds arranged by frequency of occurrence (percentile) over the period of record, 1926-2016.

Summary of Inflow-SPI Threshold Performance					
12-month Running Total Inflow (acre-ft)	12-month Running Average SPI	Occurrence Frequency (Percentile)	Minimum MSE for all Drought Scenarios	Maximum POD for all Drought Scenarios	Maximum SR for all Drought Scenarios
79,100	-0.01	32	0.33	62%	91%
89,100	-0.47	32	0.33	59%	90%
89,100	-0.35	33	0.32	60%	90%
122,500	-0.99	33	0.32	55%	92%
101,500	-0.12	38	0.31	67%	91%
101,500	-0.01	39	0.30	69%	91%
110,000	-0.35	44	0.28	71%	92%
110,000	-0.23	44	0.28	72%	92%
160,200	-0.99	48	0.25	75%	83%
132,400	-0.47	48	0.26	70%	88%
122,500	-0.12	48	0.26	74%	88%
182,500	-1.22	49	0.25	80%	80%

As a practical matter in terms of the resources needed to model these thresholds and interpret results, a third step was implemented to narrow down the number of thresholds even further, ideally to a range of a few preferable thresholds that minimized overall prediction errors (i.e., have the lowest MSE) and maximize POD and/or SR, while also encompassing a range of inflow and SPI values that existed across a range of occurrence frequencies.

Selection of Inflow-SPI Thresholds

The same selection process used to select inflow-SPI thresholds was applied to inflow-SPI thresholds. Upon examining inflow-SPI, it was evident that the thresholds could be placed into two groups based on the range of occurrence frequencies. Group I was comprised of six thresholds that occurred between the 32nd and 39th percentiles, and Group II was comprised of six thresholds that occurred between the 44th and 49th percentiles (Table 45).

Table 45. Minimum MSE, maximum POD, and maximum SR corresponding to 12 inflow-SPI thresholds divided into two groups based on the frequency of occurrence (percentile) over the period of record, 1926-2016.

	Summary of Threshold Performance					
	12-month Running Total Inflow (acre-ft)	12-month SPI	Occurrence Frequency (Percentile)	Minimum MSE for all Drought Scenarios	Maximum POD for all Drought Scenarios	Maximum SR for all Drought Scenarios
Group I	79,100	-0.01	32	0.33	62%	91%
	89,100	-0.47	32	0.33	59%	90%
	89,100	-0.35	33	0.32	60%	90%
	122,500	-0.99	33	0.32	55%	92%
	101,500	-0.12	38	0.31	67%	91%
	101,500	-0.01	39	0.30	69%	91%
Group II	110,000	-0.35	44	0.28	71%	92%
	110,000	-0.23	44	0.28	72%	92%
	160,200	-0.99	48	0.25	75%	83%
	132,400	-0.47	48	0.26	70%	88%
	122,500	-0.12	48	0.26	74%	88%
	182,500	-1.22	49	0.25	80%	80%

Next, the POD and SR of the 12 inflow-SPI thresholds were plotted against each other to better visualize the trade-off between POD and SR (Figure 46). Recall again that preferred thresholds were those that balanced POD and SR, while also having a lower frequency of occurrence. Additionally, in-so-far as POD and SR scores did not yield definitive results into preferred thresholds, OWRB preferred thresholds that had a relatively lower frequency of occurrence, meaning they would trigger water right curtailments less often. For inflow-SPI, three of the six threshold combinations were selected from Group I: (1) **Inflow ≤ 79,100 acre-ft and SPI ≤ -0.01**; (2) **Inflow ≤ 89,100 acre-ft and SPI ≤ -0.35**; and (3) **Inflow ≤ 101,500 acre-ft and SPI ≤ -0.12**. This was because those three threshold combinations had the highest PODs, while also maintaining high SRs (Table 45). Within Group II, one of the six threshold combinations were selected: **inflow ≤ 110,000 acre-ft and SPI ≤ -0.23**. This was because it had the lowest occurrence frequency of the four thresholds in Group II, yet still had high POD and SR scores. Looking at Figure 46, of the 12 thresholds, the four thresholds that were selected generally fell within the middle of the range of thresholds in terms of POD and SR scores. In effect, these four thresholds represented a "Lowest Inflow-Highest SPI" option; a "Medium Inflow-Lowest SPI" option; a "High Inflow-Medium SPI" option; and a "Highest Inflow-Low SPI" option (Table 46). In the next section (Part VI), these thresholds are combined with reservoir storage and timing thresholds to formulate a final range of Hydrologic Threshold Alternatives.

The selection of inflow-SPI thresholds faced challenges, although the POD and SR results for inflow-SPI were slightly more revealing in terms of revealing which thresholds may be preferred. To the extent that the trade-off between POD and SR was not entirely clear among the thresholds, best professional judgement was employed to account of other considerations, such as the practicality of implementation. As previously discussed, thresholds with lower occurrence frequencies were preferred by the OWRB for the purposes of water management in the basin. To be clear, all 12 inflow-SPI thresholds should

be considered relatively good performers in terms of predicting historical droughts, so any of the thresholds could have been selected.

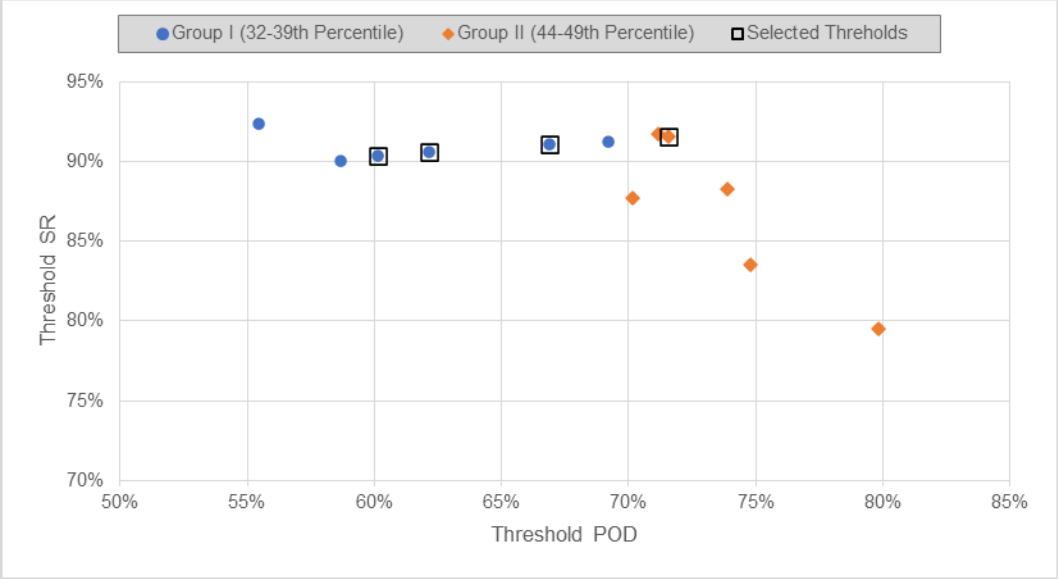

Figure 46. Comparison of POD and SR for 12 inflow-SPI thresholds that were divided into two groups based on the occurrence frequencies (percentiles) over the period of record (1926-2016). The four thresholds denoted with black squares were selected for further consideration.

Table 46. Summary of proposed inflow-SPI thresholds to include as part of Hydrologic Threshold Alternatives.

Alternatives Considered	12-month Running Total Inflow (acre-ft)	12-month Running Average SPI	Percentile
Lowest Inflow – Highest SPI	79,100	-0.01	32nd
Medium Inflow – Lowest SPI	89,100	-0.35	33rd
High Inflow – Medium SPI	101,500	-0.12	38th
Highest Inflow – Low SPI	110,000	-0.23	44th

One final note regarding the occurrence frequencies of the final range of thresholds selected for inflow-SPI. It should be recognized that the thresholds for inflow-SPI were reached at the 32nd, 38th, and 44th percentiles when considering *all 1,081 months on record*. These frequencies changed slightly if one considers whether the threshold was reached in any given month out of the year (Table 47). For example, although the threshold, inflow ≤ 110,000 acre-ft and SPI ≤ -0.23

was reached 44 percent of all 1,081 months, it was reached in 44 percent of all Januarys, 47 percent of all Februarys, and so forth (Table 47). However, while the threshold would be reached 44 percent of all months, this does not mean a water management event would occur in 44 percent of all Januarys and 47 percent of all Februarys. Rather, the frequency of threshold occurrence by month depends on which month a water management event may be *initiated*; in other words, just because a threshold was reached in a particular month, this does not mean that a management event would necessarily occur.

Another important factor is reservoir storage. When reservoir storage thresholds were combined with inflow and SPI thresholds, the occurrence frequency of water management events changed substantially. An in depth analysis on reservoir storage thresholds and water management timing is discussed in the next section, Part VI.

Table 47. Percent of months that four proposed inflow-SPI thresholds are reached over the period of record, 1926-2016.

	Inflow-SPI			
Inflow	≤ 110,000	≤ 101,500	≤ 89,100	≤ 79,100
SPI	≤ -0.23	≤ -0.12	≤ -0.35	≤ -0.01
Percent of all Months	44	38	33	32
Percent of all Januarys	44	40	33	32
Percent of all Februarys	47	37	33	33
Percent of all Marchs	44	37	34	33
Percent of all Aprils	46	40	38	32
Percent of all Mays	43	37	30	28
Percent of all Junes	42	38	29	29
Percent of all Julys	41	38	29	30
Percent of all Augusts	43	40	32	32
Percent of all Septembers	47	40	32	31
Percent of all Octobers	43	39	33	33
Percent of all Novembers	43	38	33	32
Percent of all Decembers	43	38	33	32

PART VI: FORMULATION OF HYDROLOGIC THRESHOLD ALTERNATIVES

The analysis thus far culminated in the selection of a range of preferred inflow-SPI thresholds. The next step was to consider other important factors, such as conditions at the reservoir itself and the timing of water right curtailments[e] that could be implemented when one or more thresholds are reached. Recall again that the goal of this effort was to identify and evaluate a range of pre-determined "triggers" to manage water in the hydrologic basin in such a way as to protect reservoir storage, but in a manner that maximizes overall beneficial use of water within the basin. These "triggers" are henceforth referred to as Hydrologic Threshold Alternatives. In this section, conclusions derived through Parts I-V were used to formulate a range of Hydrologic Threshold Alternatives.

Recall that Part III of this analysis discussed how Hydrologic Threshold Alternatives should be based on a combination of one or more LDIs and RDIs to allow for monitoring/detecting conditions directly at the reservoir and across the basin as a whole, respectively. The two LDIs selected were: (1) Inflow into Lugert-Altus Reservoir and (2) Lugert-Altus Reservoir storage. The RDI selected was SPI.

[e] Recall again the discussion in Chapter 8.2.5 of the URRBS Report. If certain alluvial groundwater was reclassified as stream water under Oklahoma law, then the North Fork Red River (NFRR) rights to stored water in Lugert-Altus Reservoir would be senior to almost all groundwater permits in the NFRR alluvial aquifer. Furthermore, the impact of groundwater pumping upon Lugert-Altus Reservoir was of sufficient magnitude, as demonstrated in Chapter 6.4.3 of the URRBS Report, that Lugert-Altus Irrigation District and OWRB may have incentive to work together to adopt interference regulations specific to protecting senior water rights on the NFRR to water stored in Lugert-Altus Reservoir (Kershen, 2021). The OWRB could use hydrological information and the defined water rights to identify thresholds that could define interference that protect the senior water rights from interference, while maximizing beneficial use for junior groundwater pumpers from the NFRR alluvial aquifer.

Inflow-SPI Thresholds

Parts IV and V demonstrated that four inflow-SPI threshold combinations were preferred thresholds:

1. Inflow ≤ 79,100 acre-ft and SPI ≤ -0.01
2. Inflow ≤ 89,100 acre-ft and SPI ≤ -0.35
3. Inflow ≤ 101,500 acre-ft and SPI ≤ -0.12
4. Inflow ≤ 110,000 acre-ft and SPI ≤ -0.23

Reservoir Storage Thresholds

Consideration was given towards conducting statistical analyses similar to that used to select inflow-SPI thresholds to identify preferred Lugert-Altus Reservoir storage thresholds. However, while the idea of using reservoir storage to predict droughts seems rather straightforward in concept, it is complicated by factors such as losses from sedimentation, evaporation, and changing demands on the reservoir over time. Further complicating the matter is the diversity of opinions surrounding the extent to which changing storage conditions reflect the occurrence of drought. For example, some believe that a drop in conservation pool storage, however small, constitutes the onset of a drought, and that the duration of the drought is subsequently defined as the time between which the reservoir dropped below conservation pool to the time when the reservoir filled back up to conservation pool. For these reasons, an in-depth analysis on predictive performance of reservoir storage was not performed; rather, a broad range of reservoir storage conditions was selected as thresholds to consider in combination with inflow and SPI. For each of the four inflow-SPI thresholds selected, the following reservoir thresholds were considered: reservoir storage is < 100 percent full to zero percent full, and every 10 percent increment in between (e.g., ≤ 90 percent, ≤ 80 percent, ≤ 70 percent, ≤ 60 percent, etc.). Formulating Hydrologic Threshold Alternatives in this manner essentially used statistics on predictive performance to constrain the range of inflow and SPI conditions

considered, yet avoided constraining the range of reservoir storage conditions considered, which arguably is the most important (but complicated) indicator of a hydrologic drought in the context of this basin study. In doing so, it resulted in a final range of Hydrologic Threshold Alternatives that was comprehensive yet not overwhelming for water managers and decision-makers. As a baseline by which to compare, reservoir storage alone also was selected for this analysis.

Overall, ten reservoir storage thresholds were selected, ranging from < 100 percent to zero percent full, with each 10 percent storage increment in between. The occurrence frequency of these ten reservoir storage thresholds both alone and in combination with the four inflow-SPI thresholds is provided in Table 48; and illustrations are provided in Figure 47. For example, without considering inflow and SPI, reservoir storage was < 100 percent full 90 percent of the time (i.e., the reservoir was full ten percent of the time), meaning that if water right curtailments were triggered based on storage alone, when the reservoir drops below conservation pool, those curtailments would occur 90 percent of the time based off the period of record. However, if curtailments were triggered based on all three indicators (storage, inflow, and SPI), then curtailment frequency would never exceed 44 percent, 38 percent, 33 percent, and 32 percent depending on the inflow-SPI threshold selected (Table 48; **Error! Reference source not found.**). W hen Lugert-Altus Reservoir storage was between 10 percent and 100 percent full, inflow and PDSI had a measurable impact on the frequency of water right curtailments. Similar results were observed when the ten reservoir storage thresholds were combined with the four inflow-SPI thresholds (Table 48; Figure 47).

Table 48. Occurrence frequency of a range of reservoir storage thresholds alone and when combined with four inflow-SPI thresholds over the period of record, 1926-2016.

		Occurrence Frequency (Percentile)				
		Reservoir Storage Alone	Reservoir Storage Combined with Inflow-SPI			
Inflow		-	≤ 110,000	≤ 101,500	≤ 89,100	≤ 79,100
SPI		-	≤ -0.23	≤ -0.12	≤ -0.35	≤ -0.01
Reservoir Storage Thresholds						
Percent of Conservation Pool	Acre-Feet					
< 100%	106,960	90th	44th	38th	33rd	32nd
≤ 90%	96,000	85th	43rd	38th	33rd	32nd
≤ 80%	86,000	82nd	42nd	37th	32nd	31st
≤ 70%	75,000	76th	41st	36th	32nd	31st
≤ 60%	64,000	68th	38th	34th	31st	30th
≤ 50%	53,000	59th	33rd	30th	27th	27th
≤ 40%	43,000	46th	26th	25th	22nd	22nd
≤ 30%	32,000	31st	20th	19th	18th	18th
≤ 20%	21,000	16th	12th	12th	11th	12th
≤ 10%	11,000	6th	6th	6th	6th	6th

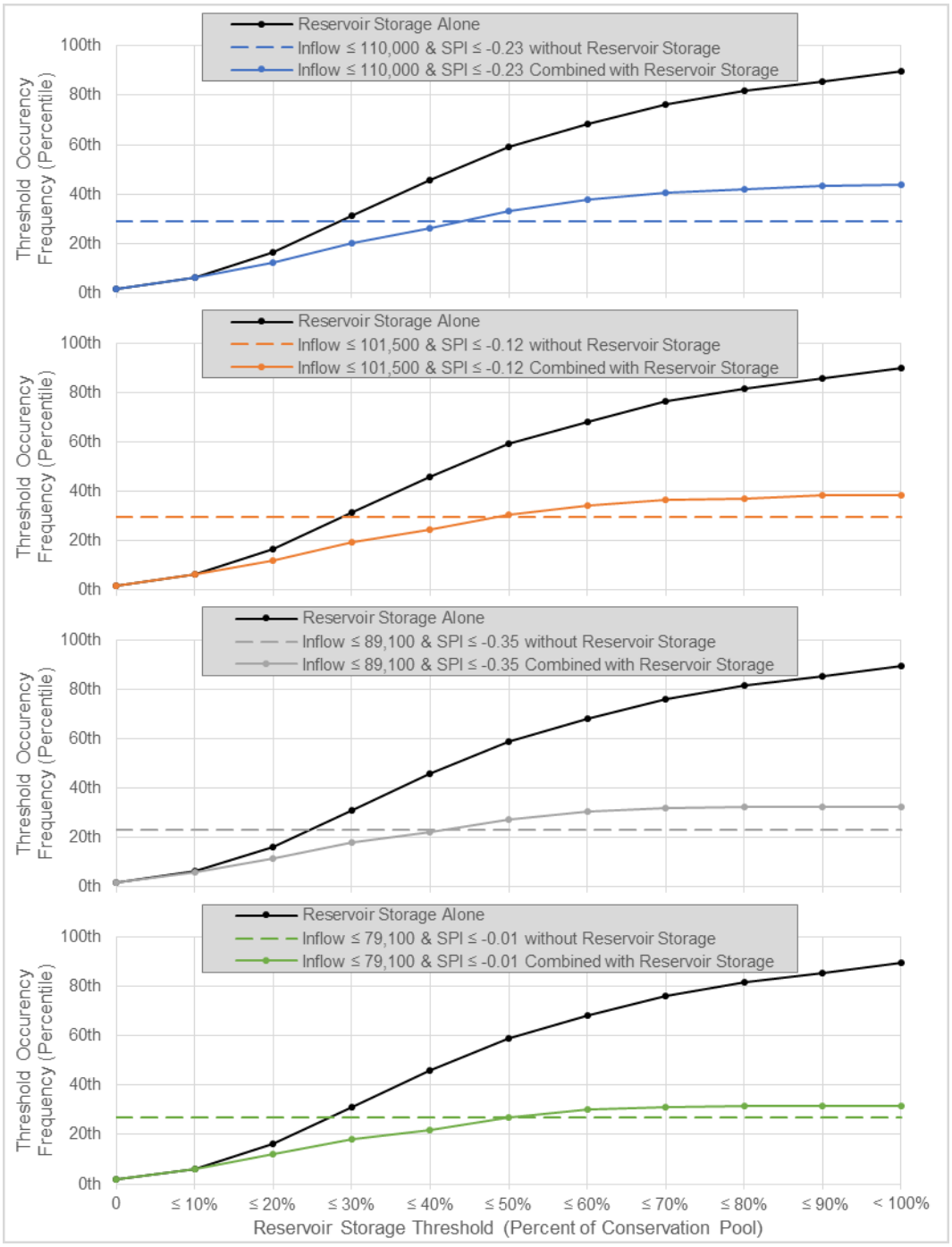

Figure 47. Occurrence frequency of a range of reservoir storage and inflow-SPI thresholds alone and in combination over the period of record, 1926-2016.

Curtailment Timing Thresholds

Another consideration in formulating the range of Hydrologic Threshold Alternatives was "*timing*". The results presented thus far reflect the predictive performance of thresholds that have occurred for *all* months throughout the observed period of record. Timing may be an important factor to consider depending on the water management action. For example, farmers assess conditions and make purchases/decisions well in advance and throughout the irrigation season (May through September). This could be taken into consideration in the development of a management framework to manage water rights in the basin. For this reason, inflow-SPI thresholds were confined to individual months to test how this affected predictive performance. In effect, instead of establishing a curtailment threshold defined by an inflow $\leq x$ acre-ft, SPI $\leq y$, and reservoir storage $\leq z$ percent full (regardless of the time of year), curtailments could be initiated only when the inflow, SPI, and reservoir storage conditions were met during the month of "n" for example - *September*. The results of individual months can then be compared with results obtained in Part V to quantify the extent to which individual months may offer an advantage in terms of accurately predicting the onset/occurrence of drought and/or avoiding false positive drought predictions. The results not only helped further formulate the Hydrologic Threshold Alternatives, but they could inform the degree of flexibility that could potentially be integrated into whatever framework may be put in place that affects water management actions in the basin without sacrificing the assumed benefits gained by implementing those actions.

Curtailment Frequency

First, the analysis evaluated the extent to which initiating a water right curtailment event in any given month affected the frequency of overall curtailments over the period of record. For example, looking at September and returning to Table 47, the threshold, inflow $\leq$ 110,000 acre-ft and SPI $\leq$ -0.23

reached 47 percent of all Septembers. If September was selected as the month a curtailment event was *initiated*, then the proceeding months may or may not result in continued action depending on whether the threshold continued to be met. In fact, if curtailments were initiated in September, taking into consideration the duration of the action based on the length of time the threshold continued to be met, then curtailments would actually have occurred 40 percent of the time over the entire period of record (Table 49). Similarly, if curtailments were initiated in April (for example) for the same threshold, then curtailments would have occurred 34 percent of the time over the period of record (Table 49). The full range of water management action percentages that resulted when initiating curtailments within one particular month of the year versus any month of the year are presented in Table 49 for the inflow-SPI thresholds. A visual representation of when curtailments would be initiated and the frequency of those curtailments for each of the proposed inflow-SPI thresholds is provided in Figure 48-Figure 51. These results showed that initiating curtailments between January and June resulted in slightly lower curtailment frequencies than initiating actions between July and December. This was because the onset of drought more often occurred between July and December, thus signaling the potential benefits of initiating action in the latter part of the year. The impacts of curtailment initiation on the percentage of monthly curtailment throughout the year is presented in Appendix Table 163 through Table 166. The impacts of curtailment initiation on the number and duration of curtailment events are discussed next.

Table 49. Percent of all months that water right curtailments would occur over the period of record when initiating curtailments in one particular month of the year versus in any month of the year.

Curtailment Initiation	Inflow-SPI Threshold Combinations			
	Inflow ≤ 110,000 & SPI ≤ -0.23	Inflow ≤ 101,500 & SPI ≤ -0.12	Inflow ≤ 89,100 & SPI ≤ -0.35	Inflow ≤ 79,100 & SPI ≤ -0.01
	Percent of all Months			
Any Month	44	38	33	32
January Only	36	30	25	23
February Only	35	28	24	22
March Only	34	27	24	21
April Only	34	28	24	21
May Only	36	30	24	22
June Only	37	32	23	23
July Only	37	31	23	24
Aug Only	38	32	24	26
Sep Only	40	33	25	25
Oct Only	39	33	26	26
Nov Only	37	32	26	25
Dec Only	36	31	26	25

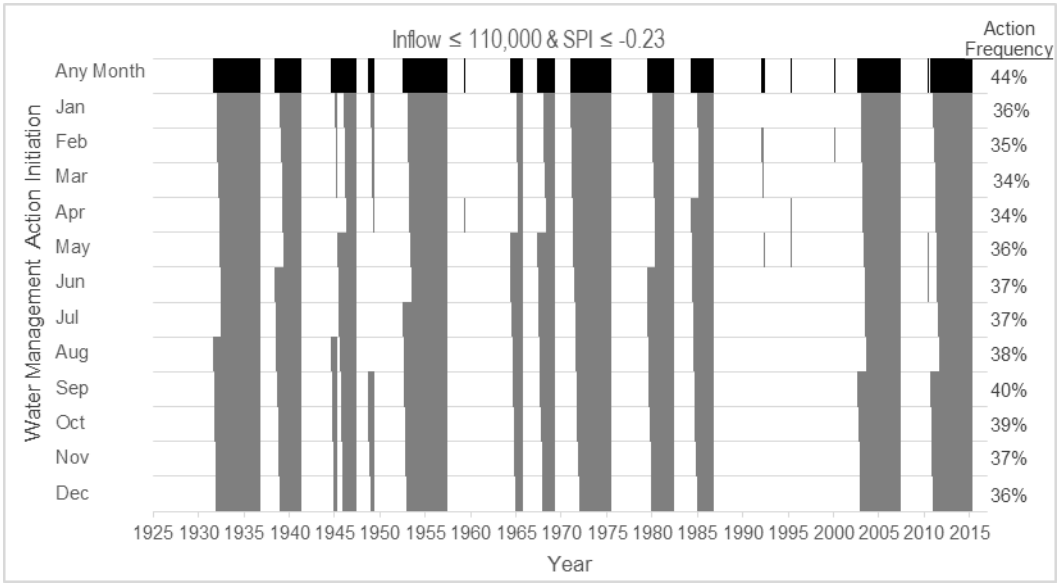

Figure 48. Curtailment initiation and frequency over the period of record when Inflow ≤ 110,000 acre-ft and SPI ≤ -0.23 on any given month out of the year versus only in one particular month.

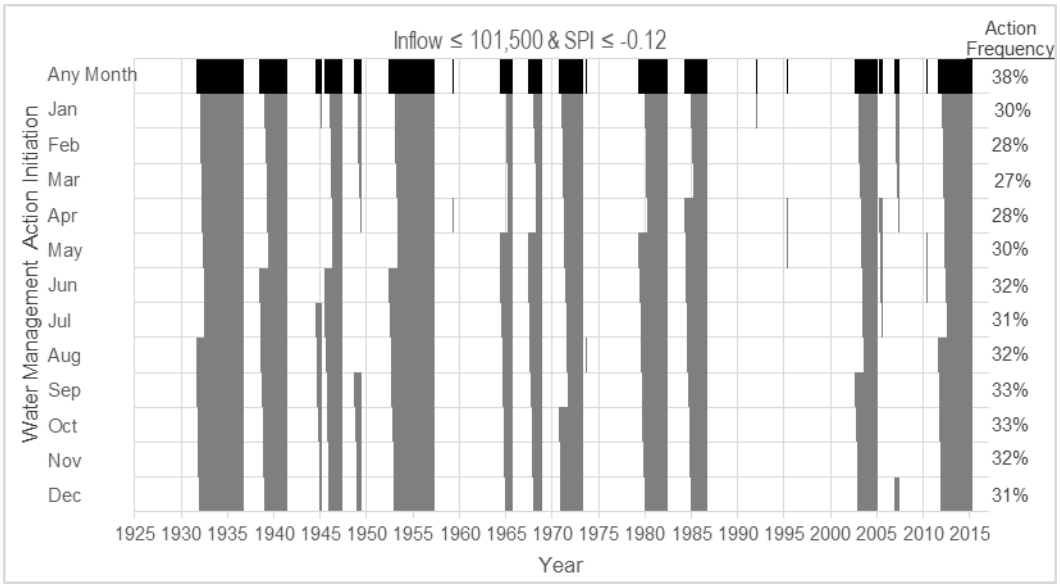

Figure 49. Curtailment initiation and frequency over the period of record when Inflow ≤ 101,500 acre-ft and SPI ≤ -0.12 on any given month out of the year versus only in one particular month.

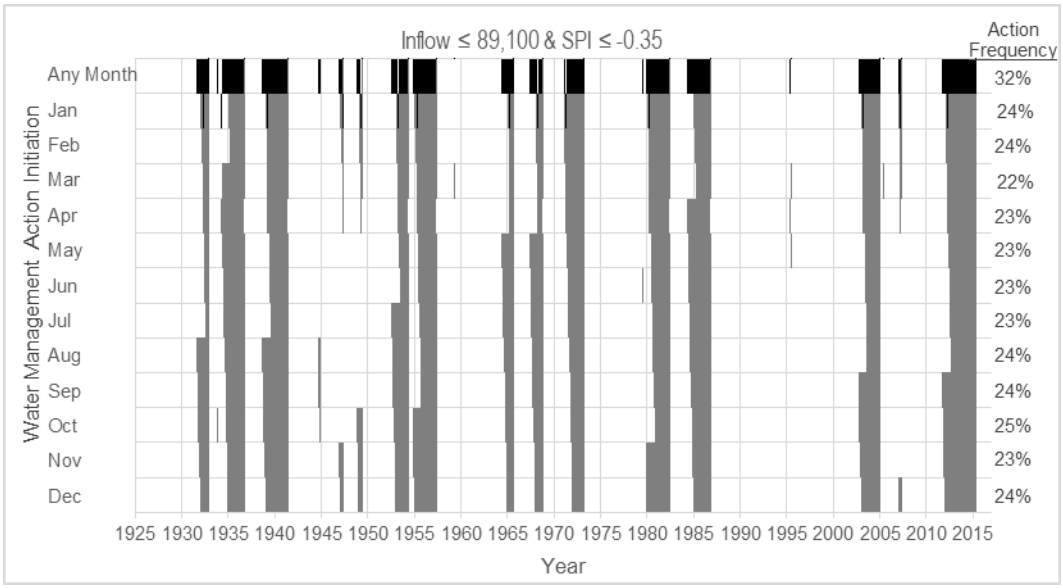

Figure 50. Curtailment initiation and frequency over the period of record when Inflow ≤ 89,100 acre-ft and SPI ≤ -0.35 on any given month out of the year versus only in one particular month.

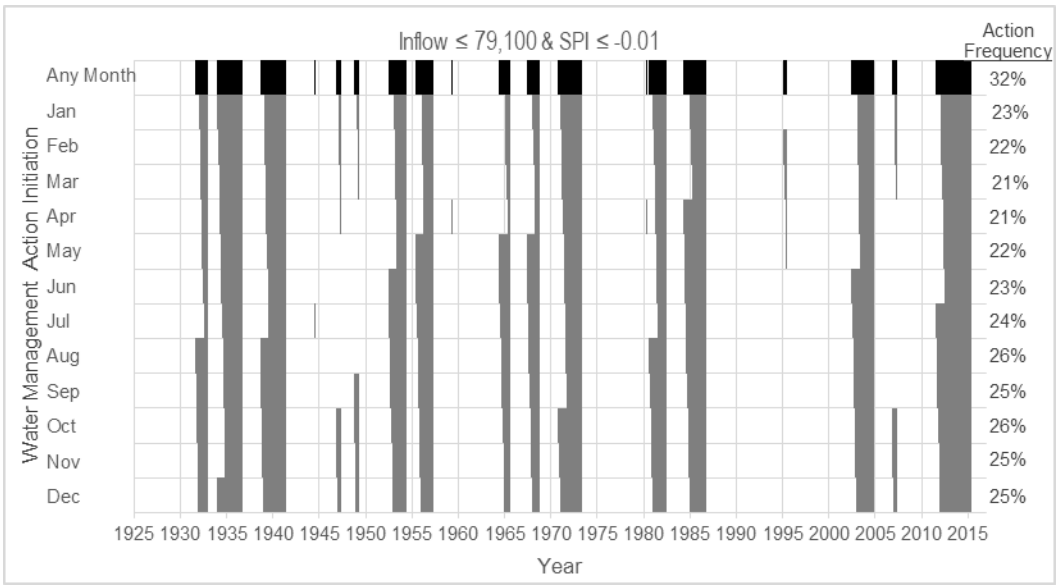

Figure 51. Curtailment initiation and frequency over the period of record when Inflow ≤ 79,100 acre-ft and SPI ≤ -0.01 on any given month out of the year versus only in one particular month.

Curtailment Duration

In the previous section, the discussion centered on the impacts of curtailment timing on the frequency of curtailments in terms of the percent of months over the period of record that curtailments would occur. Next, the analysis considered the extent to which curtailment timing affected the number of discrete events and the duration of those events for each of the four thresholds (Table 50 through Table 53). Overall, the number and duration of curtailments decreased when curtailment initiation was restricted to an individual month versus initiating in any month of the year. The highest inflow-SPI threshold, inflow ≤ 110,000 & SPI ≤ -0.23, resulted in curtailments that were longer in duration relative to the lowest threshold, inflow ≤ 79,100 & SPI ≤ -0.01, but were not more frequent whether curtailment was initiated in any month or an individual month. The key issue of how these curtailments impact water availability was not considered here and should be the subject of a separate future effort.

Table 50. Number and duration of curtailment events over the period of record when initiating curtailments in any given month out of the year versus only in one particular month for the threshold, Inflow ≤ 110,000 acre-ft and SPI ≤ -0.23.

Water Management Action Initiation	Inflow ≤ 110,000 & SPI ≤ -0.23					
	Number and Duration of Events					Maximum Action Duration (months)
	1 to 6 months	7 to 12 months	13 to 24 months	Longer than 24 months	Total	
Any Month	6	2	2	9	19	62
Jan Only	2	1	3	7	13	57
Feb Only	4	1	3	7	15	56
Mar Only	3	1	3	7	14	55
Apr Only	3	2	1	8	14	54
May Only	3	0	2	9	14	53
Jun Only	1	0	3	8	12	52
Jul Only	0	0	3	8	11	58
Aug Only	0	1	3	8	12	62
Sep Only	0	2	3	8	13	61
Oct Only	0	2	3	8	13	60
Nov Only	1	2	3	7	13	59
Dec Only	2	1	3	7	13	58

Table 51. Number and duration of curtailment events over the period of record when initiating curtailments in any given month out of the year versus only in one particular month for the threshold, Inflow ≤ 101,500 acre-ft and SPI ≤ -0.12.

Water Management Action Initiation	Inflow ≤ 101,500 & SPI ≤ -0.12					
	Number of Curtailment Events					Maximum Action Duration (months)
	1 to 6 months	6 to 12 months	12 to 24 months	Longer than 24 months	Total	
Any Month	7	2	3	8	20	61
Jan Only	4	2	2	7	15	56
Feb Only	2	2	2	7	13	55
Mar Only	2	2	3	6	13	54
Apr Only	5	2	2	7	16	53
May Only	3	0	5	6	14	52
Jun Only	2	0	5	6	13	59
Jul Only	1	1	5	6	13	58
Aug Only	1	1	5	6	13	61
Sep Only	1	1	4	7	13	60
Oct Only	1	1	3	8	13	59
Nov Only	1	2	3	7	13	58
Dec Only	3	2	2	7	14	57

Table 52. Number and duration of curtailment events over the period of record when initiating curtailments in any given month out of the year versus only in one particular month for the threshold, Inflow ≤ 89,100 acre-ft and SPI ≤ -0.35.

Water Management Action Initiation	Inflow ≤ 89,100 & SPI ≤ -0.35					
	Number of Curtailment Events					Maximum Action Duration (months)
	1 to 6 months	6 to 12 months	12 to 24 months	Longer than 24 months	Total	
Any Month	7	2	4	8	21	44
Jan Only	3	3	3	6	15	40
Feb Only	3	3	4	5	15	39
Mar Only	3	3	3	6	15	38
Apr Only	7	2	2	7	18	37
May Only	1	1	5	6	13	36
Jun Only	1	2	6	4	13	35
Jul Only	1	0	8	3	12	34
Aug Only	1	0	8	4	13	33
Sep Only	1	0	7	5	13	44
Oct Only	2	2	6	5	15	43
Nov Only	0	4	5	5	14	42
Dec Only	3	2	5	5	15	41

Table 53. Number and duration of curtailment events over the period of record when initiating curtailments in any given month out of the year versus only in one particular month for the threshold, Inflow ≤ 79,100 acre-ft and SPI ≤ -0.01.

Water Management Action Initiation	Inflow ≤ 79,100 & SPI ≤ -0.01					
	Number of Curtailment Events					Maximum Action Duration (months)
	1 to 6 months	6 to 12 months	12 to 24 months	Longer than 24 months	Total	
Any Month	4	3	6	6	19	46
Jan Only	3	3	5	4	15	40
Feb Only	5	2	5	4	16	39
Mar Only	5	2	5	4	16	38
Apr Only	5	2	4	5	16	37
May Only	1	1	7	4	13	36
Jun Only	0	2	6	4	12	35
Jul Only	2	1	6	4	13	46
Aug Only	0	1	6	5	12	45
Sep Only	0	2	6	5	13	44
Oct Only	0	4	7	4	15	43
Nov Only	2	3	6	4	15	42
Dec Only	3	2	6	4	15	41

Table 54. Maximum duration of curtailment events over the period of record for all eight threshold combinations when initiating curtailments in any given month out of the year versus only in one particular month.

Water Management Action Initiation	Maximum Duration of Event (months)			
	Inflow ≤ 110,000 & SPI ≤ -0.23	Inflow ≤ 101,500 & SPI ≤ -0.12	Inflow ≤ 89,100 & SPI ≤ -0.35	Inflow ≤ 79,100 & SPI ≤ -0.01
Any Month	62	61	44	46
Jan Only	57	56	40	40
Feb Only	56	55	39	39
Mar Only	55	54	38	38
Apr Only	54	53	37	37
May Only	53	52	36	36
Jun Only	52	59	35	35
Jul Only	58	58	34	46
Aug Only	62	61	33	45
Sep Only	61	60	44	44
Oct Only	60	59	43	43
Nov Only	59	58	42	42
Dec Only	58	57	41	41

Threshold Timing Performance

Next, each month was examined to assess the extent to which initiating a curtailment in that month affected each threshold's performance at predicting historical, observed droughts. First, MSE scores were compared for two timing conditions under all 11 drought scenarios for inflow-SPI: (1) "Baseline" initiation: conditions were at or below the thresholds during any month of the year; and (2) "Individual Month" initiation: conditions were at or below the thresholds during specific months. Recall that a lower MSE score signified better performance. Across all four inflow-SPI threshold combinations, no individual months resulted in lower MSEs relative to the baseline (Table 55).

MSE scores also were averaged for each month to facilitate interpretation of results. Results showed that for inflow-SPI, average MSE scores for a given month relative to the baseline also increased across all threshold combinations and drought scenarios, although the months of August, September, and October showed a smaller increase in MSE scores relative to other months across all four inflow-SPI thresholds (Table 55**Error! Reference source not found.**).

Overall, the MSE data showed that restricting curtailment initiation to any particular month resulted in no improvement in threshold predictive performance of inflow-SPI compared to initiating a curtailment any month.

Table 55. Mean Squared Error under 11 drought scenarios when inflow-SPI thresholds were met during any month of the year (Baseline) or only during individual months.

Drought Scenario	Baseline (Any Month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	MSE for Threshold: Inflow ≤ 110,000 acre-ft and SPI ≤ -0.23												
		MSE Score (Percent Change from Baseline)											
D1	0.28	0.31 (11)	0.31 (12)	0.32 (14)	0.32 (13)	0.31 (11)	0.31 (10)	0.31 (10)	0.31 (9)	0.3 (6)	0.3 (8)	0.31 (9)	0.31 (11)
D3	0.28	0.34 (20)	0.35 (22)	0.36 (26)	0.36 (26)	0.34 (20)	0.33 (17)	0.33 (17)	0.32 (13)	0.31 (9)	0.32 (12)	0.33 (16)	0.34 (19)
D4	0.28	0.32 (13)	0.32 (14)	0.33 (16)	0.33 (16)	0.32 (13)	0.32 (13)	0.32 (13)	0.32 (11)	0.3 (7)	0.31 (9)	0.31 (11)	0.32 (13)
D6	0.28	0.31 (13)	0.32 (14)	0.32 (17)	0.32 (17)	0.31 (12)	0.31 (12)	0.31 (12)	0.3 (10)	0.3 (7)	0.3 (9)	0.31 (11)	0.31 (12)
D7	0.28	0.32 (14)	0.32 (15)	0.33 (18)	0.33 (18)	0.31 (11)	0.31 (10)	0.31 (11)	0.31 (10)	0.3 (8)	0.31 (10)	0.31 (12)	0.32 (14)
D8	0.28	0.33 (15)	0.33 (17)	0.34 (19)	0.34 (19)	0.32 (12)	0.32 (11)	0.32 (12)	0.31 (11)	0.31 (8)	0.31 (10)	0.32 (13)	0.33 (15)
D9	0.28	0.33 (16)	0.33 (17)	0.34 (19)	0.34 (20)	0.32 (12)	0.32 (11)	0.32 (12)	0.31 (11)	0.31 (8)	0.31 (11)	0.32 (13)	0.33 (15)
D10	0.29	0.33 (17)	0.34 (18)	0.35 (21)	0.35 (22)	0.32 (13)	0.32 (12)	0.32 (13)	0.32 (12)	0.31 (9)	0.32 (12)	0.33 (14)	0.33 (16)
D11	0.28	0.33 (17)	0.33 (18)	0.34 (21)	0.34 (22)	0.32 (13)	0.32 (13)	0.32 (14)	0.32 (12)	0.31 (9)	0.31 (11)	0.32 (14)	0.33 (16)
D12	0.28	0.33 (17)	0.33 (19)	0.34 (22)	0.34 (24)	0.32 (16)	0.32 (13)	0.32 (15)	0.31 (13)	0.3 (8)	0.31 (11)	0.32 (13)	0.32 (16)
D13	0.28	0.32 (16)	0.33 (18)	0.34 (22)	0.34 (23)	0.32 (15)	0.31 (13)	0.32 (15)	0.31 (13)	0.3 (8)	0.31 (10)	0.31 (13)	0.32 (15)
Average	0.28	0.28 (15)	0.28 (17)	0.28 (20)	0.28 (20)	0.28 (14)	0.28 (12)	0.28 (13)	0.28 (11)	0.28 (8)	0.28 (10)	0.28 (13)	0.28 (15)
	MSE for Threshold: Inflow ≤ 101,500 acre-ft and SPI ≤ -0.12												
Drought Scenario	Baseline (Any Month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		MSE Score (Percent Change from Baseline)											
D1	0.31	0.34 (9)	0.34 (11)	0.35 (13)	0.35 (12)	0.34 (11)	0.34 (9)	0.34 (10)	0.33 (9)	0.33 (7)	0.33 (7)	0.33 (9)	0.33 (8)
D3	0.31	0.37 (21)	0.38 (24)	0.39 (26)	0.39 (25)	0.38 (21)	0.35 (14)	0.35 (14)	0.35 (12)	0.34 (11)	0.35 (11)	0.36 (15)	0.36 (17)
D4	0.31	0.34 (10)	0.34 (12)	0.35 (13)	0.34 (12)	0.34 (11)	0.34 (9)	0.34 (10)	0.34 (9)	0.33 (7)	0.33 (7)	0.33 (8)	0.34 (9)
D6	0.31	0.35 (14)	0.36 (17)	0.37 (18)	0.37 (18)	0.36 (17)	0.35 (12)	0.35 (12)	0.34 (11)	0.34 (9)	0.34 (10)	0.35 (12)	0.35 (12)
D7	0.31	0.34 (12)	0.35 (14)	0.35 (15)	0.35 (15)	0.33 (8)	0.33 (7)	0.33 (8)	0.33 (8)	0.33 (8)	0.33 (8)	0.34 (10)	0.34 (11)
D8	0.31	0.35 (13)	0.36 (15)	0.37 (17)	0.36 (17)	0.34 (10)	0.34 (8)	0.34 (9)	0.34 (9)	0.34 (8)	0.34 (9)	0.35 (11)	0.35 (12)
D9	0.31	0.36 (14)	0.36 (16)	0.37 (18)	0.37 (17)	0.34 (10)	0.34 (9)	0.34 (10)	0.34 (9)	0.34 (9)	0.34 (9)	0.35 (11)	0.35 (13)
D10	0.32	0.37 (16)	0.38 (19)	0.38 (21)	0.38 (20)	0.36 (12)	0.35 (10)	0.36 (12)	0.35 (11)	0.35 (11)	0.35 (11)	0.36 (13)	0.36 (15)
D11	0.31	0.37 (17)	0.37 (19)	0.38 (21)	0.38 (20)	0.35 (13)	0.35 (11)	0.35 (12)	0.35 (11)	0.35 (11)	0.35 (11)	0.35 (14)	0.36 (15)
D12	0.31	0.37 (18)	0.37 (21)	0.38 (24)	0.38 (23)	0.35 (13)	0.35 (12)	0.35 (12)	0.35 (13)	0.34 (11)	0.35 (12)	0.35 (15)	0.36 (16)
D13	0.32	0.38 (20)	0.39 (23)	0.4 (26)	0.4 (25)	0.36 (15)	0.36 (13)	0.36 (14)	0.36 (14)	0.35 (12)	0.36 (13)	0.36 (16)	0.37 (17)
Average	0.31	0.31 (15)	0.31 (17)	0.31 (19)	0.31 (19)	0.31 (13)	0.31 (11)	0.31 (11)	0.31 (10)	0.31 (9)	0.31 (10)	0.31 (12)	0.31 (13)

Table 55. Continued. Mean Squared Error under 11 drought scenarios when inflow-SPI thresholds were met during any month of the year (Baseline) or only during individual months.

Drought Scenario	Baseline (Any Month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	MSE for Threshold: Inflow ≤ 89,100 acre-ft and SPI ≤ -0.35												
		MSE Score (Percent Change from Baseline)											
D1	0.33	0.35 (5)	0.35 (7)	0.36 (8)	0.36 (9)	0.36 (9)	0.36 (10)	0.36 (10)	0.36 (9)	0.36 (9)	0.35 (7)	0.35 (6)	0.35 (5)
D3	0.35	0.41 (15)	0.41 (17)	0.42 (18)	0.42 (18)	0.42 (18)	0.42 (19)	0.42 (18)	0.4 (12)	0.39 (11)	0.39 (10)	0.39 (11)	0.4 (13)
D4	0.33	0.35 (6)	0.35 (7)	0.35 (8)	0.35 (7)	0.35 (8)	0.36 (8)	0.36 (8)	0.35 (8)	0.35 (7)	0.35 (5)	0.35 (5)	0.35 (6)
D6	0.35	0.38 (9)	0.38 (11)	0.39 (12)	0.39 (12)	0.39 (13)	0.4 (14)	0.4 (15)	0.39 (13)	0.39 (12)	0.38 (10)	0.37 (9)	0.37 (8)
D7	0.33	0.36 (9)	0.36 (10)	0.36 (11)	0.36 (11)	0.34 (5)	0.35 (6)	0.35 (6)	0.35 (7)	0.35 (7)	0.35 (7)	0.35 (7)	0.35 (8)
D8	0.34	0.37 (10)	0.37 (11)	0.38 (12)	0.38 (12)	0.36 (6)	0.36 (7)	0.36 (8)	0.36 (8)	0.36 (8)	0.36 (8)	0.36 (8)	0.37 (9)
D9	0.35	0.39 (14)	0.4 (16)	0.39 (14)	0.4 (14)	0.38 (8)	0.38 (10)	0.38 (11)	0.38 (11)	0.38 (11)	0.38 (10)	0.39 (11)	0.39 (13)
D10	0.36	0.41 (15)	0.42 (18)	0.41 (15)	0.41 (16)	0.4 (11)	0.4 (12)	0.41 (13)	0.4 (13)	0.4 (13)	0.4 (12)	0.4 (13)	0.41 (14)
D11	0.35	0.41 (16)	0.42 (18)	0.41 (16)	0.41 (16)	0.39 (11)	0.4 (13)	0.4 (14)	0.4 (13)	0.4 (13)	0.4 (13)	0.4 (13)	0.41 (15)
D12	0.35	0.41 (16)	0.42 (19)	0.41 (17)	0.42 (18)	0.4 (14)	0.41 (16)	0.42 (19)	0.41 (17)	0.41 (16)	0.41 (15)	0.4 (13)	0.41 (15)
D13	0.36	0.43 (17)	0.44 (21)	0.44 (20)	0.44 (21)	0.42 (17)	0.43 (19)	0.44 (22)	0.44 (20)	0.43 (18)	0.42 (17)	0.41 (14)	0.42 (16)
Average	0.34	0.34 (12)	0.34 (14)	0.34 (14)	0.34 (14)	0.34 (11)	0.34 (12)	0.34 (13)	0.34 (12)	0.34 (11)	0.34 (10)	0.34 (10)	0.34 (11)
	MSE for Threshold: Inflow ≤ 79,100 acre-ft and SPI ≤ -0.01												
Drought Scenario	Baseline (Any Month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		MSE Score (Percent Change from Baseline)											
D1	0.33	0.36 (6)	0.36 (7)	0.36 (9)	0.37 (10)	0.37 (9)	0.36 (9)	0.36 (9)	0.36 (8)	0.36 (7)	0.35 (5)	0.35 (5)	0.35 (6)
D3	0.36	0.42 (17)	0.42 (17)	0.43 (20)	0.43 (21)	0.42 (19)	0.41 (15)	0.41 (15)	0.39 (10)	0.39 (10)	0.39 (10)	0.4 (12)	0.4 (14)
D4	0.33	0.35 (7)	0.35 (6)	0.36 (7)	0.36 (8)	0.36 (8)	0.36 (8)	0.36 (8)	0.35 (7)	0.35 (5)	0.35 (5)	0.35 (6)	0.35 (6)
D6	0.35	0.39 (11)	0.39 (11)	0.4 (13)	0.4 (14)	0.4 (14)	0.4 (14)	0.39 (13)	0.39 (12)	0.38 (10)	0.37 (6)	0.38 (8)	0.38 (9)
D7	0.33	0.36 (9)	0.36 (10)	0.37 (12)	0.37 (12)	0.35 (5)	0.35 (5)	0.35 (6)	0.35 (5)	0.35 (6)	0.35 (6)	0.35 (7)	0.36 (8)
D8	0.34	0.38 (10)	0.38 (11)	0.38 (13)	0.39 (13)	0.36 (6)	0.36 (6)	0.36 (7)	0.36 (6)	0.36 (7)	0.36 (7)	0.37 (8)	0.37 (9)
D9	0.35	0.39 (12)	0.4 (13)	0.4 (15)	0.41 (16)	0.38 (9)	0.38 (9)	0.38 (10)	0.38 (9)	0.39 (10)	0.38 (10)	0.39 (12)	0.38 (10)
D10	0.36	0.41 (13)	0.42 (15)	0.43 (17)	0.43 (18)	0.4 (11)	0.4 (11)	0.41 (11)	0.4 (10)	0.41 (11)	0.4 (11)	0.41 (13)	0.4 (11)
D11	0.36	0.41 (13)	0.42 (15)	0.43 (17)	0.43 (18)	0.4 (11)	0.4 (11)	0.41 (11)	0.4 (10)	0.41 (11)	0.4 (11)	0.41 (13)	0.41 (11)
D12	0.37	0.43 (16)	0.43 (18)	0.45 (21)	0.45 (22)	0.42 (13)	0.41 (12)	0.42 (13)	0.41 (12)	0.42 (13)	0.41 (12)	0.42 (15)	0.42 (13)
D13	0.38	0.45 (17)	0.46 (20)	0.47 (24)	0.48 (26)	0.44 (16)	0.44 (15)	0.44 (16)	0.43 (14)	0.44 (15)	0.43 (13)	0.44 (15)	0.43 (14)
Average	0.35	0.35 (12)	0.35 (13)	0.35 (15)	0.35 (16)	0.35 (11)	0.35 (10)	0.35 (11)	0.35 (9)	0.35 (10)	0.35 (9)	0.35 (11)	0.35 (10)

Next, POD and SR scores were compared between individual months versus baseline conditions. Recall that a higher POD and SR score signifies better performance. Relative to the baseline, in many cases, individual month POD increased while individual month SR decreased (and vice versa); therefore, to facilitate interpretation of results, POD and SR were added together and a net change in combined POD-SR was tabulated for each month relative to the baseline. Months with positive net changes relative to baseline are shaded in green (if applicable), and months with negative net changes relative to the baseline are not shaded in green.

For inflow-SPI, predictive performance was generally reduced across all thresholds for all individual months. The maximum improvement in threshold predictive performance was one percent (January and May), and the maximum reduction in predictive performance was 29 percent [(May) (Table 56)].

Table 56. Probability of Detection and Success Ratio under 11 drought scenarios when inflow-SPI thresholds were met during any month of the year (Baseline) or only during individual months. Months with positive net changes relative to baseline are shaded in green, and months with negative net changes relative to the baseline are not shaded in green.

Drought Scenario	POD / SR for Threshold: Inflow ≤ 110,000 & SPI ≤ -0.23 (Net Change in POD and SR)												
	Baseline (Any Month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
D1	64 / 84	51 / 81 (-15)	49 / 81 (-17)	47 / 81 (-19)	47 / 81 (-19)	51 / 82 (-14)	53 / 83 (-11)	53 / 83 (-11)	55 / 83 (-10)	57 / 83 (-7)	55 / 82 (-10)	53 / 82 (-12)	51 / 81 (-15)
D3	70 / 76	63 / 83 (1)	61 / 83 (-1)	59 / 84 (-2)	60 / 84 (-1)	63 / 83 (1)	63 / 81 (-1)	63 / 81 (-2)	62 / 77 (-6)	65 / 78 (-2)	64 / 79 (-2)	63 / 80 (-2)	62 / 81 (-2)
D4	65 / 92	54 / 93 (-10)	52 / 92 (-12)	50 / 92 (-14)	50 / 92 (-14)	54 / 93 (-9)	56 / 94 (-6)	56 / 94 (-6)	57 / 94 (-5)	59 / 92 (-5)	57 / 92 (-7)	56 / 92 (-8)	54 / 92 (-10)
D6	62 / 77	52 / 78 (-9)	50 / 78 (-11)	49 / 78 (-13)	49 / 78 (-12)	52 / 78 (-10)	54 / 79 (-7)	54 / 79 (-6)	54 / 78 (-7)	57 / 77 (-5)	55 / 78 (-7)	53 / 78 (-8)	52 / 78 (-10)
D7	63 / 91	54 / 94 (-6)	53 / 94 (-8)	51 / 95 (-9)	51 / 95 (-8)	52 / 90 (-13)	54 / 91 (-10)	54 / 91 (-9)	56 / 92 (-7)	59 / 93 (-3)	57 / 93 (-4)	56 / 93 (-6)	54 / 94 (-7)
D8	66 / 90	56 / 93 (-7)	54 / 93 (-8)	53 / 94 (-10)	53 / 94 (-9)	53 / 89 (-14)	55 / 90 (-11)	56 / 91 (-10)	57 / 91 (-7)	61 / 92 (-3)	59 / 92 (-5)	57 / 93 (-6)	56 / 93 (-7)
D9	68 / 80	57 / 81 (-9)	55 / 81 (-12)	53 / 81 (-14)	54 / 81 (-13)	54 / 76 (-18)	56 / 78 (-13)	57 / 79 (-12)	59 / 80 (-9)	63 / 81 (-4)	61 / 81 (-6)	59 / 81 (-8)	57 / 81 (-10)
D10	72 / 77	60 / 79 (-10)	58 / 78 (-12)	56 / 78 (-14)	57 / 79 (-13)	57 / 74 (-18)	59 / 75 (-14)	60 / 77 (-12)	62 / 78 (-9)	66 / 79 (-3)	64 / 79 (-6)	62 / 79 (-8)	60 / 79 (-10)
D11	71 / 70	59 / 71 (-10)	57 / 71 (-12)	55 / 70 (-15)	56 / 71 (-13)	56 / 67 (-18)	59 / 68 (-13)	60 / 70 (-10)	61 / 70 (-10)	65 / 71 (-4)	63 / 71 (-6)	61 / 71 (-9)	59 / 70 (-11)
D12	69 / 59	59 / 62 (-8)	57 / 61 (-10)	55 / 62 (-11)	57 / 64 (-7)	57 / 60 (-10)	58 / 60 (-10)	60 / 61 (-6)	62 / 62 (-4)	64 / 61 (-4)	62 / 61 (-6)	60 / 60 (-8)	58 / 60 (-10)
D13	70 / 50	58 / 51 (-12)	56 / 50 (-14)	54 / 51 (-16)	57 / 53 (-11)	57 / 50 (-13)	58 / 50 (-13)	61 / 52 (-8)	63 / 52 (-6)	64 / 51 (-6)	62 / 50 (-9)	59 / 50 (-11)	57 / 49 (-14)
Average	67 / 77	57 / 79 (-9)	55 / 78 (-11)	53 / 79 (-12)	54 / 79 (-11)	55 / 77 (-12)	57 / 77 (-10)	58 / 78 (-8)	59 / 78 (-7)	62 / 78 (-4)	60 / 78 (-6)	58 / 78 (-8)	56 / 78 (-10)

Drought Scenario	POD / SR for Threshold: Inflow ≤ 101,500 & SPI ≤ -0.12 (Net Change in POD and SR)												
	Baseline (Any Month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
D1	57 / 85	42 / 82 (-17)	41 / 82 (-19)	39 / 82 (-20)	40 / 83 (-19)	44 / 84 (-14)	47 / 86 (-9)	46 / 85 (-10)	48 / 85 (-8)	49 / 85 (-8)	49 / 85 (-8)	46 / 84 (-11)	45 / 83 (-14)
D3	59 / 73	51 / 81 (0)	49 / 82 (-2)	47 / 82 (-3)	48 / 82 (-2)	51 / 81 (0)	52 / 77 (-3)	50 / 76 (-6)	51 / 75 (-5)	52 / 75 (-4)	53 / 76 (-3)	52 / 78 (-2)	52 / 80 (0)
D4	56 / 91	44 / 91 (-13)	42 / 91 (-15)	40 / 91 (-17)	40 / 90 (-16)	44 / 92 (-11)	48 / 93 (-7)	47 / 93 (-8)	49 / 93 (-6)	48 / 91 (-8)	48 / 91 (-8)	47 / 91 (-10)	46 / 91 (-11)
D6	58 / 82	46 / 83 (-10)	44 / 84 (-11)	42 / 84 (-13)	43 / 85 (-11)	48 / 87 (-4)	50 / 85 (-4)	48 / 83 (-8)	50 / 84 (-5)	51 / 83 (-6)	51 / 84 (-5)	49 / 84 (-6)	47 / 83 (-9)
D7	56 / 91	44 / 94 (-8)	43 / 94 (-9)	41 / 95 (-11)	42 / 95 (-9)	42 / 89 (-15)	46 / 90 (-10)	45 / 91 (-11)	47 / 92 (-8)	49 / 92 (-6)	49 / 93 (-5)	47 / 93 (-6)	46 / 94 (-7)
D8	58 / 91	46 / 94 (-9)	45 / 94 (-10)	43 / 95 (-11)	44 / 95 (-10)	44 / 89 (-16)	48 / 90 (-11)	47 / 91 (-11)	49 / 92 (-8)	51 / 92 (-6)	51 / 93 (-5)	49 / 93 (-6)	48 / 94 (-7)
D9	59 / 80	46 / 80 (-12)	44 / 80 (-15)	42 / 80 (-17)	43 / 80 (-15)	43 / 75 (-21)	48 / 77 (-14)	47 / 78 (-14)	50 / 79 (-10)	52 / 80 (-7)	52 / 81 (-7)	50 / 81 (-9)	49 / 81 (-10)
D10	63 / 77	50 / 79 (-11)	47 / 79 (-14)	45 / 79 (-16)	46 / 78 (-16)	46 / 73 (-21)	51 / 75 (-14)	51 / 77 (-12)	54 / 78 (-8)	55 / 79 (-5)	56 / 80 (-5)	53 / 80 (-7)	52 / 79 (-8)
D11	61 / 69	48 / 70 (-12)	46 / 70 (-14)	43 / 69 (-17)	44 / 69 (-16)	44 / 64 (-21)	50 / 68 (-13)	49 / 67 (-14)	52 / 70 (-8)	54 / 70 (-6)	54 / 71 (-5)	52 / 71 (-7)	51 / 71 (-9)
D12	61 / 60	48 / 61 (-11)	46 / 61 (-14)	44 / 61 (-16)	45 / 61 (-14)	43 / 55 (-23)	49 / 58 (-13)	48 / 58 (-15)	53 / 62 (-6)	53 / 61 (-6)	54 / 62 (-4)	52 / 62 (-7)	51 / 62 (-8)
D13	67 / 55	52 / 55 (-14)	50 / 55 (-17)	47 / 55 (-20)	49 / 56 (-17)	47 / 50 (-25)	54 / 53 (-15)	53 / 53 (-16)	58 / 56 (-7)	59 / 56 (-7)	60 / 57 (-5)	57 / 56 (-9)	55 / 56 (-11)
Average	59 / 78	47 / 79 (-11)	45 / 79 (-13)	43 / 79 (-15)	44 / 80 (-13)	45 / 76 (-16)	49 / 78 (-10)	48 / 77 (-11)	51 / 79 (-7)	52 / 79 (-6)	52 / 79 (-5)	50 / 79 (-7)	49 / 79 (-9)

Table 56. Continued. Probability of Detection and Success Ratio under six drought scenarios when inflow-SPI thresholds were met during any month of the year (Baseline) or only during individual months. Months with positive net changes relative to baseline are shaded in green, and months with negative net changes relative to the baseline are not shaded in green.

Drought Scenario	POD / SR for Threshold: Inflow ≤ 89,100 & SPI ≤ -0.35 (Net Change in POD and SR)												
	Baseline (Any Month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
D1	47 / 83	35 / 79 (-16)	33 / 79 (-17)	33 / 81 (-16)	33 / 81 (-15)	35 / 82 (-13)	33 / 82 (-15)	33 / 82 (-15)	35 / 83 (-12)	37 / 84 (-9)	37 / 83 (-10)	37 / 81 (-11)	35 / 79 (-15)
D3	54 / 79	44 / 84 (-5)	42 / 84 (-7)	42 / 85 (-6)	42 / 85 (-6)	43 / 85 (-3)	41 / 85 (-6)	40 / 84 (-9)	40 / 78 (-15)	42 / 79 (-12)	43 / 79 (-10)	45 / 81 (-7)	44 / 82 (-7)
D4	47 / 90	36 / 89 (-12)	34 / 89 (-14)	34 / 89 (-14)	34 / 89 (-15)	35 / 90 (-12)	33 / 90 (-14)	33 / 90 (-14)	36 / 91 (-11)	37 / 91 (-9)	37 / 89 (-11)	38 / 89 (-10)	37 / 89 (-11)
D6	51 / 85	40 / 85 (-11)	38 / 86 (-13)	38 / 87 (-12)	38 / 87 (-12)	40 / 89 (-8)	38 / 89 (-10)	38 / 89 (-10)	40 / 88 (-8)	42 / 89 (-5)	42 / 87 (-7)	42 / 86 (-9)	40 / 84 (-12)
D7	47 / 90	38 / 94 (-6)	36 / 94 (-7)	36 / 95 (-7)	36 / 95 (-6)	34 / 87 (-16)	32 / 88 (-17)	32 / 88 (-16)	35 / 90 (-12)	37 / 91 (-9)	38 / 92 (-7)	39 / 93 (-6)	38 / 93 (-6)
D8	49 / 90	39 / 94 (-6)	37 / 94 (-8)	37 / 95 (-7)	37 / 95 (-6)	35 / 87 (-17)	34 / 88 (-18)	34 / 88 (-17)	36 / 90 (-13)	38 / 91 (-10)	40 / 92 (-8)	40 / 93 (-6)	39 / 93 (-7)
D9	52 / 82	42 / 86 (-4)	40 / 87 (-6)	38 / 83 (-12)	39 / 84 (-10)	36 / 77 (-20)	34 / 77 (-22)	35 / 78 (-20)	38 / 80 (-15)	41 / 82 (-10)	42 / 83 (-8)	43 / 85 (-5)	42 / 86 (-5)
D10	55 / 80	46 / 86 (-4)	43 / 86 (-6)	41 / 82 (-12)	41 / 83 (-11)	39 / 77 (-20)	37 / 76 (-22)	38 / 78 (-20)	41 / 80 (-14)	44 / 82 (-9)	46 / 83 (-6)	47 / 85 (-4)	46 / 85 (-5)
D11	54 / 72	44 / 76 (-6)	42 / 76 (-9)	39 / 72 (-15)	40 / 73 (-14)	38 / 67 (-22)	35 / 66 (-25)	36 / 68 (-22)	40 / 70 (-16)	42 / 72 (-12)	44 / 74 (-8)	46 / 75 (-5)	44 / 75 (-7)
D12	55 / 64	44 / 66 (-8)	41 / 66 (-12)	39 / 62 (-17)	40 / 64 (-14)	38 / 60 (-20)	36 / 60 (-22)	38 / 63 (-18)	42 / 65 (-11)	45 / 67 (-7)	45 / 66 (-6)	45 / 65 (-8)	44 / 65 (-10)
D13	60 / 58	48 / 60 (-11)	45 / 60 (-14)	43 / 57 (-18)	45 / 60 (-14)	43 / 55 (-20)	40 / 55 (-23)	43 / 58 (-18)	47 / 61 (-11)	50 / 61 (-7)	51 / 61 (-6)	49 / 59 (-11)	47 / 58 (-13)
Average	52 / 79	41 / 82 (-8)	39 / 82 (-10)	38 / 81 (-12)	39 / 81 (-11)	38 / 78 (-15)	36 / 78 (-18)	36 / 79 (-16)	39 / 80 (-13)	41 / 81 (-9)	42 / 81 (-8)	43 / 81 (-7)	41 / 81 (-9)

Drought Scenario	POD / SR for Threshold: Inflow ≤ 79,100 & SPI ≤ -0.01 (Net Change in POD and SR)												
	Baseline (Any Month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
D1	46 / 84	32 / 80 (-16)	31 / 79 (-17)	29 / 80 (-16)	29 / 82 (-15)	32 / 83 (-13)	34 / 84 (-15)	34 / 84 (-15)	38 / 86 (-12)	37 / 84 (-9)	38 / 82 (-10)	35 / 81 (-11)	35 / 81 (-15)
D3	51 / 77	41 / 83 (-5)	38 / 82 (-7)	36 / 82 (-6)	36 / 83 (-6)	40 / 85 (-3)	40 / 81 (-6)	40 / 82 (-9)	42 / 78 (-15)	41 / 78 (-12)	44 / 80 (-10)	42 / 80 (-7)	42 / 82 (-7)
D4	45 / 89	33 / 89 (-12)	31 / 88 (-14)	29 / 88 (-14)	29 / 88 (-15)	32 / 90 (-12)	34 / 91 (-14)	34 / 91 (-14)	38 / 91 (-11)	36 / 89 (-9)	38 / 89 (-11)	36 / 89 (-10)	36 / 90 (-11)
D6	49 / 85	37 / 86 (-11)	35 / 85 (-13)	33 / 85 (-12)	33 / 87 (-12)	37 / 89 (-8)	39 / 90 (-10)	39 / 89 (-10)	43 / 91 (-8)	41 / 88 (-5)	41 / 84 (-7)	39 / 84 (-9)	39 / 85 (-12)
D7	45 / 91	35 / 94 (-6)	33 / 95 (-7)	31 / 95 (-7)	31 / 96 (-6)	31 / 87 (-16)	33 / 89 (-17)	33 / 89 (-16)	37 / 91 (-12)	37 / 92 (-9)	39 / 93 (-7)	37 / 93 (-6)	37 / 94 (-6)
D8	47 / 91	36 / 94 (-6)	35 / 95 (-8)	33 / 95 (-7)	33 / 96 (-6)	32 / 87 (-17)	34 / 89 (-18)	35 / 89 (-17)	39 / 91 (-13)	38 / 92 (-10)	40 / 93 (-8)	38 / 93 (-6)	38 / 94 (-7)
D9	50 / 81	37 / 81 (-4)	35 / 82 (-6)	33 / 82 (-12)	33 / 83 (-10)	33 / 76 (-20)	36 / 78 (-22)	36 / 79 (-20)	41 / 82 (-15)	41 / 83 (-10)	43 / 85 (-8)	41 / 85 (-5)	39 / 81 (-5)
D10	54 / 81	40 / 81 (-4)	38 / 81 (-6)	36 / 81 (-12)	36 / 82 (-11)	36 / 76 (-20)	39 / 78 (-22)	39 / 79 (-20)	44 / 82 (-14)	44 / 83 (-9)	47 / 84 (-6)	44 / 84 (-4)	42 / 81 (-5)
D11	54 / 74	39 / 73 (-6)	37 / 73 (-9)	35 / 72 (-15)	35 / 73 (-14)	35 / 67 (-22)	38 / 70 (-25)	38 / 71 (-22)	44 / 74 (-16)	44 / 75 (-12)	47 / 77 (-8)	44 / 77 (-5)	42 / 73 (-7)
D12	56 / 67	41 / 67 (-8)	39 / 67 (-12)	36 / 67 (-17)	37 / 69 (-14)	36 / 60 (-20)	38 / 62 (-22)	40 / 64 (-18)	46 / 68 (-11)	45 / 68 (-7)	49 / 71 (-6)	46 / 70 (-8)	44 / 67 (-10)
D13	62 / 62	45 / 60 (-11)	43 / 61 (-14)	40 / 61 (-18)	42 / 64 (-14)	40 / 56 (-20)	43 / 57 (-23)	44 / 59 (-18)	52 / 64 (-11)	51 / 64 (-7)	54 / 64 (-6)	50 / 64 (-11)	48 / 61 (-13)
Average	51 / 80	38 / 81 (-8)	36 / 81 (-10)	34 / 81 (-12)	34 / 82 (-11)	35 / 78 (-15)	37 / 79 (-18)	38 / 80 (-16)	42 / 82 (-13)	41 / 81 (-9)	44 / 82 (-8)	41 / 82 (-7)	40 / 81 (-9)

Conclusions

Results showed that initiating curtailments between January and June resulted in slightly lower curtailment frequencies than initiating actions between July and December. This was because the onset of drought more often occurred between July and December, thus signaling the potential benefits of initiating action in the latter part of the year. Overall, when comparing results across *all* inflow-SPI thresholds and drought scenarios, results showed that constraining thresholds to any particular month would likely *not* have a measurable impact on the accuracy of predicting drought conditions. The overall similarity of predictive performance across timing conditions means that a higher degree of flexibility can be integrated into future curtailment procedures without sacrificing the assumed benefits gained by curtailments. This flexibility should consider the role that water supply risk and uncertainty play in water resources management and incorporate a monitoring and advanced warning process that gives water users sufficient time to plan and prepare ahead of a potential curtailment. Most water users in the basin are farmers, and farmers often make decisions on seed purchase, crop planting, whether or not to apply for crop insurance if applicable, etc.) during the winter prior to the next irrigation season.

REFERENCES

Brier, G. W. (1950). Verification of forecasts expressed in terms of probability. Monthly weather review, 78(1),v 1-3.

U.S. Bureau of Reclamation. (2019). Colorado River Basin Drought Contingency Plan. Retrieved from: https://www.usbr.gov/dcp/finaldocs.html

Chen, Xiao, Ender, Phil, Mitchell, Michael, and Wells, Christine. (2020). Stata Web Books Logistic Regression with Stata. University of California, Los Angeles, Institute for Digital Research & Education, Statistical Consulting. Retrieved from: https://stats.idre.ucla.edu/stata/webbooks/logistic/

Gold, S., White, E., Roeder, W., McAleenan, M., Kabban, C. S., & Ahner, D. (2020). Probabilistic Contingency Tables: An Improvement to Verify Probability Forecasts. *Weather and Forecasting*, 35(2), 609-621.

Hosmer, D. W., and Lemeshow, S. (2000). Applied Logistic Regression, Second Edition. John Wiley & Sons. New York.

Jolliffe, I. T., & Stephenson, D. B. (Eds.). (2012). Forecast verification: a practitioner's guide in atmospheric science. John Wiley & Sons. New York.

Kershen, Drew L. (2021). Legal Review of Water Rights and Adaptation Strategies: Issues, Constraints, and Options, prepared for the United States Bureau of Reclamation. University of Oklahoma Board of Regents. Retrieved from: https://www.usbr.gov/gp/otao/westokbasinstudies_academiclegalreview.pdf

Keyantash, J., and J. J. Dracup, 2002. The Quantification of Drought: An Evaluation of Drought Indices. Bulletin of the American Meteorological Society, pp. 1167-1180.

Lower Republican Natural Resources District & Nebraska Department of Natural Resources. (2016). Integrated Management Plan jointly developed by the Department of Natural Resources and the Lower Republican Natural Resources District. Authors. Retrieved from: https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/water-planning/republican/lower-rep-NRD/20151210_LRNRD_FInal_IMP.PDF

McFadden, D. (1974). Conditional logit analysis of qualitative choice behavior. In P. Zarembka (Ed.), *Frontiers in econometrics* (pp. 104-142). New York: Academic Press.

Methods and formulas for the model summary statistics in Binary Logistic Regression. (2020). 2019 Minitab, LLC. Retrieve from: https://support.minitab.com/en-us/minitab-express/1/

Murphy, A. H., & Winkler, R. L. (1987). A general framework for forecast verification. Monthly weather review, 115(7), 1330-1338.

National Oceania and Atmospheric Administration, Space Weather Prediction Center. (2019). Forecast Verification Glossary. Retrieved from: https://www.swpc.noaa.gov/sites/default/files/images/u30/Forecast%20Verification%20Glossary.pdf

National Drought Mitigation Center (NDMC), the U.S. Department of Agriculture (USDA) and the National Oceanic and Atmospheric Association (NOAA). (2019). U.S. Drought Monitor. Retrieved from: https://droughtmonitor.unl.edu/About.aspx

Oklahoma Water Resources Board. (2019). Water Resources Bulletin. Retrieved from: https://www.owrb.ok.gov/supply/drought/bulletin.php

Palmer, W. C. (1965). Meteorological drought (Vol. 30). US Department of Commerce, Weather Bureau.

Shivers, M.J., and Andrews, W.J. (2013). Hydrologic drought of water year 2011 compared to four major drought periods of the 20th century in

Oklahoma: U.S. Geological Survey Scientific Investigations Report 2013–5018, 52 p., accessed July 5, 2017, at https://pubs.usgs.gov/sir/2013/5018/.

Smith, S.J., Ellis, J.H., Wagner, D.L., and Peterson, S.M. (2017). Hydrogeology and simulated groundwater flow and availability in the North Fork Red River aquifer, southwest Oklahoma, 1980–2013: U.S. Geological Survey Scientific Investigations Report 2017–5098, 107 p., [Also available at https://doi.org/10.3133/sir20175098.]

Smith, T. J., & McKenna, C. M. (2013). A comparison of logistic regression pseudo R2 indices. *Multiple Linear Regression Viewpoints*, 39(2), 17-26.

Tortorelli, R. L., Cooter, E. J., & Schuelein, J. W. (1991). Oklahoma--Floods and droughts. US Geological Survey, 1988-1989. Retrieved from https://pubs.usgs.gov/wsp/2375/report.pdf

Tortorelli, R.L. (2008). Hydrologic drought of Water Year 2006 compared with four major drought periods of the 20th century in Oklahoma: U.S. Geological Survey Scientific Investigations Report 2008–5199, 46 p., [Also available at https://pubs.usgs.gov/sir/2008/5199/.]

Van Loon, A. F. (2015). Hydrological drought explained. Wiley Interdisciplinary Reviews: Water, 2(4), 359-392.

Wilks, D. S. (2011). Statistical methods in the atmospheric sciences (Vol. 100). Academic press.

World Meteorological Organization and Global Water Partnership. 2016: Handbook of Drought Indicators and Indices (M. Svoboda and B.A. Fuchs). Integrated Drought Management Programme (IDMP), Integrated Drought Management Tools and Guidelines Series Geneva.

APPENDIX

Event Probability Results

Table 57. Occurrence (percentiles) and Event Probability of Drought Scenario 3 and Model Period A of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 3, Model Period A			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.95	0 / 0.93	0 / 0.91	0 / 0.90	0 / 0.90	0 / 0.89	0 / 0.89	0 / 0.88	0 / 0.88	0 / 0.87	0 / 0.87	0 / 0.86	0 / 0.86	0 / 0.85	0 / 0.84	0 / 0.84	0 / 0.83	0 / 0.82	0 / 0.80	0 / 0.77	0 / 0.70
	15,300	5th	0 / 0.94	0 / 0.91	2 / 0.89	2 / 0.88	2 / 0.87	3 / 0.87	4 / 0.86	4 / 0.85	4 / 0.85	4 / 0.84	5 / 0.84	5 / 0.83	5 / 0.83	5 / 0.82	5 / 0.81	5 / 0.80	5 / 0.79	5 / 0.78	5 / 0.76	5 / 0.73	5 / 0.65
	30,700	10th	0 / 0.92	2 / 0.88	4 / 0.86	4 / 0.85	5 / 0.83	6 / 0.82	7 / 0.82	7 / 0.81	8 / 0.80	8 / 0.80	8 / 0.79	9 / 0.78	9 / 0.78	10 / 0.77	10 / 0.76	10 / 0.75	10 / 0.74	10 / 0.72	10 / 0.70	10 / 0.66	10 / 0.57
	40,400	15th	0 / 0.91	2 / 0.86	4 / 0.83	5 / 0.82	7 / 0.80	8 / 0.79	9 / 0.79	10 / 0.78	11 / 0.77	11 / 0.76	12 / 0.75	13 / 0.75	14 / 0.74	14 / 0.73	15 / 0.72	15 / 0.71	15 / 0.69	15 / 0.68	15 / 0.65	15 / 0.61	15 / 0.52
	45,800	20th	0 / 0.90	3 / 0.84	5 / 0.81	6 / 0.80	8 / 0.79	9 / 0.77	11 / 0.77	12 / 0.76	13 / 0.75	14 / 0.74	15 / 0.73	15 / 0.72	17 / 0.72	18 / 0.71	19 / 0.69	19 / 0.68	19 / 0.67	19 / 0.65	20 / 0.63	20 / 0.59	20 / 0.49
	52,900	25th	0 / 0.88	3 / 0.82	6 / 0.79	7 / 0.77	8 / 0.76	10 / 0.75	12 / 0.74	14 / 0.73	15 / 0.72	15 / 0.71	17 / 0.70	18 / 0.69	20 / 0.69	21 / 0.67	22 / 0.66	23 / 0.65	23 / 0.64	24 / 0.62	25 / 0.59	25 / 0.55	-
	59,900	30th	0 / 0.87	3 / 0.80	6 / 0.76	8 / 0.75	10 / 0.73	12 / 0.72	14 / 0.71	16 / 0.70	17 / 0.69	19 / 0.68	20 / 0.67	21 / 0.66	23 / 0.65	25 / 0.64	26 / 0.63	27 / 0.62	27 / 0.60	28 / 0.58	30 / 0.56	30 / 0.51	-
	65,100	35th	0 / 0.86	3 / 0.78	6 / 0.74	9 / 0.73	11 / 0.71	14 / 0.70	16 / 0.69	18 / 0.68	20 / 0.67	21 / 0.66	23 / 0.65	24 / 0.64	26 / 0.63	28 / 0.62	30 / 0.60	31 / 0.59	32 / 0.58	33 / 0.56	35 / 0.53	35 / 0.49	-
	70,700	40th	0 / 0.84	3 / 0.76	6 / 0.72	9 / 0.70	12 / 0.69	14 / 0.67	17 / 0.66	19 / 0.65	21 / 0.64	23 / 0.63	25 / 0.62	26 / 0.61	28 / 0.60	31 / 0.59	33 / 0.57	35 / 0.56	36 / 0.55	37 / 0.53	39 / 0.50	-	-
	79,100	45th	0 / 0.82	4 / 0.73	7 / 0.68	10 / 0.67	13 / 0.65	16 / 0.63	19 / 0.62	21 / 0.61	23 / 0.60	25 / 0.59	27 / 0.58	29 / 0.57	32 / 0.56	34 / 0.54	37 / 0.53	38 / 0.52	40 / 0.50	41 / 0.48	-	-	-
	89,100	50th	0 / 0.78	4 / 0.68	7 / 0.64	11 / 0.62	14 / 0.60	17 / 0.58	21 / 0.57	23 / 0.56	26 / 0.55	27 / 0.54	29 / 0.53	32 / 0.51	34 / 0.51	38 / 0.49	40 / 0.48	-	-	-	-	-	-
	101,500	55th	0 / 0.74	4 / 0.63	8 / 0.58	12 / 0.55	15 / 0.54	18 / 0.52	22 / 0.51	25 / 0.49	28 / 0.48	-	-	-	-	-	-	-	-	-	-	-	-
	110,000	60th	0 / 0.70	4 / 0.58	8 / 0.53	12 / 0.51	15 / 0.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	122,500	65th	0 / 0.64	4 / 0.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	132,400	70th	0 / 0.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	142,700	75th	0 / 0.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 58. Occurrence (percentiles) and Event Probability of Drought Scenario 8 and Model Period A of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 8, Model Period A			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.96	0 / 0.91	0 / 0.88	0 / 0.87	0 / 0.85	0 / 0.84	0 / 0.82	0 / 0.81	0 / 0.80	0 / 0.79	0 / 0.78	0 / 0.77	0 / 0.76	0 / 0.74	0 / 0.72	0 / 0.71	0 / 0.69	0 / 0.66	0 / 0.62	0 / 0.55	-
	15,300	5th	0 / 0.96	0 / 0.90	2 / 0.87	2 / 0.85	2 / 0.84	3 / 0.82	4 / 0.81	4 / 0.80	4 / 0.78	4 / 0.77	5 / 0.76	5 / 0.75	5 / 0.74	5 / 0.72	5 / 0.70	5 / 0.68	5 / 0.66	5 / 0.63	5 / 0.59	-	-
	30,700	10th	0 / 0.95	2 / 0.89	4 / 0.85	4 / 0.83	5 / 0.81	6 / 0.80	7 / 0.78	7 / 0.77	8 / 0.76	8 / 0.74	8 / 0.73	9 / 0.71	9 / 0.70	10 / 0.68	10 / 0.66	10 / 0.65	10 / 0.62	10 / 0.59	10 / 0.55	-	-
	40,400	15th	0 / 0.94	2 / 0.88	4 / 0.84	5 / 0.82	7 / 0.80	8 / 0.78	9 / 0.76	10 / 0.75	11 / 0.74	11 / 0.72	12 / 0.71	13 / 0.69	14 / 0.68	14 / 0.66	15 / 0.64	15 / 0.63	15 / 0.60	15 / 0.57	-	-	-
	45,800	20th	0 / 0.94	3 / 0.87	5 / 0.83	6 / 0.81	8 / 0.79	9 / 0.77	11 / 0.75	12 / 0.74	13 / 0.72	14 / 0.71	15 / 0.70	15 / 0.68	17 / 0.67	18 / 0.65	19 / 0.63	19 / 0.61	19 / 0.59	19 / 0.56	-	-	-
	52,900	25th	0 / 0.94	3 / 0.86	6 / 0.82	7 / 0.80	8 / 0.78	10 / 0.75	12 / 0.74	14 / 0.72	15 / 0.71	15 / 0.70	17 / 0.68	18 / 0.66	20 / 0.65	21 / 0.63	22 / 0.61	23 / 0.59	23 / 0.57	-	-	-	-
	59,900	30th	0 / 0.93	3 / 0.85	6 / 0.81	8 / 0.78	10 / 0.76	12 / 0.74	14 / 0.73	16 / 0.71	17 / 0.69	19 / 0.68	20 / 0.66	21 / 0.65	23 / 0.64	25 / 0.62	26 / 0.59	27 / 0.58	27 / 0.55	-	-	-	-
	65,100	35th	0 / 0.93	3 / 0.85	6 / 0.80	9 / 0.78	11 / 0.75	14 / 0.73	16 / 0.71	18 / 0.70	20 / 0.68	21 / 0.67	23 / 0.65	24 / 0.64	26 / 0.62	28 / 0.60	30 / 0.58	31 / 0.56	-	-	-	-	-
	70,700	40th	0 / 0.92	3 / 0.84	6 / 0.79	9 / 0.76	12 / 0.74	14 / 0.72	17 / 0.70	19 / 0.69	21 / 0.67	23 / 0.65	25 / 0.64	26 / 0.62	28 / 0.61	31 / 0.59	33 / 0.57	35 / 0.55	-	-	-	-	-
	79,100	45th	0 / 0.92	4 / 0.83	7 / 0.77	10 / 0.75	13 / 0.72	16 / 0.70	19 / 0.68	21 / 0.67	23 / 0.65	25 / 0.63	27 / 0.62	29 / 0.60	32 / 0.59	34 / 0.57	-	-	-	-	-	-	-
	89,100	50th	0 / 0.91	4 / 0.81	7 / 0.76	11 / 0.73	14 / 0.70	17 / 0.68	21 / 0.66	23 / 0.64	26 / 0.63	27 / 0.61	29 / 0.59	32 / 0.58	34 / 0.56	-	-	-	-	-	-	-	-
	101,500	55th	0 / 0.90	4 / 0.79	8 / 0.73	12 / 0.70	15 / 0.68	18 / 0.65	22 / 0.63	25 / 0.61	28 / 0.60	30 / 0.58	32 / 0.56	35 / 0.54	-	-	-	-	-	-	-	-	-
	110,000	60th	0 / 0.89	4 / 0.78	8 / 0.71	12 / 0.68	15 / 0.66	19 / 0.63	23 / 0.61	26 / 0.59	29 / 0.57	32 / 0.56	-	-	-	-	-	-	-	-	-	-	-
	122,500	65th	0 / 0.87	4 / 0.75	8 / 0.69	12 / 0.65	15 / 0.63	19 / 0.60	23 / 0.58	27 / 0.56	-	-	-	-	-	-	-	-	-	-	-	-	-
	132,400	70th	0 / 0.86	4 / 0.73	8 / 0.66	12 / 0.63	16 / 0.60	20 / 0.57	24 / 0.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	142,700	75th	0 / 0.85	4 / 0.71	8 / 0.64	12 / 0.61	17 / 0.58	21 / 0.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	160,200	80th	0 / 0.82	5 / 0.67	9 / 0.60	13 / 0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	0 / 0.79	5 / 0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	0 / 0.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	0 / 0.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 59. Occurrence (percentiles) and Event Probability of Drought Scenario 9 and Model Period A of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 9, Model Period A			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.97	0 / 0.95	0 / 0.95	0 / 0.94	0 / 0.94	0 / 0.94	0 / 0.94	0 / 0.94	0 / 0.93	0 / 0.93	0 / 0.93	0 / 0.93	0 / 0.93	0 / 0.93	0 / 0.92	0 / 0.92	0 / 0.92	0 / 0.91	0 / 0.91	0 / 0.90	0 / 0.88
	15,300	5th	0 / 0.96	0 / 0.94	2 / 0.93	2 / 0.93	2 / 0.93	3 / 0.93	4 / 0.92	4 / 0.92	4 / 0.92	4 / 0.92	5 / 0.92	5 / 0.91	5 / 0.91	5 / 0.91	5 / 0.91	5 / 0.90	5 / 0.90	5 / 0.90	5 / 0.89	5 / 0.88	5 / 0.85
	30,700	10th	0 / 0.94	2 / 0.92	4 / 0.91	4 / 0.91	5 / 0.90	6 / 0.90	7 / 0.90	7 / 0.89	8 / 0.89	8 / 0.89	8 / 0.89	9 / 0.88	9 / 0.88	10 / 0.88	10 / 0.87	10 / 0.87	10 / 0.87	10 / 0.86	10 / 0.85	10 / 0.84	10 / 0.81
	40,400	15th	0 / 0.93	2 / 0.91	4 / 0.89	5 / 0.89	7 / 0.88	8 / 0.88	9 / 0.88	10 / 0.87	11 / 0.87	11 / 0.87	12 / 0.86	13 / 0.86	14 / 0.86	14 / 0.86	15 / 0.85	15 / 0.85	15 / 0.84	15 / 0.84	15 / 0.83	15 / 0.81	15 / 0.77
	45,800	20th	0 / 0.92	3 / 0.90	5 / 0.88	6 / 0.88	8 / 0.87	9 / 0.87	11 / 0.86	12 / 0.86	13 / 0.86	14 / 0.85	15 / 0.85	15 / 0.85	17 / 0.85	18 / 0.84	19 / 0.84	19 / 0.83	19 / 0.83	19 / 0.82	20 / 0.81	20 / 0.79	20 / 0.75
	52,900	25th	0 / 0.91	3 / 0.88	6 / 0.87	7 / 0.86	8 / 0.86	10 / 0.85	12 / 0.85	14 / 0.84	15 / 0.84	15 / 0.84	17 / 0.83	18 / 0.83	20 / 0.83	21 / 0.82	22 / 0.81	23 / 0.81	23 / 0.80	24 / 0.80	25 / 0.79	25 / 0.77	25 / 0.73
	59,900	30th	0 / 0.90	3 / 0.87	6 / 0.85	8 / 0.84	10 / 0.84	12 / 0.83	14 / 0.83	16 / 0.82	17 / 0.82	19 / 0.81	20 / 0.81	21 / 0.81	23 / 0.80	25 / 0.80	26 / 0.79	27 / 0.79	27 / 0.78	28 / 0.77	30 / 0.76	30 / 0.74	30 / 0.70
	65,100	35th	0 / 0.89	3 / 0.85	6 / 0.84	9 / 0.83	11 / 0.82	14 / 0.81	16 / 0.81	18 / 0.81	20 / 0.80	21 / 0.80	23 / 0.79	24 / 0.79	26 / 0.79	28 / 0.78	30 / 0.77	31 / 0.77	32 / 0.76	33 / 0.75	35 / 0.74	35 / 0.72	35 / 0.67
	70,700	40th	0 / 0.88	3 / 0.84	6 / 0.82	9 / 0.81	12 / 0.80	14 / 0.80	17 / 0.79	19 / 0.79	21 / 0.78	23 / 0.78	25 / 0.77	26 / 0.77	28 / 0.77	31 / 0.76	33 / 0.75	35 / 0.75	36 / 0.74	37 / 0.73	39 / 0.72	40 / 0.70	40 / 0.65
	79,100	45th	0 / 0.85	4 / 0.81	7 / 0.79	10 / 0.78	13 / 0.77	16 / 0.77	19 / 0.76	21 / 0.76	23 / 0.75	25 / 0.75	27 / 0.74	29 / 0.74	32 / 0.73	34 / 0.73	37 / 0.72	38 / 0.71	40 / 0.71	41 / 0.70	43 / 0.68	44 / 0.66	45 / 0.61
	89,100	50th	0 / 0.83	4 / 0.78	7 / 0.76	11 / 0.75	14 / 0.74	17 / 0.73	21 / 0.72	23 / 0.72	26 / 0.71	27 / 0.71	29 / 0.70	32 / 0.69	34 / 0.69	38 / 0.68	40 / 0.67	42 / 0.67	44 / 0.66	45 / 0.65	47 / 0.63	49 / 0.61	-
	101,500	55th	0 / 0.79	4 / 0.73	8 / 0.71	12 / 0.69	15 / 0.68	18 / 0.67	22 / 0.67	25 / 0.66	28 / 0.66	30 / 0.65	32 / 0.64	35 / 0.64	37 / 0.63	41 / 0.62	44 / 0.62	46 / 0.61	-	-	-	-	-
	110,000	60th	0 / 0.76	4 / 0.69	8 / 0.67	12 / 0.66	15 / 0.64	19 / 0.63	23 / 0.63	26 / 0.62	29 / 0.61	32 / 0.61	-	-	-	-	-	-	-	-	-	-	-
	122,500	65th	0 / 0.71	4 / 0.64	8 / 0.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	132,400	70th	0 / 0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	142,700	75th	0 / 0.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 60. Occurrence (percentiles) and Event Probability of Drought Scenario 3 and Model Period C of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 3, Model Period C			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.92	0 / 0.90	0 / 0.89	0 / 0.89	0 / 0.88	0 / 0.88	0 / 0.88	0 / 0.87	0 / 0.87	0 / 0.87	0 / 0.87	0 / 0.86	0 / 0.86	0 / 0.86	0 / 0.86	0 / 0.85	0 / 0.85	0 / 0.84	0 / 0.84	0 / 0.83	0 / 0.80
	15,300	5th	0 / 0.91	0 / 0.88	2 / 0.87	2 / 0.87	2 / 0.86	3 / 0.86	4 / 0.85	4 / 0.85	4 / 0.85	4 / 0.85	5 / 0.84	5 / 0.84	5 / 0.84	5 / 0.83	5 / 0.83	5 / 0.83	5 / 0.82	5 / 0.82	5 / 0.81	5 / 0.79	5 / 0.76
	30,700	10th	0 / 0.88	2 / 0.85	4 / 0.83	4 / 0.83	5 / 0.82	6 / 0.82	7 / 0.81	7 / 0.81	8 / 0.81	8 / 0.80	8 / 0.80	9 / 0.80	9 / 0.79	10 / 0.79	10 / 0.79	10 / 0.78	10 / 0.78	10 / 0.77	10 / 0.76	10 / 0.74	10 / 0.71
	40,400	15th	0 / 0.86	2 / 0.82	4 / 0.81	5 / 0.80	7 / 0.80	8 / 0.79	9 / 0.79	10 / 0.78	11 / 0.78	11 / 0.77	12 / 0.77	13 / 0.77	14 / 0.76	14 / 0.76	15 / 0.75	15 / 0.75	15 / 0.74	15 / 0.74	15 / 0.73	15 / 0.71	15 / 0.67
	45,800	20th	0 / 0.84	3 / 0.81	5 / 0.79	6 / 0.79	8 / 0.78	9 / 0.77	11 / 0.77	12 / 0.76	13 / 0.76	14 / 0.76	15 / 0.75	15 / 0.75	17 / 0.75	18 / 0.74	19 / 0.73	19 / 0.73	19 / 0.72	19 / 0.72	20 / 0.71	20 / 0.69	20 / 0.65
	52,900	25th	0 / 0.83	3 / 0.79	6 / 0.77	7 / 0.76	8 / 0.76	10 / 0.75	12 / 0.74	14 / 0.74	15 / 0.74	15 / 0.73	17 / 0.73	18 / 0.72	20 / 0.72	21 / 0.71	22 / 0.71	23 / 0.70	23 / 0.70	24 / 0.69	25 / 0.68	25 / 0.66	25 / 0.62
	59,900	30th	0 / 0.81	3 / 0.76	6 / 0.75	8 / 0.74	10 / 0.73	12 / 0.72	14 / 0.72	16 / 0.71	17 / 0.71	19 / 0.70	20 / 0.70	21 / 0.70	23 / 0.69	25 / 0.69	26 / 0.68	27 / 0.68	27 / 0.67	28 / 0.66	30 / 0.65	30 / 0.63	30 / 0.58
	65,100	35th	0 / 0.79	3 / 0.75	6 / 0.73	9 / 0.72	11 / 0.71	14 / 0.70	16 / 0.70	18 / 0.69	20 / 0.69	21 / 0.68	23 / 0.68	24 / 0.67	26 / 0.67	28 / 0.67	30 / 0.66	31 / 0.65	32 / 0.65	33 / 0.64	35 / 0.63	35 / 0.60	35 / 0.56
	70,700	40th	0 / 0.77	3 / 0.73	6 / 0.71	9 / 0.70	12 / 0.69	14 / 0.68	17 / 0.68	19 / 0.67	21 / 0.67	23 / 0.66	25 / 0.66	26 / 0.65	28 / 0.65	31 / 0.64	33 / 0.64	35 / 0.63	36 / 0.62	37 / 0.61	39 / 0.60	40 / 0.58	40 / 0.54
	79,100	45th	0 / 0.74	4 / 0.69	7 / 0.67	10 / 0.66	13 / 0.65	16 / 0.65	19 / 0.64	21 / 0.64	23 / 0.63	25 / 0.63	27 / 0.62	29 / 0.62	32 / 0.61	34 / 0.60	37 / 0.60	38 / 0.59	40 / 0.59	41 / 0.58	43 / 0.56	44 / 0.54	-
	89,100	50th	0 / 0.71	4 / 0.65	7 / 0.63	11 / 0.62	14 / 0.61	17 / 0.60	21 / 0.60	23 / 0.59	26 / 0.59	27 / 0.58	29 / 0.58	32 / 0.57	34 / 0.57	38 / 0.56	40 / 0.55	42 / 0.55	44 / 0.54	45 / 0.53	47 / 0.52	-	-
	101,500	55th	0 / 0.66	4 / 0.60	8 / 0.58	12 / 0.56	15 / 0.56	18 / 0.55	22 / 0.54	25 / 0.53	28 / 0.53	30 / 0.52	32 / 0.52	-	-	-	-	-	-	-	-	-	-
	110,000	60th	0 / 0.62	4 / 0.56	8 / 0.54	12 / 0.53	15 / 0.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	122,500	65th	0 / 0.57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	132,400	70th	0 / 0.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	142,700	75th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 61. Occurrence (percentiles) and Event Probability of Drought Scenario 4 and Model Period C of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 4, Model Period C			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.96	0 / 0.94	0 / 0.93	0 / 0.92	0 / 0.92	0 / 0.91	0 / 0.91	0 / 0.91	0 / 0.90	0 / 0.90	0 / 0.90	0 / 0.89	0 / 0.89	0 / 0.89	0 / 0.88	0 / 0.88	0 / 0.87	0 / 0.87	0 / 0.86	0 / 0.84	0 / 0.79
	15,300	5th	0 / 0.95	0 / 0.93	2 / 0.91	2 / 0.91	2 / 0.90	3 / 0.90	4 / 0.89	4 / 0.89	4 / 0.88	4 / 0.88	5 / 0.88	5 / 0.87	5 / 0.87	5 / 0.86	5 / 0.86	5 / 0.85	5 / 0.85	5 / 0.84	5 / 0.83	5 / 0.80	5 / 0.75
	30,700	10th	0 / 0.93	2 / 0.90	4 / 0.88	4 / 0.88	5 / 0.87	6 / 0.86	7 / 0.86	7 / 0.85	8 / 0.85	8 / 0.84	8 / 0.84	9 / 0.83	9 / 0.83	10 / 0.82	10 / 0.82	10 / 0.81	10 / 0.80	10 / 0.79	10 / 0.78	10 / 0.75	10 / 0.69
	40,400	15th	0 / 0.92	2 / 0.88	4 / 0.86	5 / 0.85	7 / 0.84	8 / 0.84	9 / 0.83	10 / 0.83	11 / 0.82	11 / 0.81	12 / 0.81	13 / 0.80	14 / 0.80	14 / 0.79	15 / 0.78	15 / 0.78	15 / 0.77	15 / 0.76	15 / 0.74	15 / 0.71	15 / 0.64
	45,800	20th	0 / 0.91	3 / 0.87	5 / 0.85	6 / 0.84	8 / 0.83	9 / 0.82	11 / 0.81	12 / 0.81	13 / 0.80	14 / 0.80	15 / 0.79	15 / 0.79	17 / 0.78	18 / 0.77	19 / 0.76	19 / 0.76	19 / 0.75	19 / 0.74	20 / 0.72	20 / 0.69	20 / 0.62
	52,900	25th	0 / 0.90	3 / 0.85	6 / 0.83	7 / 0.82	8 / 0.81	10 / 0.80	12 / 0.79	14 / 0.79	15 / 0.78	15 / 0.77	17 / 0.77	18 / 0.76	20 / 0.75	21 / 0.75	22 / 0.74	23 / 0.73	23 / 0.72	24 / 0.71	25 / 0.69	25 / 0.65	25 / 0.58
	59,900	30th	0 / 0.88	3 / 0.83	6 / 0.81	8 / 0.80	10 / 0.78	12 / 0.77	14 / 0.77	16 / 0.76	17 / 0.75	19 / 0.75	20 / 0.74	21 / 0.73	23 / 0.73	25 / 0.72	26 / 0.71	27 / 0.70	27 / 0.69	28 / 0.68	30 / 0.66	30 / 0.62	30 / 0.55
	65,100	35th	0 / 0.87	3 / 0.82	6 / 0.79	9 / 0.78	11 / 0.77	14 / 0.76	16 / 0.75	18 / 0.74	20 / 0.73	21 / 0.73	23 / 0.72	24 / 0.71	26 / 0.71	28 / 0.70	30 / 0.69	31 / 0.68	32 / 0.67	33 / 0.65	35 / 0.63	35 / 0.60	35 / 0.52
	70,700	40th	0 / 0.86	3 / 0.80	6 / 0.77	9 / 0.76	12 / 0.75	14 / 0.73	17 / 0.73	19 / 0.72	21 / 0.71	23 / 0.70	25 / 0.70	26 / 0.69	28 / 0.68	31 / 0.67	33 / 0.66	35 / 0.65	36 / 0.64	37 / 0.63	39 / 0.60	40 / 0.57	-
	79,100	45th	0 / 0.84	4 / 0.77	7 / 0.74	10 / 0.72	13 / 0.71	16 / 0.70	19 / 0.69	21 / 0.68	23 / 0.67	25 / 0.67	27 / 0.66	29 / 0.65	32 / 0.64	34 / 0.63	37 / 0.62	38 / 0.61	40 / 0.60	41 / 0.58	43 / 0.56	44 / 0.52	-
	89,100	50th	0 / 0.81	4 / 0.73	7 / 0.70	11 / 0.68	14 / 0.67	17 / 0.65	21 / 0.64	23 / 0.64	26 / 0.63	27 / 0.62	29 / 0.61	32 / 0.60	34 / 0.59	38 / 0.58	40 / 0.57	42 / 0.56	44 / 0.55	45 / 0.53	-	-	-
	101,500	55th	0 / 0.76	4 / 0.68	8 / 0.64	12 / 0.62	15 / 0.61	18 / 0.59	22 / 0.58	25 / 0.57	28 / 0.57	30 / 0.56	32 / 0.55	35 / 0.54	37 / 0.53	41 / 0.52	-	-	-	-	-	-	-
	110,000	60th	0 / 0.73	4 / 0.64	8 / 0.60	12 / 0.58	15 / 0.57	19 / 0.55	23 / 0.54	26 / 0.53	29 / 0.52	32 / 0.51	-	-	-	-	-	-	-	-	-	-	-
	122,500	65th	0 / 0.68	4 / 0.58	8 / 0.54	12 / 0.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	132,400	70th	0 / 0.63	4 / 0.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	142,700	75th	0 / 0.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 62. Occurrence (percentiles) and Event Probability of Drought Scenario 8 and Model Period C of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 8, Model Period C			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 1.00	0 / 0.98	0 / 0.97	0 / 0.97	0 / 0.96	0 / 0.96	0 / 0.95	0 / 0.95	0 / 0.94	0 / 0.93	0 / 0.93	0 / 0.92	0 / 0.92	0 / 0.91	0 / 0.89	0 / 0.88	0 / 0.87	0 / 0.85	0 / 0.81	0 / 0.74	-
	15,300	5th	0 / 0.99	0 / 0.98	2 / 0.97	2 / 0.96	2 / 0.95	3 / 0.95	4 / 0.94	4 / 0.93	4 / 0.93	4 / 0.92	5 / 0.91	5 / 0.90	5 / 0.90	5 / 0.89	5 / 0.87	5 / 0.86	5 / 0.84	5 / 0.82	5 / 0.78	5 / 0.70	-
	30,700	10th	0 / 0.99	2 / 0.97	4 / 0.96	4 / 0.95	5 / 0.94	6 / 0.93	7 / 0.92	7 / 0.91	8 / 0.91	8 / 0.90	8 / 0.89	9 / 0.88	9 / 0.87	10 / 0.85	10 / 0.83	10 / 0.82	10 / 0.80	10 / 0.77	10 / 0.72	10 / 0.63	-
	40,400	15th	0 / 0.99	2 / 0.97	4 / 0.95	5 / 0.94	7 / 0.93	8 / 0.92	9 / 0.91	10 / 0.90	11 / 0.89	11 / 0.88	12 / 0.87	13 / 0.85	14 / 0.84	14 / 0.83	15 / 0.81	15 / 0.79	15 / 0.76	15 / 0.73	15 / 0.68	15 / 0.58	-
	45,800	20th	0 / 0.99	3 / 0.96	5 / 0.94	6 / 0.93	8 / 0.92	9 / 0.91	11 / 0.90	12 / 0.89	13 / 0.88	14 / 0.87	15 / 0.85	15 / 0.84	17 / 0.83	18 / 0.81	19 / 0.79	19 / 0.77	19 / 0.75	19 / 0.71	20 / 0.66	-	-
	52,900	25th	0 / 0.99	3 / 0.96	6 / 0.94	7 / 0.92	8 / 0.91	10 / 0.90	12 / 0.88	14 / 0.87	15 / 0.86	15 / 0.85	17 / 0.84	18 / 0.82	20 / 0.81	21 / 0.79	22 / 0.77	23 / 0.75	23 / 0.72	24 / 0.68	25 / 0.62	-	-
	59,900	30th	0 / 0.99	3 / 0.95	6 / 0.93	8 / 0.91	10 / 0.90	12 / 0.88	14 / 0.87	16 / 0.86	17 / 0.84	19 / 0.83	20 / 0.82	21 / 0.80	23 / 0.79	25 / 0.76	26 / 0.74	27 / 0.72	27 / 0.69	28 / 0.65	30 / 0.59	-	-
	65,100	35th	0 / 0.98	3 / 0.95	6 / 0.92	9 / 0.91	11 / 0.89	14 / 0.87	16 / 0.86	18 / 0.84	20 / 0.83	21 / 0.82	23 / 0.80	24 / 0.78	26 / 0.77	28 / 0.75	30 / 0.72	31 / 0.70	32 / 0.67	33 / 0.63	35 / 0.57	-	-
	70,700	40th	0 / 0.98	3 / 0.94	6 / 0.91	9 / 0.90	12 / 0.88	14 / 0.86	17 / 0.84	19 / 0.83	21 / 0.81	23 / 0.80	25 / 0.78	26 / 0.76	28 / 0.75	31 / 0.72	33 / 0.70	35 / 0.68	36 / 0.64	37 / 0.60	-	-	-
	79,100	45th	0 / 0.98	4 / 0.93	7 / 0.90	10 / 0.88	13 / 0.86	16 / 0.84	19 / 0.82	21 / 0.80	23 / 0.79	25 / 0.77	27 / 0.75	29 / 0.73	32 / 0.72	34 / 0.69	37 / 0.66	38 / 0.64	40 / 0.60	41 / 0.56	-	-	-
	89,100	50th	0 / 0.97	4 / 0.92	7 / 0.88	11 / 0.86	14 / 0.83	17 / 0.81	21 / 0.79	23 / 0.77	26 / 0.75	27 / 0.73	29 / 0.72	32 / 0.69	34 / 0.68	38 / 0.65	40 / 0.62	42 / 0.59	-	-	-	-	-
	101,500	55th	0 / 0.97	4 / 0.90	8 / 0.85	12 / 0.82	15 / 0.80	18 / 0.77	22 / 0.75	25 / 0.73	28 / 0.71	30 / 0.68	32 / 0.66	35 / 0.64	37 / 0.62	41 / 0.59	-	-	-	-	-	-	-
	110,000	60th	0 / 0.96	4 / 0.89	8 / 0.83	12 / 0.80	15 / 0.77	19 / 0.74	23 / 0.72	26 / 0.69	29 / 0.67	32 / 0.65	34 / 0.63	38 / 0.60	40 / 0.58	-	-	-	-	-	-	-	-
	122,500	65th	0 / 0.95	4 / 0.86	8 / 0.79	12 / 0.76	15 / 0.72	19 / 0.69	23 / 0.66	27 / 0.64	30 / 0.61	33 / 0.59	36 / 0.57	-	-	-	-	-	-	-	-	-	-
	132,400	70th	0 / 0.94	4 / 0.83	8 / 0.76	12 / 0.72	16 / 0.68	20 / 0.65	24 / 0.62	28 / 0.59	31 / 0.57	-	-	-	-	-	-	-	-	-	-	-	-
	142,700	75th	0 / 0.93	4 / 0.81	8 / 0.72	12 / 0.68	17 / 0.64	21 / 0.60	25 / 0.57	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	160,200	80th	0 / 0.91	5 / 0.75	9 / 0.65	13 / 0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	0 / 0.86	5 / 0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	0 / 0.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	0 / 0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 63. Occurrence (percentiles) and Event Probability of Drought Scenario 6 and Model Period D of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 6, Model Period D			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.99	0 / 0.98	0 / 0.97	0 / 0.97	0 / 0.97	0 / 0.97	0 / 0.97	0 / 0.97	0 / 0.96	0 / 0.96	0 / 0.96	0 / 0.96	0 / 0.96	0 / 0.96	0 / 0.95	0 / 0.95	0 / 0.95	0 / 0.95	0 / 0.94	0 / 0.93	0 / 0.91
	15,300	5th	0 / 0.98	0 / 0.97	2 / 0.97	2 / 0.97	2 / 0.96	3 / 0.96	4 / 0.96	4 / 0.96	4 / 0.96	4 / 0.95	5 / 0.95	5 / 0.95	5 / 0.95	5 / 0.95	5 / 0.94	5 / 0.94	5 / 0.94	5 / 0.93	5 / 0.93	5 / 0.92	5 / 0.89
	30,700	10th	0 / 0.98	2 / 0.96	4 / 0.95	4 / 0.95	5 / 0.95	6 / 0.94	7 / 0.94	7 / 0.94	8 / 0.94	8 / 0.94	8 / 0.93	9 / 0.93	9 / 0.93	10 / 0.93	10 / 0.92	10 / 0.92	10 / 0.91	10 / 0.91	10 / 0.90	10 / 0.88	10 / 0.85
	40,400	15th	0 / 0.97	2 / 0.95	4 / 0.94	5 / 0.94	7 / 0.94	8 / 0.93	9 / 0.93	10 / 0.93	11 / 0.92	11 / 0.92	12 / 0.92	13 / 0.92	14 / 0.91	14 / 0.91	15 / 0.90	15 / 0.90	15 / 0.90	15 / 0.89	15 / 0.88	15 / 0.86	15 / 0.82
	45,800	20th	0 / 0.97	3 / 0.95	5 / 0.94	6 / 0.93	8 / 0.93	9 / 0.92	11 / 0.92	12 / 0.92	13 / 0.91	14 / 0.91	15 / 0.91	15 / 0.91	17 / 0.90	18 / 0.90	19 / 0.89	19 / 0.89	19 / 0.88	19 / 0.88	20 / 0.87	20 / 0.85	20 / 0.80
	52,900	25th	0 / 0.96	3 / 0.94	6 / 0.93	7 / 0.92	8 / 0.92	10 / 0.91	12 / 0.91	14 / 0.91	15 / 0.90	15 / 0.90	17 / 0.89	18 / 0.89	20 / 0.89	21 / 0.88	22 / 0.88	23 / 0.87	23 / 0.87	24 / 0.86	25 / 0.85	25 / 0.82	25 / 0.77
	59,900	30th	0 / 0.95	3 / 0.93	6 / 0.92	8 / 0.91	10 / 0.91	12 / 0.90	14 / 0.90	16 / 0.89	17 / 0.89	19 / 0.88	20 / 0.88	21 / 0.87	23 / 0.87	25 / 0.87	26 / 0.86	27 / 0.86	27 / 0.85	28 / 0.84	30 / 0.82	30 / 0.80	30 / 0.74
	65,100	35th	0 / 0.95	3 / 0.92	6 / 0.91	9 / 0.90	11 / 0.89	14 / 0.89	16 / 0.88	18 / 0.88	20 / 0.88	21 / 0.87	23 / 0.87	24 / 0.86	26 / 0.86	28 / 0.85	30 / 0.85	31 / 0.84	32 / 0.83	33 / 0.82	35 / 0.81	35 / 0.78	35 / 0.72
	70,700	40th	0 / 0.94	3 / 0.91	6 / 0.90	9 / 0.89	12 / 0.88	14 / 0.88	17 / 0.87	19 / 0.87	21 / 0.86	23 / 0.86	25 / 0.85	26 / 0.85	28 / 0.84	31 / 0.84	33 / 0.83	35 / 0.82	36 / 0.81	37 / 0.80	39 / 0.79	40 / 0.76	40 / 0.69
	79,100	45th	0 / 0.93	4 / 0.90	7 / 0.88	10 / 0.87	13 / 0.86	16 / 0.85	19 / 0.85	21 / 0.84	23 / 0.84	25 / 0.83	27 / 0.83	29 / 0.82	32 / 0.82	34 / 0.81	37 / 0.80	38 / 0.79	40 / 0.78	41 / 0.77	43 / 0.75	44 / 0.72	45 / 0.65
	89,100	50th	0 / 0.92	4 / 0.87	7 / 0.85	11 / 0.84	14 / 0.83	17 / 0.82	21 / 0.82	23 / 0.81	26 / 0.80	27 / 0.80	29 / 0.79	32 / 0.78	34 / 0.78	38 / 0.77	40 / 0.76	42 / 0.75	44 / 0.74	45 / 0.73	47 / 0.71	49 / 0.68	-
	101,500	55th	0 / 0.89	4 / 0.84	8 / 0.81	12 / 0.80	15 / 0.79	18 / 0.78	22 / 0.77	25 / 0.76	28 / 0.76	30 / 0.75	32 / 0.74	35 / 0.73	37 / 0.73	41 / 0.72	44 / 0.71	46 / 0.70	48 / 0.69	50 / 0.67	52 / 0.65	-	-
	110,000	60th	0 / 0.87	4 / 0.81	8 / 0.78	12 / 0.77	15 / 0.76	19 / 0.75	23 / 0.74	26 / 0.73	29 / 0.72	32 / 0.71	34 / 0.70	38 / 0.70	40 / 0.69	44 / 0.68	48 / 0.67	50 / 0.66	52 / 0.65	-	-	-	-
	122,500	65th	0 / 0.84	4 / 0.77	8 / 0.73	12 / 0.72	15 / 0.70	19 / 0.69	23 / 0.68	27 / 0.67	30 / 0.66	33 / 0.65	-	-	-	-	-	-	-	-	-	-	-
	132,400	70th	0 / 0.81	4 / 0.73	8 / 0.69	12 / 0.67	16 / 0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	142,700	75th	0 / 0.77	4 / 0.68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	160,200	80th	0 / 0.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 64. Occurrence (percentiles) and Event Probability of Drought Scenario 7 and Model Period D of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 7, Model Period D			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 0.97
	15,300	5th	0 / 1.00	0 / 1.00	2 / 1.00	2 / 1.00	2 / 1.00	3 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 0.92
	30,700	10th	0 / 1.00	2 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	6 / 1.00	7 / 1.00	7 / 1.00	8 / 1.00	8 / 1.00	8 / 1.00	9 / 1.00	9 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	-
	40,400	15th	0 / 1.00	2 / 1.00	4 / 1.00	5 / 1.00	7 / 1.00	8 / 1.00	9 / 1.00	10 / 1.00	11 / 1.00	11 / 1.00	12 / 1.00	13 / 1.00	14 / 1.00	14 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	-
	45,800	20th	0 / 1.00	3 / 1.00	5 / 1.00	6 / 1.00	8 / 1.00	9 / 1.00	11 / 1.00	12 / 1.00	13 / 1.00	14 / 1.00	15 / 1.00	15 / 1.00	17 / 1.00	18 / 1.00	19 / 1.00	19 / 1.00	19 / 1.00	19 / 1.00	20 / 1.00	20 / 1.00		-
	52,900	25th	0 / 1.00	3 / 1.00	6 / 1.00	7 / 1.00	8 / 1.00	10 / 1.00	12 / 1.00	14 / 1.00	15 / 1.00	15 / 1.00	17 / 1.00	18 / 1.00	20 / 1.00	21 / 1.00	22 / 1.00	23 / 1.00	23 / 1.00	24 / 1.00	25 / 1.00	25 / 0.99		-
	59,900	30th	0 / 1.00	3 / 1.00	6 / 1.00	8 / 1.00	10 / 1.00	12 / 1.00	14 / 1.00	16 / 1.00	17 / 1.00	19 / 1.00	20 / 1.00	21 / 1.00	23 / 1.00	25 / 1.00	26 / 1.00	27 / 1.00	27 / 1.00	28 / 1.00	30 / 1.00	30 / 0.99		-
	65,100	35th	0 / 1.00	3 / 1.00	6 / 1.00	9 / 1.00	11 / 1.00	14 / 1.00	16 / 1.00	18 / 1.00	20 / 1.00	21 / 1.00	23 / 1.00	24 / 1.00	26 / 1.00	28 / 1.00	30 / 1.00	31 / 1.00	32 / 1.00	33 / 1.00	35 / 1.00	35 / 0.98		-
	70,700	40th	0 / 1.00	3 / 1.00	6 / 1.00	9 / 1.00	12 / 1.00	14 / 1.00	17 / 1.00	19 / 1.00	21 / 1.00	23 / 1.00	25 / 1.00	26 / 1.00	28 / 1.00	31 / 1.00	33 / 1.00	35 / 1.00	36 / 1.00	37 / 1.00	39 / 1.00	40 / 0.97		-
	79,100	45th	0 / 1.00	4 / 1.00	7 / 1.00	10 / 1.00	13 / 1.00	16 / 1.00	19 / 1.00	21 / 1.00	23 / 1.00	25 / 1.00	27 / 1.00	29 / 1.00	32 / 1.00	34 / 1.00	37 / 1.00	38 / 1.00	40 / 1.00	41 / 1.00	43 / 1.00	44 / 0.95		-
	89,100	50th	0 / 1.00	4 / 1.00	7 / 1.00	11 / 1.00	14 / 1.00	17 / 1.00	21 / 1.00	23 / 1.00	26 / 1.00	27 / 1.00	29 / 1.00	32 / 1.00	34 / 1.00	38 / 1.00	40 / 1.00	42 / 1.00	44 / 1.00	45 / 1.00	47 / 0.99	49 / 0.88		-
	101,500	55th	0 / 1.00	4 / 1.00	8 / 1.00	12 / 1.00	15 / 1.00	18 / 1.00	22 / 1.00	25 / 1.00	28 / 1.00	30 / 1.00	32 / 1.00	35 / 1.00	37 / 1.00	41 / 1.00	44 / 1.00	46 / 1.00	48 / 1.00	50 / 1.00	52 / 0.98	-		-
	110,000	60th	0 / 1.00	4 / 1.00	8 / 1.00	12 / 1.00	15 / 1.00	19 / 1.00	23 / 1.00	26 / 1.00	29 / 1.00	32 / 1.00	34 / 1.00	38 / 1.00	40 / 1.00	44 / 1.00	48 / 1.00	50 / 1.00	52 / 1.00	54 / 0.99	57 / 0.96	-		-
	122,500	65th	0 / 1.00	4 / 1.00	8 / 1.00	12 / 1.00	15 / 1.00	19 / 1.00	23 / 1.00	27 / 1.00	30 / 1.00	33 / 1.00	36 / 1.00	40 / 1.00	43 / 1.00	47 / 1.00	51 / 1.00	53 / 1.00	56 / 0.99	58 / 0.98	61 / 0.88	-		-
	132,400	70th	0 / 1.00	4 / 1.00	8 / 1.00	12 / 1.00	16 / 1.00	20 / 1.00	24 / 1.00	28 / 1.00	31 / 1.00	35 / 1.00	38 / 1.00	41 / 1.00	45 / 1.00	49 / 1.00	54 / 1.00	57 / 1.00	60 / 0.99	63 / 0.95	-	-		-
	142,700	75th	0 / 1.00	4 / 1.00	8 / 1.00	12 / 1.00	17 / 1.00	21 / 1.00	25 / 1.00	29 / 1.00	33 / 1.00	37 / 1.00	40 / 1.00	44 / 1.00	47 / 1.00	52 / 1.00	57 / 0.99	60 / 0.99	63 / 0.96	67 / 0.88	-	-		-
	160,200	80th	0 / 1.00	5 / 1.00	9 / 1.00	13 / 1.00	18 / 1.00	22 / 1.00	26 / 1.00	30 / 1.00	34 / 1.00	38 / 1.00	42 / 1.00	46 / 1.00	50 / 1.00	55 / 0.99	59 / 0.97	63 / 0.94	67 / 0.84	-	-	-		-
	182,500	85th	0 / 1.00	5 / 1.00	9 / 1.00	14 / 1.00	19 / 1.00	23 / 1.00	27 / 1.00	32 / 1.00	36 / 1.00	40 / 1.00	44 / 0.99	48 / 0.98	52 / 0.97	57 / 0.92	62 / 0.81	-	-	-	-	-		-
	214,800	90th	0 / 1.00	5 / 1.00	10 / 1.00	14 / 1.00	19 / 1.00	24 / 1.00	29 / 0.99	33 / 0.98	37 / 0.96	42 / 0.92	45 / 0.85	-	-	-	-	-	-	-	-	-		-
	256,200	95th	0 / 1.00	5 / 1.00	10 / 1.00	15 / 0.99	20 / 0.95	25 / 0.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-

Table 65. Occurrence (percentiles) and Event Probability of Drought Scenario 8 and Model Period D of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 8, Model Period D			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00
	15,300	5th	0 / 1.00	0 / 1.00	2 / 1.00	2 / 1.00	2 / 1.00	3 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00
	30,700	10th	0 / 1.00	2 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	6 / 1.00	7 / 1.00	7 / 1.00	8 / 1.00	8 / 1.00	8 / 1.00	9 / 1.00	9 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00
	40,400	15th	0 / 1.00	2 / 1.00	4 / 1.00	5 / 1.00	7 / 1.00	8 / 1.00	9 / 1.00	10 / 1.00	11 / 1.00	11 / 1.00	12 / 1.00	13 / 1.00	14 / 1.00	14 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 0.99
	45,800	20th	0 / 1.00	3 / 1.00	5 / 1.00	6 / 1.00	8 / 1.00	9 / 1.00	11 / 1.00	12 / 1.00	13 / 1.00	14 / 1.00	15 / 1.00	15 / 1.00	17 / 1.00	18 / 1.00	19 / 1.00	19 / 1.00	19 / 1.00	19 / 1.00	20 / 1.00	20 / 1.00	20 / 0.99
	52,900	25th	0 / 1.00	3 / 1.00	6 / 1.00	7 / 1.00	8 / 1.00	10 / 1.00	12 / 1.00	14 / 1.00	15 / 1.00	15 / 1.00	17 / 1.00	18 / 1.00	20 / 1.00	21 / 1.00	22 / 1.00	23 / 1.00	23 / 1.00	24 / 1.00	25 / 1.00	25 / 1.00	25 / 0.98
	59,900	30th	0 / 1.00	3 / 1.00	6 / 1.00	8 / 1.00	10 / 1.00	12 / 1.00	14 / 1.00	16 / 1.00	17 / 1.00	19 / 1.00	20 / 1.00	21 / 1.00	23 / 1.00	25 / 1.00	26 / 1.00	27 / 1.00	27 / 1.00	28 / 1.00	30 / 1.00	30 / 0.99	30 / 0.97
	65,100	35th	0 / 1.00	3 / 1.00	6 / 1.00	9 / 1.00	11 / 1.00	14 / 1.00	16 / 1.00	18 / 1.00	20 / 1.00	21 / 1.00	23 / 1.00	24 / 1.00	26 / 1.00	28 / 1.00	30 / 1.00	31 / 1.00	32 / 1.00	33 / 1.00	35 / 0.99	35 / 0.99	35 / 0.95
	70,700	40th	0 / 1.00	3 / 1.00	6 / 1.00	9 / 1.00	12 / 1.00	14 / 1.00	17 / 1.00	19 / 1.00	21 / 1.00	23 / 1.00	25 / 1.00	26 / 1.00	28 / 1.00	31 / 1.00	33 / 1.00	35 / 1.00	36 / 1.00	37 / 0.99	39 / 0.99	40 / 0.98	40 / 0.93
	79,100	45th	0 / 1.00	4 / 1.00	7 / 1.00	10 / 1.00	13 / 1.00	16 / 1.00	19 / 1.00	21 / 1.00	23 / 1.00	25 / 1.00	27 / 1.00	29 / 1.00	32 / 1.00	34 / 0.99	37 / 0.99	38 / 0.99	40 / 0.99	41 / 0.99	43 / 0.98	44 / 0.96	45 / 0.86
	89,100	50th	0 / 1.00	4 / 1.00	7 / 1.00	11 / 1.00	14 / 1.00	17 / 1.00	21 / 1.00	23 / 1.00	26 / 0.99	27 / 0.99	29 / 0.99	32 / 0.99	34 / 0.99	38 / 0.99	40 / 0.99	42 / 0.98	44 / 0.98	45 / 0.97	47 / 0.96	49 / 0.92	50 / 0.73
	101,500	55th	0 / 1.00	4 / 1.00	8 / 1.00	12 / 1.00	15 / 0.99	18 / 0.99	22 / 0.99	25 / 0.99	28 / 0.99	30 / 0.98	32 / 0.98	35 / 0.98	37 / 0.97	41 / 0.97	44 / 0.96	46 / 0.95	48 / 0.94	50 / 0.92	52 / 0.89	54 / 0.80	-
	110,000	60th	0 / 1.00	4 / 1.00	8 / 0.99	12 / 0.99	15 / 0.99	19 / 0.98	23 / 0.98	26 / 0.98	29 / 0.97	32 / 0.97	34 / 0.96	38 / 0.95	40 / 0.95	44 / 0.94	48 / 0.92	50 / 0.91	52 / 0.89	54 / 0.85	57 / 0.80	-	-
	122,500	65th	0 / 1.00	4 / 0.99	8 / 0.98	12 / 0.97	15 / 0.97	19 / 0.95	23 / 0.95	27 / 0.94	30 / 0.92	33 / 0.91	36 / 0.90	40 / 0.88	43 / 0.87	47 / 0.84	51 / 0.81	53 / 0.78	56 / 0.74	58 / 0.68	-	-	-
	132,400	70th	0 / 1.00	4 / 0.98	8 / 0.96	12 / 0.94	16 / 0.92	20 / 0.90	24 / 0.88	28 / 0.87	31 / 0.84	35 / 0.82	38 / 0.80	41 / 0.77	45 / 0.74	49 / 0.70	-	-	-	-	-	-	-
	142,700	75th	0 / 0.99	4 / 0.96	8 / 0.91	12 / 0.88	17 / 0.84	21 / 0.80	25 / 0.77	29 / 0.73	33 / 0.70	-	-	-	-	-	-	-	-	-	-	-	-
	160,200	80th	0 / 0.97	5 / 0.83	9 / 0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	0 / 0.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 66. Occurrence (percentiles) and Event Probability of Drought Scenario 10 and Model Period D of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 10, Model Period D			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00
	15,300	5th	0 / 1.00	0 / 1.00	2 / 1.00	2 / 1.00	2 / 1.00	3 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00
	30,700	10th	0 / 1.00	2 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	6 / 1.00	7 / 1.00	7 / 1.00	8 / 1.00	8 / 1.00	8 / 1.00	9 / 1.00	9 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00
	40,400	15th	0 / 1.00	2 / 1.00	4 / 1.00	5 / 1.00	7 / 1.00	8 / 1.00	9 / 1.00	10 / 1.00	11 / 1.00	11 / 1.00	12 / 1.00	13 / 1.00	14 / 1.00	14 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 1.00	15 / 0.99
	45,800	20th	0 / 1.00	3 / 1.00	5 / 1.00	6 / 1.00	8 / 1.00	9 / 1.00	11 / 1.00	12 / 1.00	13 / 1.00	14 / 1.00	15 / 1.00	15 / 1.00	17 / 1.00	18 / 1.00	19 / 1.00	19 / 1.00	19 / 1.00	19 / 1.00	20 / 1.00	20 / 1.00	20 / 0.99	
	52,900	25th	0 / 1.00	3 / 1.00	6 / 1.00	7 / 1.00	8 / 1.00	10 / 1.00	12 / 1.00	14 / 1.00	15 / 1.00	15 / 1.00	17 / 1.00	18 / 1.00	20 / 1.00	21 / 1.00	22 / 1.00	23 / 1.00	23 / 1.00	24 / 1.00	25 / 1.00	25 / 0.99	25 / 0.98	
	59,900	30th	0 / 1.00	3 / 1.00	6 / 1.00	8 / 1.00	10 / 1.00	12 / 1.00	14 / 1.00	16 / 1.00	17 / 1.00	19 / 1.00	20 / 1.00	21 / 1.00	23 / 1.00	25 / 1.00	26 / 1.00	27 / 1.00	27 / 1.00	28 / 1.00	30 / 0.99	30 / 0.99	30 / 0.97	
	65,100	35th	0 / 1.00	3 / 1.00	6 / 1.00	9 / 1.00	11 / 1.00	14 / 1.00	16 / 1.00	18 / 1.00	20 / 1.00	21 / 1.00	23 / 1.00	24 / 1.00	26 / 1.00	28 / 1.00	30 / 1.00	31 / 1.00	32 / 1.00	33 / 0.99	35 / 0.99	35 / 0.99	35 / 0.96	
	70,700	40th	0 / 1.00	3 / 1.00	6 / 1.00	9 / 1.00	12 / 1.00	14 / 1.00	17 / 1.00	19 / 1.00	21 / 1.00	23 / 1.00	25 / 1.00	26 / 1.00	28 / 1.00	31 / 1.00	33 / 1.00	35 / 0.99	36 / 0.99	37 / 0.99	39 / 0.99	40 / 0.98	40 / 0.93	
	79,100	45th	0 / 1.00	4 / 1.00	7 / 1.00	10 / 1.00	13 / 1.00	16 / 1.00	19 / 1.00	21 / 1.00	23 / 1.00	25 / 1.00	27 / 0.99	29 / 0.99	32 / 0.99	34 / 0.99	37 / 0.99	38 / 0.99	40 / 0.99	41 / 0.98	43 / 0.98	44 / 0.96	45 / 0.88	
	89,100	50th	0 / 1.00	4 / 1.00	7 / 1.00	11 / 1.00	14 / 1.00	17 / 0.99	21 / 0.99	23 / 0.99	26 / 0.99	27 / 0.99	29 / 0.99	32 / 0.99	34 / 0.99	38 / 0.98	40 / 0.98	42 / 0.98	44 / 0.97	45 / 0.96	47 / 0.95	49 / 0.92	50 / 0.77	
	101,500	55th	0 / 1.00	4 / 1.00	8 / 0.99	12 / 0.99	15 / 0.99	18 / 0.99	22 / 0.98	25 / 0.98	28 / 0.98	30 / 0.98	32 / 0.97	35 / 0.97	37 / 0.96	41 / 0.96	44 / 0.95	46 / 0.94	48 / 0.93	50 / 0.91	52 / 0.88	54 / 0.81	-	
	110,000	60th	0 / 1.00	4 / 0.99	8 / 0.99	12 / 0.98	15 / 0.98	19 / 0.97	23 / 0.97	26 / 0.96	29 / 0.96	32 / 0.95	34 / 0.95	38 / 0.94	40 / 0.93	44 / 0.92	48 / 0.91	50 / 0.89	52 / 0.87	54 / 0.84	57 / 0.79	59 / 0.68	-	
	122,500	65th	0 / 1.00	4 / 0.98	8 / 0.97	12 / 0.96	15 / 0.95	19 / 0.93	23 / 0.92	27 / 0.91	30 / 0.90	33 / 0.89	36 / 0.87	40 / 0.85	43 / 0.84	47 / 0.82	51 / 0.79	53 / 0.76	56 / 0.72	58 / 0.67	-	-	-	
	132,400	70th	0 / 0.99	4 / 0.96	8 / 0.93	12 / 0.91	16 / 0.89	20 / 0.87	24 / 0.85	28 / 0.83	31 / 0.80	35 / 0.78	38 / 0.76	41 / 0.73	45 / 0.71	49 / 0.67	-	-	-	-	-	-	-	
	142,700	75th	0 / 0.98	4 / 0.92	8 / 0.86	12 / 0.82	17 / 0.78	21 / 0.74	25 / 0.71	29 / 0.68	-	-	-	-	-	-	-	-	-	-	-	-	-	
	160,200	80th	0 / 0.94	5 / 0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	182,500	85th	0 / 0.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 67. Occurrence (percentiles) and Event Probability of Drought Scenario 11 and Model Period D of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 11, Model Period D			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	-	0 / 0.62	0 / 0.79	0 / 0.85	0 / 0.89	0 / 0.91	0 / 0.93	0 / 0.94	0 / 0.95	0 / 0.96	0 / 0.97	0 / 0.97	0 / 0.98	0 / 0.98	0 / 0.98	0 / 0.99	0 / 0.99	0 / 0.99	0 / 1.00	0 / 1.00	0 / 1.00
	15,300	5th	-	0 / 0.51	2 / 0.71	2 / 0.78	2 / 0.83	3 / 0.87	4 / 0.89	4 / 0.91	4 / 0.93	4 / 0.94	5 / 0.95	5 / 0.96	5 / 0.96	5 / 0.97	5 / 0.98	5 / 0.98	5 / 0.99	5 / 0.99	5 / 0.99	5 / 1.00	5 / 1.00
	30,700	10th	-	2 / 0.35	4 / 0.56	4 / 0.65	5 / 0.72	6 / 0.78	7 / 0.82	7 / 0.84	8 / 0.87	8 / 0.89	8 / 0.91	9 / 0.92	9 / 0.93	10 / 0.94	10 / 0.96	10 / 0.96	10 / 0.97	10 / 0.98	10 / 0.99	10 / 0.99	10 / 1.00
	40,400	15th	-	-	4 / 0.46	5 / 0.56	7 / 0.64	8 / 0.71	9 / 0.75	10 / 0.78	11 / 0.82	11 / 0.84	12 / 0.86	13 / 0.89	14 / 0.90	14 / 0.92	15 / 0.94	15 / 0.95	15 / 0.96	15 / 0.97	15 / 0.98	15 / 0.99	15 / 1.00
	45,800	20th	-	-	5 / 0.41	6 / 0.50	8 / 0.58	9 / 0.66	11 / 0.70	12 / 0.74	13 / 0.78	14 / 0.81	15 / 0.84	15 / 0.86	17 / 0.88	18 / 0.90	19 / 0.92	19 / 0.93	19 / 0.95	19 / 0.96	20 / 0.98	20 / 0.99	20 / 1.00
	52,900	25th	-	-	6 / 0.34	7 / 0.43	8 / 0.51	10 / 0.59	12 / 0.64	14 / 0.68	15 / 0.72	15 / 0.76	17 / 0.79	18 / 0.82	20 / 0.84	21 / 0.87	22 / 0.90	23 / 0.91	23 / 0.93	24 / 0.95	25 / 0.97	25 / 0.99	25 / 1.00
	59,900	30th	-	-	-	8 / 0.36	10 / 0.44	12 / 0.52	14 / 0.57	16 / 0.62	17 / 0.66	19 / 0.70	20 / 0.74	21 / 0.77	23 / 0.80	25 / 0.83	26 / 0.87	27 / 0.89	27 / 0.91	28 / 0.93	30 / 0.96	30 / 0.98	30 / 1.00
	65,100	35th	-	-	-	-	11 / 0.38	14 / 0.46	16 / 0.51	18 / 0.56	20 / 0.61	21 / 0.65	23 / 0.69	24 / 0.73	26 / 0.76	28 / 0.80	30 / 0.84	31 / 0.86	32 / 0.89	33 / 0.92	35 / 0.95	35 / 0.98	35 / 0.99
	70,700	40th	-	-	-	-	12 / 0.33	14 / 0.40	17 / 0.46	19 / 0.51	21 / 0.55	23 / 0.60	25 / 0.64	26 / 0.69	28 / 0.71	31 / 0.76	33 / 0.80	35 / 0.83	36 / 0.87	37 / 0.90	39 / 0.94	40 / 0.97	40 / 0.99
	79,100	45th	-	-	-	-	-	-	19 / 0.37	21 / 0.42	23 / 0.47	25 / 0.51	27 / 0.56	29 / 0.61	32 / 0.64	34 / 0.69	37 / 0.74	38 / 0.78	40 / 0.82	41 / 0.86	43 / 0.91	44 / 0.96	45 / 0.99
	89,100	50th	-	-	-	-	-	-	-	-	26 / 0.37	27 / 0.41	29 / 0.45	32 / 0.50	34 / 0.54	38 / 0.60	40 / 0.66	42 / 0.69	44 / 0.75	45 / 0.81	47 / 0.87	49 / 0.94	50 / 0.99
	101,500	55th	-	-	-	-	-	-	-	-	-	-	32 / 0.33	35 / 0.38	37 / 0.41	41 / 0.47	44 / 0.53	46 / 0.58	48 / 0.64	50 / 0.71	52 / 0.80	54 / 0.90	55 / 0.98
	110,000	60th	-	-	-	-	-	-	-	-	-	-	-	-	-	44 / 0.38	48 / 0.44	50 / 0.49	52 / 0.56	54 / 0.64	57 / 0.74	59 / 0.86	60 / 0.97
	122,500	65th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53 / 0.36	56 / 0.43	58 / 0.51	61 / 0.62	64 / 0.78	65 / 0.95
	132,400	70th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60 / 0.33	63 / 0.41	66 / 0.52	68 / 0.70	70 / 0.92
	142,700	75th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71 / 0.41	73 / 0.61	75 / 0.88
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78 / 0.43	80 / 0.78
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.59
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 68. Occurrence (percentiles) and Event Probability of Drought Scenario 12 and Model Period D of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 12, Model Period D			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	-	0 / 0.62	0 / 0.79	0 / 0.84	0 / 0.88	0 / 0.91	0 / 0.92	0 / 0.94	0 / 0.95	0 / 0.95	0 / 0.96	0 / 0.97	0 / 0.97	0 / 0.98	0 / 0.98	0 / 0.98	0 / 0.99	0 / 0.99	0 / 0.99	0 / 1.00	0 / 1.00
	15,300	5th	-	0 / 0.51	2 / 0.71	2 / 0.78	2 / 0.83	3 / 0.86	4 / 0.89	4 / 0.90	4 / 0.92	4 / 0.93	5 / 0.94	5 / 0.95	5 / 0.96	5 / 0.97	5 / 0.97	5 / 0.98	5 / 0.98	5 / 0.99	5 / 0.99	5 / 1.00	5 / 1.00
	30,700	10th	-	2 / 0.36	4 / 0.56	4 / 0.65	5 / 0.72	6 / 0.77	7 / 0.81	7 / 0.83	8 / 0.86	8 / 0.88	8 / 0.90	9 / 0.91	9 / 0.92	10 / 0.94	10 / 0.95	10 / 0.96	10 / 0.97	10 / 0.98	10 / 0.98	10 / 0.99	10 / 1.00
	40,400	15th	-	-	4 / 0.46	5 / 0.55	7 / 0.63	8 / 0.70	9 / 0.74	10 / 0.77	11 / 0.80	11 / 0.83	12 / 0.85	13 / 0.87	14 / 0.89	14 / 0.91	15 / 0.93	15 / 0.94	15 / 0.95	15 / 0.96	15 / 0.98	15 / 0.99	15 / 1.00
	45,800	20th	-	-	5 / 0.41	6 / 0.50	8 / 0.58	9 / 0.65	11 / 0.69	12 / 0.73	13 / 0.77	14 / 0.80	15 / 0.82	15 / 0.85	17 / 0.86	18 / 0.89	19 / 0.91	19 / 0.92	19 / 0.94	19 / 0.96	20 / 0.97	20 / 0.99	20 / 1.00
	52,900	25th	-	-	6 / 0.34	7 / 0.43	8 / 0.50	10 / 0.58	12 / 0.63	14 / 0.67	15 / 0.71	15 / 0.74	17 / 0.78	18 / 0.81	20 / 0.83	21 / 0.86	22 / 0.88	23 / 0.90	23 / 0.92	24 / 0.94	25 / 0.96	25 / 0.98	25 / 1.00
	59,900	30th	-	-	-	8 / 0.36	10 / 0.43	12 / 0.51	14 / 0.56	16 / 0.60	17 / 0.65	19 / 0.69	20 / 0.72	21 / 0.76	23 / 0.78	25 / 0.82	26 / 0.85	27 / 0.87	27 / 0.90	28 / 0.92	30 / 0.95	30 / 0.98	30 / 0.99
	65,100	35th	-	-	-	-	11 / 0.38	14 / 0.45	16 / 0.51	18 / 0.55	20 / 0.60	21 / 0.64	23 / 0.68	24 / 0.72	26 / 0.74	28 / 0.79	30 / 0.82	31 / 0.85	32 / 0.88	33 / 0.91	35 / 0.94	35 / 0.97	35 / 0.99
	70,700	40th	-	-	-	-	12 / 0.33	14 / 0.40	17 / 0.45	19 / 0.50	21 / 0.54	23 / 0.58	25 / 0.63	26 / 0.67	28 / 0.70	31 / 0.74	33 / 0.79	35 / 0.81	36 / 0.85	37 / 0.89	39 / 0.92	40 / 0.96	40 / 0.99
	79,100	45th	-	-	-	-	-	-	19 / 0.37	21 / 0.41	23 / 0.46	25 / 0.50	27 / 0.54	29 / 0.59	32 / 0.62	34 / 0.67	37 / 0.72	38 / 0.76	40 / 0.80	41 / 0.85	43 / 0.90	44 / 0.95	45 / 0.99
	89,100	50th	-	-	-	-	-	-	-	-	26 / 0.36	27 / 0.40	29 / 0.44	32 / 0.49	34 / 0.52	38 / 0.58	40 / 0.63	42 / 0.67	44 / 0.73	45 / 0.79	47 / 0.85	49 / 0.92	50 / 0.98
	101,500	55th	-	-	-	-	-	-	-	-	-	-	32 / 0.32	35 / 0.37	37 / 0.39	41 / 0.45	44 / 0.51	46 / 0.55	48 / 0.62	50 / 0.69	52 / 0.78	54 / 0.88	55 / 0.97
	110,000	60th	-	-	-	-	-	-	-	-	-	-	-	-	-	44 / 0.37	48 / 0.42	50 / 0.47	52 / 0.53	54 / 0.61	57 / 0.71	59 / 0.84	60 / 0.96
	122,500	65th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53 / 0.35	56 / 0.41	58 / 0.49	61 / 0.59	64 / 0.75	65 / 0.93
	132,400	70th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63 / 0.39	66 / 0.49	68 / 0.67	70 / 0.90
	142,700	75th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71 / 0.39	73 / 0.57	75 / 0.86
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78 / 0.40	80 / 0.75
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.55
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 69. Occurrence (percentiles) and Event Probability of Drought Scenario 13 and Model Period D of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 13, Model Period D			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	-	0 / 0.63	0 / 0.77	0 / 0.82	0 / 0.86	0 / 0.89	0 / 0.90	0 / 0.92	0 / 0.93	0 / 0.94	0 / 0.95	0 / 0.95	0 / 0.96	0 / 0.97	0 / 0.97	0 / 0.98	0 / 0.98	0 / 0.99	0 / 0.99	0 / 0.99	0 / 1.00
	15,300	5th	-	0 / 0.52	2 / 0.69	2 / 0.75	2 / 0.80	3 / 0.84	4 / 0.86	4 / 0.88	4 / 0.89	4 / 0.91	5 / 0.92	5 / 0.93	5 / 0.94	5 / 0.95	5 / 0.96	5 / 0.96	5 / 0.97	5 / 0.98	5 / 0.98	5 / 0.99	5 / 1.00
	30,700	10th	-	2 / 0.36	4 / 0.54	4 / 0.61	5 / 0.68	6 / 0.73	7 / 0.76	7 / 0.79	8 / 0.82	8 / 0.84	8 / 0.86	9 / 0.88	9 / 0.89	10 / 0.91	10 / 0.92	10 / 0.93	10 / 0.94	10 / 0.96	10 / 0.97	10 / 0.98	10 / 1.00
	40,400	15th	-	-	4 / 0.44	5 / 0.52	7 / 0.58	8 / 0.64	9 / 0.68	10 / 0.72	11 / 0.75	11 / 0.77	12 / 0.80	13 / 0.82	14 / 0.84	14 / 0.86	15 / 0.89	15 / 0.90	15 / 0.92	15 / 0.94	15 / 0.96	15 / 0.98	15 / 0.99
	45,800	20th	-	-	5 / 0.38	6 / 0.46	8 / 0.53	9 / 0.59	11 / 0.63	12 / 0.67	13 / 0.70	14 / 0.73	15 / 0.76	15 / 0.79	17 / 0.81	18 / 0.84	19 / 0.86	19 / 0.88	19 / 0.90	19 / 0.92	20 / 0.95	20 / 0.97	20 / 0.99
	52,900	25th	-	-	6 / 0.32	7 / 0.39	8 / 0.45	10 / 0.52	12 / 0.56	14 / 0.60	15 / 0.64	15 / 0.67	17 / 0.70	18 / 0.74	20 / 0.76	21 / 0.79	22 / 0.82	23 / 0.84	23 / 0.87	24 / 0.90	25 / 0.93	25 / 0.96	25 / 0.99
	59,900	30th	-	-	-	8 / 0.32	10 / 0.38	12 / 0.45	14 / 0.49	16 / 0.53	17 / 0.57	19 / 0.61	20 / 0.64	21 / 0.68	23 / 0.70	25 / 0.74	26 / 0.78	27 / 0.80	27 / 0.84	28 / 0.87	30 / 0.91	30 / 0.95	30 / 0.99
	65,100	35th	-	-	-	-	11 / 0.33	14 / 0.39	16 / 0.44	18 / 0.48	20 / 0.52	21 / 0.55	23 / 0.59	24 / 0.63	26 / 0.65	28 / 0.70	30 / 0.74	31 / 0.77	32 / 0.80	33 / 0.84	35 / 0.89	35 / 0.94	35 / 0.98
	70,700	40th	-	-	-	-	12 / 0.28	14 / 0.34	17 / 0.38	19 / 0.42	21 / 0.46	23 / 0.50	25 / 0.53	26 / 0.57	28 / 0.60	31 / 0.65	33 / 0.69	35 / 0.72	36 / 0.77	37 / 0.81	39 / 0.86	40 / 0.92	40 / 0.98
	79,100	45th	-	-	-	-	-	-	19 / 0.30	21 / 0.34	23 / 0.37	25 / 0.41	27 / 0.45	29 / 0.49	32 / 0.51	34 / 0.56	37 / 0.61	38 / 0.65	40 / 0.70	41 / 0.75	43 / 0.82	44 / 0.89	45 / 0.97
	89,100	50th	-	-	-	-	-	-	-	-	26 / 0.28	27 / 0.32	29 / 0.35	32 / 0.39	34 / 0.41	38 / 0.46	40 / 0.51	42 / 0.55	44 / 0.61	45 / 0.67	47 / 0.75	49 / 0.85	50 / 0.95
	101,500	55th	-	-	-	-	-	-	-	-	-	-	-	-	37 / 0.30	41 / 0.34	44 / 0.39	46 / 0.42	48 / 0.48	50 / 0.55	52 / 0.64	54 / 0.77	55 / 0.92
	110,000	60th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48 / 0.31	50 / 0.34	52 / 0.39	54 / 0.46	57 / 0.55	59 / 0.70	60 / 0.89
	122,500	65th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58 / 0.34	61 / 0.42	64 / 0.58	65 / 0.84
	132,400	70th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66 / 0.33	68 / 0.48	70 / 0.77
	142,700	75th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73 / 0.38	75 / 0.69
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80 / 0.52
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.30
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 70. Occurrence (percentiles) and Event Probability of Drought Scenario 1 and Model Period G of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 1, Model Period G			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	-	0 / 0.58	0 / 0.75	0 / 0.80	0 / 0.84	0 / 0.88	0 / 0.89	0 / 0.91	0 / 0.92	0 / 0.93	0 / 0.94	0 / 0.95	0 / 0.96	0 / 0.96	0 / 0.97	0 / 0.97	0 / 0.98	0 / 0.98	0 / 0.99	0 / 0.99	0 / 1.00
	15,300	5th	-	0 / 0.46	2 / 0.64	2 / 0.71	2 / 0.77	3 / 0.81	4 / 0.84	4 / 0.86	4 / 0.88	4 / 0.89	5 / 0.91	5 / 0.92	5 / 0.93	5 / 0.94	5 / 0.95	5 / 0.96	5 / 0.97	5 / 0.98	5 / 0.98	5 / 0.99	5 / 1.00
	30,700	10th	-	2 / 0.30	4 / 0.48	4 / 0.56	5 / 0.62	6 / 0.68	7 / 0.72	7 / 0.76	8 / 0.78	8 / 0.81	8 / 0.83	9 / 0.85	9 / 0.87	10 / 0.89	10 / 0.91	10 / 0.92	10 / 0.94	10 / 0.95	10 / 0.97	10 / 0.98	10 / 1.00
	40,400	15th	-	-	4 / 0.37	5 / 0.45	7 / 0.52	8 / 0.58	9 / 0.63	10 / 0.67	11 / 0.70	11 / 0.73	12 / 0.76	13 / 0.79	14 / 0.81	14 / 0.84	15 / 0.87	15 / 0.88	15 / 0.91	15 / 0.93	15 / 0.95	15 / 0.97	15 / 0.99
	45,800	20th	-	-	5 / 0.31	6 / 0.39	8 / 0.46	9 / 0.52	11 / 0.57	12 / 0.61	13 / 0.65	14 / 0.68	15 / 0.72	15 / 0.75	17 / 0.77	18 / 0.81	19 / 0.84	19 / 0.86	19 / 0.88	19 / 0.91	20 / 0.94	20 / 0.97	20 / 0.99
	52,900	25th	-	-	6 / 0.25	7 / 0.32	8 / 0.38	10 / 0.44	12 / 0.49	14 / 0.53	15 / 0.57	15 / 0.61	17 / 0.65	18 / 0.68	20 / 0.71	21 / 0.75	22 / 0.79	23 / 0.81	23 / 0.85	24 / 0.88	25 / 0.92	25 / 0.95	25 / 0.99
	59,900	30th	-	-	-	8 / 0.25	10 / 0.31	12 / 0.37	14 / 0.41	16 / 0.45	17 / 0.50	19 / 0.53	20 / 0.57	21 / 0.61	23 / 0.64	25 / 0.69	26 / 0.73	27 / 0.76	27 / 0.80	28 / 0.84	30 / 0.89	30 / 0.94	30 / 0.98
	65,100	35th	-	-	-	-	11 / 0.26	14 / 0.32	16 / 0.36	18 / 0.40	20 / 0.44	21 / 0.48	23 / 0.51	24 / 0.56	26 / 0.58	28 / 0.63	30 / 0.68	31 / 0.71	32 / 0.76	33 / 0.81	35 / 0.86	35 / 0.92	35 / 0.98
	70,700	40th	-	-	-	-	-	14 / 0.26	17 / 0.30	19 / 0.34	21 / 0.38	23 / 0.41	25 / 0.45	26 / 0.49	28 / 0.52	31 / 0.57	33 / 0.62	35 / 0.66	36 / 0.71	37 / 0.77	39 / 0.83	40 / 0.90	40 / 0.97
	79,100	45th	-	-	-	-	-	-	-	21 / 0.26	23 / 0.29	25 / 0.33	27 / 0.36	29 / 0.40	32 / 0.43	34 / 0.48	37 / 0.53	38 / 0.57	40 / 0.63	41 / 0.69	43 / 0.77	44 / 0.87	45 / 0.96
	89,100	50th	-	-	-	-	-	-	-	-	-	-	29 / 0.26	32 / 0.30	34 / 0.32	38 / 0.37	40 / 0.42	42 / 0.46	44 / 0.52	45 / 0.59	47 / 0.68	49 / 0.80	50 / 0.94
	101,500	55th	-	-	-	-	-	-	-	-	-	-	-	-	-	41 / 0.25	44 / 0.29	46 / 0.33	48 / 0.38	50 / 0.45	52 / 0.55	54 / 0.70	55 / 0.90
	110,000	60th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50 / 0.25	52 / 0.30	54 / 0.36	57 / 0.45	59 / 0.62	60 / 0.86
	122,500	65th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58 / 0.24	61 / 0.32	64 / 0.48	65 / 0.78
	132,400	70th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68 / 0.37	70 / 0.69
	142,700	75th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73 / 0.27	75 / 0.59
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80 / 0.39
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 71. Occurrence (percentiles) and Event Probability of Drought Scenario 4 and Model Period G of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 4, Model Period G			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.85	0 / 0.92	0 / 0.94	0 / 0.94	0 / 0.95	0 / 0.95	0 / 0.96	0 / 0.96	0 / 0.96	0 / 0.96	0 / 0.96	0 / 0.97	0 / 0.97	0 / 0.97	0 / 0.97	0 / 0.97	0 / 0.98	0 / 0.98	0 / 0.98	0 / 0.99	0 / 0.99
	15,300	5th	0 / 0.81	0 / 0.90	2 / 0.92	2 / 0.93	2 / 0.93	3 / 0.94	4 / 0.94	4 / 0.95	4 / 0.95	4 / 0.95	5 / 0.95	5 / 0.96	5 / 0.96	5 / 0.96	5 / 0.96	5 / 0.97	5 / 0.97	5 / 0.97	5 / 0.98	5 / 0.98	5 / 0.99
	30,700	10th	-	2 / 0.85	4 / 0.88	4 / 0.90	5 / 0.91	6 / 0.91	7 / 0.92	7 / 0.92	8 / 0.93	8 / 0.93	8 / 0.93	9 / 0.94	9 / 0.94	10 / 0.94	10 / 0.95	10 / 0.95	10 / 0.96	10 / 0.96	10 / 0.96	10 / 0.97	10 / 0.98
	40,400	15th	-	2 / 0.82	4 / 0.86	5 / 0.87	7 / 0.88	8 / 0.89	9 / 0.90	10 / 0.90	11 / 0.91	11 / 0.91	12 / 0.92	13 / 0.92	14 / 0.93	14 / 0.93	15 / 0.94	15 / 0.94	15 / 0.94	15 / 0.95	15 / 0.96	15 / 0.96	15 / 0.98
	45,800	20th	-	3 / 0.80	5 / 0.84	6 / 0.86	8 / 0.87	9 / 0.88	11 / 0.89	12 / 0.89	13 / 0.90	14 / 0.90	15 / 0.91	15 / 0.91	17 / 0.92	18 / 0.92	19 / 0.93	19 / 0.93	19 / 0.94	19 / 0.94	20 / 0.95	20 / 0.96	20 / 0.98
	52,900	25th	-	3 / 0.77	6 / 0.82	7 / 0.83	8 / 0.85	10 / 0.86	12 / 0.87	14 / 0.87	15 / 0.88	15 / 0.89	17 / 0.89	18 / 0.90	20 / 0.90	21 / 0.91	22 / 0.91	23 / 0.92	23 / 0.93	24 / 0.93	25 / 0.94	25 / 0.95	25 / 0.97
	59,900	30th	-	-	6 / 0.79	8 / 0.81	10 / 0.82	12 / 0.84	14 / 0.85	16 / 0.85	17 / 0.86	19 / 0.87	20 / 0.87	21 / 0.88	23 / 0.89	25 / 0.89	26 / 0.90	27 / 0.90	27 / 0.91	28 / 0.92	30 / 0.93	30 / 0.94	30 / 0.97
	65,100	35th	-	-	6 / 0.77	9 / 0.79	11 / 0.80	14 / 0.82	16 / 0.83	18 / 0.84	20 / 0.84	21 / 0.85	23 / 0.86	24 / 0.87	26 / 0.87	28 / 0.88	30 / 0.89	31 / 0.89	32 / 0.90	33 / 0.91	35 / 0.92	35 / 0.94	35 / 0.96
	70,700	40th	-	-	-	-	12 / 0.78	14 / 0.80	17 / 0.81	19 / 0.82	21 / 0.83	23 / 0.83	25 / 0.84	26 / 0.85	28 / 0.85	31 / 0.86	33 / 0.87	35 / 0.88	36 / 0.89	37 / 0.90	39 / 0.91	40 / 0.93	40 / 0.96
	79,100	45th	-	-	-	-	-	-	19 / 0.77	21 / 0.78	23 / 0.79	25 / 0.80	27 / 0.81	29 / 0.82	32 / 0.83	34 / 0.84	37 / 0.85	38 / 0.86	40 / 0.87	41 / 0.88	43 / 0.89	44 / 0.91	45 / 0.95
	89,100	50th	-	-	-	-	-	-	-	-	-	-	29 / 0.77	32 / 0.78	34 / 0.79	38 / 0.80	40 / 0.81	42 / 0.82	44 / 0.83	45 / 0.85	47 / 0.87	49 / 0.89	50 / 0.93
	101,500	55th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46 / 0.77	48 / 0.79	50 / 0.80	52 / 0.83	54 / 0.86	55 / 0.91
	110,000	60th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54 / 0.77	57 / 0.79	59 / 0.83	60 / 0.89
	122,500	65th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64 / 0.78	65 / 0.86
	132,400	70th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70 / 0.82
	142,700	75th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75 / 0.78
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 72. Occurrence (percentiles) and Event Probability of Drought Scenario 7 and Model Period G of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 7, Model Period G			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 0.99	0 / 0.99	0 / 0.99	0 / 0.99	0 / 0.98	0 / 0.98	0 / 0.97	0 / 0.96	0 / 0.95	0 / 0.91	-	-
	15,300	5th	0 / 1.00	0 / 1.00	2 / 1.00	2 / 1.00	2 / 1.00	3 / 1.00	4 / 1.00	4 / 1.00	4 / 0.99	4 / 0.99	5 / 0.99	5 / 0.99	5 / 0.99	5 / 0.98	5 / 0.97	5 / 0.97	5 / 0.95	5 / 0.93	5 / 0.89	-	-
	30,700	10th	0 / 1.00	2 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	6 / 1.00	7 / 0.99	7 / 0.99	8 / 0.99	8 / 0.99	8 / 0.99	9 / 0.98	9 / 0.98	10 / 0.97	10 / 0.96	10 / 0.95	10 / 0.93	10 / 0.90	10 / 0.84	-	-
	40,400	15th	0 / 1.00	2 / 1.00	4 / 1.00	5 / 1.00	7 / 1.00	8 / 0.99	9 / 0.99	10 / 0.99	11 / 0.99	11 / 0.99	12 / 0.98	13 / 0.98	14 / 0.97	14 / 0.96	15 / 0.95	15 / 0.94	15 / 0.92	15 / 0.88	-	-	-
	45,800	20th	0 / 1.00	3 / 1.00	5 / 1.00	6 / 1.00	8 / 1.00	9 / 0.99	11 / 0.99	12 / 0.99	13 / 0.99	14 / 0.98	15 / 0.98	15 / 0.97	17 / 0.97	18 / 0.96	19 / 0.94	19 / 0.93	19 / 0.91	19 / 0.87	-	-	-
	52,900	25th	0 / 1.00	3 / 1.00	6 / 1.00	7 / 1.00	8 / 0.99	10 / 0.99	12 / 0.99	14 / 0.99	15 / 0.98	15 / 0.98	17 / 0.98	18 / 0.97	20 / 0.96	21 / 0.95	22 / 0.94	23 / 0.92	23 / 0.89	24 / 0.84	-	-	-
	59,900	30th	0 / 1.00	3 / 1.00	6 / 1.00	8 / 1.00	10 / 0.99	12 / 0.99	14 / 0.99	16 / 0.99	17 / 0.98	19 / 0.98	20 / 0.97	21 / 0.96	23 / 0.96	25 / 0.94	26 / 0.92	27 / 0.91	27 / 0.87	-	-	-	-
	65,100	35th	0 / 1.00	3 / 1.00	6 / 1.00	9 / 1.00	11 / 0.99	14 / 0.99	16 / 0.99	18 / 0.98	20 / 0.98	21 / 0.97	23 / 0.97	24 / 0.96	26 / 0.95	28 / 0.94	30 / 0.91	31 / 0.90	32 / 0.86	-	-	-	-
	70,700	40th	0 / 1.00	3 / 1.00	6 / 1.00	9 / 0.99	12 / 0.99	14 / 0.99	17 / 0.99	19 / 0.98	21 / 0.98	23 / 0.97	25 / 0.96	26 / 0.95	28 / 0.94	31 / 0.93	33 / 0.90	35 / 0.88	36 / 0.84	-	-	-	-
	79,100	45th	0 / 1.00	4 / 1.00	7 / 1.00	10 / 0.99	13 / 0.99	16 / 0.99	19 / 0.98	21 / 0.98	23 / 0.97	25 / 0.96	27 / 0.95	29 / 0.94	32 / 0.93	34 / 0.91	37 / 0.88	38 / 0.86	-	-	-	-	-
	89,100	50th	0 / 1.00	4 / 1.00	7 / 0.99	11 / 0.99	14 / 0.99	17 / 0.98	21 / 0.98	23 / 0.97	26 / 0.96	27 / 0.95	29 / 0.94	32 / 0.93	34 / 0.92	38 / 0.89	40 / 0.86	42 / 0.83	-	-	-	-	-
	101,500	55th	0 / 1.00	4 / 1.00	8 / 0.99	12 / 0.99	15 / 0.98	18 / 0.98	22 / 0.97	25 / 0.96	28 / 0.95	30 / 0.94	32 / 0.92	35 / 0.90	37 / 0.89	41 / 0.86	-	-	-	-	-	-	-
	110,000	60th	0 / 1.00	4 / 1.00	8 / 0.99	12 / 0.99	15 / 0.98	19 / 0.97	23 / 0.96	26 / 0.95	29 / 0.94	32 / 0.92	34 / 0.91	38 / 0.88	40 / 0.87	44 / 0.83	-	-	-	-	-	-	-
	122,500	65th	0 / 1.00	4 / 1.00	8 / 0.99	12 / 0.98	15 / 0.97	19 / 0.96	23 / 0.95	27 / 0.94	30 / 0.92	33 / 0.90	36 / 0.88	40 / 0.85	43 / 0.83	-	-	-	-	-	-	-	-
	132,400	70th	0 / 1.00	4 / 0.99	8 / 0.99	12 / 0.98	16 / 0.97	20 / 0.95	24 / 0.94	28 / 0.92	31 / 0.90	35 / 0.88	38 / 0.85	-	-	-	-	-	-	-	-	-	-
	142,700	75th	0 / 1.00	4 / 0.99	8 / 0.98	12 / 0.97	17 / 0.96	21 / 0.94	25 / 0.92	29 / 0.90	33 / 0.87	37 / 0.85	-	-	-	-	-	-	-	-	-	-	-
	160,200	80th	0 / 1.00	5 / 0.99	9 / 0.97	13 / 0.95	18 / 0.93	22 / 0.90	26 / 0.88	30 / 0.85	-	-	-	-	-	-	-	-	-	-	-	-	-
	182,500	85th	0 / 1.00	5 / 0.98	9 / 0.95	14 / 0.92	19 / 0.89	23 / 0.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	0 / 1.00	5 / 0.96	10 / 0.90	14 / 0.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	0 / 0.99	5 / 0.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 73. Occurrence (percentiles) and Event Probability of Drought Scenario 8 and Model Period G of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 8, Model Period G			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	-	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 0.99	0 / 0.98
	15,300	5th	-	0 / 1.00	2 / 1.00	2 / 1.00	2 / 1.00	3 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 0.99	5 / 0.99	5 / 0.97
	30,700	10th	-	2 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	6 / 1.00	7 / 1.00	7 / 1.00	8 / 1.00	8 / 1.00	8 / 1.00	9 / 1.00	9 / 1.00	10 / 1.00	10 / 1.00	10 / 1.00	10 / 0.99	10 / 0.99	10 / 0.99	10 / 0.98	10 / 0.94
	40,400	15th	-	-	4 / 1.00	5 / 1.00	7 / 1.00	8 / 1.00	9 / 1.00	10 / 1.00	11 / 1.00	11 / 1.00	12 / 1.00	13 / 1.00	14 / 1.00	14 / 0.99	15 / 0.99	15 / 0.99	15 / 0.99	15 / 0.99	15 / 0.98	15 / 0.97	15 / 0.91
	45,800	20th	-	-	5 / 1.00	6 / 1.00	8 / 1.00	9 / 1.00	11 / 1.00	12 / 1.00	13 / 1.00	14 / 1.00	15 / 1.00	15 / 0.99	17 / 0.99	18 / 0.99	19 / 0.99	19 / 0.99	19 / 0.99	19 / 0.98	20 / 0.98	20 / 0.96	20 / 0.89
	52,900	25th	-	-	6 / 1.00	7 / 1.00	8 / 1.00	10 / 1.00	12 / 1.00	14 / 1.00	15 / 1.00	15 / 0.99	17 / 0.99	18 / 0.99	20 / 0.99	21 / 0.99	22 / 0.99	23 / 0.99	23 / 0.98	24 / 0.98	25 / 0.97	25 / 0.95	25 / 0.85
	59,900	30th	-	-	-	8 / 1.00	10 / 1.00	12 / 1.00	14 / 1.00	16 / 0.99	17 / 0.99	19 / 0.99	20 / 0.99	21 / 0.99	23 / 0.99	25 / 0.99	26 / 0.98	27 / 0.98	27 / 0.98	28 / 0.97	30 / 0.96	30 / 0.93	30 / 0.81
	65,100	35th	-	-	-	-	11 / 1.00	14 / 1.00	16 / 0.99	18 / 0.99	20 / 0.99	21 / 0.99	23 / 0.99	24 / 0.99	26 / 0.99	28 / 0.98	30 / 0.98	31 / 0.98	32 / 0.97	33 / 0.97	35 / 0.95	35 / 0.92	35 / 0.77
	70,700	40th	-	-	-	-	12 / 1.00	14 / 0.99	17 / 0.99	19 / 0.99	21 / 0.99	23 / 0.99	25 / 0.99	26 / 0.98	28 / 0.98	31 / 0.98	33 / 0.98	35 / 0.97	36 / 0.97	37 / 0.96	39 / 0.94	40 / 0.90	40 / 0.73
	79,100	45th	-	-	-	-	-	-	19 / 0.99	21 / 0.99	23 / 0.99	25 / 0.98	27 / 0.98	29 / 0.98	32 / 0.98	34 / 0.97	37 / 0.97	38 / 0.96	40 / 0.95	41 / 0.94	43 / 0.92	44 / 0.86	45 / 0.65
	89,100	50th	-	-	-	-	-	-	-	-	26 / 0.98	27 / 0.98	29 / 0.97	32 / 0.97	34 / 0.96	38 / 0.96	40 / 0.95	42 / 0.94	44 / 0.93	45 / 0.91	47 / 0.88	49 / 0.80	50 / 0.54
	101,500	55th	-	-	-	-	-	-	-	-	-	-	-	-	37 / 0.94	41 / 0.93	44 / 0.91	46 / 0.90	48 / 0.88	50 / 0.85	52 / 0.81	54 / 0.70	55 / 0.41
	110,000	60th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48 / 0.88	50 / 0.87	52 / 0.84	54 / 0.80	57 / 0.74	59 / 0.62	60 / 0.33
	122,500	65th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58 / 0.70	61 / 0.63	64 / 0.48	65 / 0.22
	132,400	70th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66 / 0.52	68 / 0.38	70 / 0.16
	142,700	75th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73 / 0.28	75 / 0.11
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.02
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 74. Occurrence (percentiles) and Event Probability of Drought Scenario 9 and Model Period G of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Occurrence of Threshold Combinations / EP of Drought Scenario 9, Model Period G			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	-	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 1.00	0 / 0.99	0 / 0.98
	15,300	5th	-	0 / 1.00	2 / 1.00	2 / 1.00	2 / 1.00	3 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 1.00	5 / 0.99	5 / 0.99	5 / 0.99	5 / 0.96
	30,700	10th	-	2 / 1.00	4 / 1.00	4 / 1.00	5 / 1.00	6 / 1.00	7 / 1.00	7 / 1.00	8 / 1.00	8 / 1.00	8 / 1.00	9 / 1.00	9 / 1.00	10 / 1.00	10 / 0.99	10 / 0.99	10 / 0.99	10 / 0.99	10 / 0.99	10 / 0.98	10 / 0.94
	40,400	15th	-	-	4 / 1.00	5 / 1.00	7 / 1.00	8 / 1.00	9 / 1.00	10 / 1.00	11 / 1.00	11 / 1.00	12 / 1.00	13 / 0.99	14 / 0.99	14 / 0.99	15 / 0.99	15 / 0.99	15 / 0.99	15 / 0.99	15 / 0.98	15 / 0.97	15 / 0.91
	45,800	20th	-	-	5 / 1.00	6 / 1.00	8 / 1.00	9 / 1.00	11 / 1.00	12 / 1.00	13 / 1.00	14 / 0.99	15 / 0.99	15 / 0.99	17 / 0.99	18 / 0.99	19 / 0.99	19 / 0.99	19 / 0.99	19 / 0.98	20 / 0.98	20 / 0.96	20 / 0.89
	52,900	25th	-	-	6 / 1.00	7 / 1.00	8 / 1.00	10 / 1.00	12 / 1.00	14 / 0.99	15 / 0.99	15 / 0.99	17 / 0.99	18 / 0.99	20 / 0.99	21 / 0.99	22 / 0.99	23 / 0.98	23 / 0.98	24 / 0.98	25 / 0.97	25 / 0.95	25 / 0.85
	59,900	30th	-	-	-	8 / 1.00	10 / 1.00	12 / 0.99	14 / 0.99	16 / 0.99	17 / 0.99	19 / 0.99	20 / 0.99	21 / 0.99	23 / 0.99	25 / 0.98	26 / 0.98	27 / 0.98	27 / 0.97	28 / 0.97	30 / 0.96	30 / 0.93	30 / 0.81
	65,100	35th	-	-	-	-	11 / 0.99	14 / 0.99	16 / 0.99	18 / 0.99	20 / 0.99	21 / 0.99	23 / 0.99	24 / 0.98	26 / 0.98	28 / 0.98	30 / 0.98	31 / 0.97	32 / 0.97	33 / 0.96	35 / 0.95	35 / 0.91	35 / 0.78
	70,700	40th	-	-	-	-	-	14 / 0.99	17 / 0.99	19 / 0.99	21 / 0.99	23 / 0.99	25 / 0.98	26 / 0.98	28 / 0.98	31 / 0.98	33 / 0.97	35 / 0.97	36 / 0.96	37 / 0.95	39 / 0.93	40 / 0.89	40 / 0.73
	79,100	45th	-	-	-	-	-	-	-	21 / 0.98	23 / 0.98	25 / 0.98	27 / 0.98	29 / 0.97	32 / 0.97	34 / 0.97	37 / 0.96	38 / 0.95	40 / 0.95	41 / 0.93	43 / 0.91	44 / 0.85	45 / 0.66
	89,100	50th	-	-	-	-	-	-	-	-	-	-	29 / 0.97	32 / 0.96	34 / 0.96	38 / 0.95	40 / 0.94	42 / 0.93	44 / 0.92	45 / 0.90	47 / 0.87	49 / 0.79	50 / 0.56
	101,500	55th	-	-	-	-	-	-	-	-	-	-	-	-	-	41 / 0.92	44 / 0.90	46 / 0.89	48 / 0.87	50 / 0.84	52 / 0.80	54 / 0.70	55 / 0.44
	110,000	60th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50 / 0.85	52 / 0.83	54 / 0.79	57 / 0.74	59 / 0.62	60 / 0.35
	122,500	65th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58 / 0.70	61 / 0.62	64 / 0.49	65 / 0.25
	132,400	70th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68 / 0.39	70 / 0.18
	142,700	75th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73 / 0.30	75 / 0.12
	160,200	80th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80 / 0.06
	182,500	85th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	214,800	90th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lugert-Altus Reservoir

Mean Squared Error Results – Model Period A (1926-2016)

Table 75. Percent Drought Prediction and MSE of Drought Scenario 1 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 1			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	7,300	0th	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42	0 / 0.42
	18,100	5th	0 / 0.42	3 / 0.42	4 / 0.42	4 / 0.42	4 / 0.42	5 / 0.41	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42	5 / 0.42
	24,600	10th	3 / 0.42	5 / 0.42	6 / 0.41	6 / 0.41	7 / 0.41	8 / 0.41	8 / 0.41	8 / 0.41	9 / 0.41	9 / 0.41	9 / 0.41	9 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41
	28,600	15th	4 / 0.42	5 / 0.42	7 / 0.41	7 / 0.41	9 / 0.41	10 / 0.41	12 / 0.4	12 / 0.4	12 / 0.4	12 / 0.4	13 / 0.4	14 / 0.4	14 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4
	33,000	20th	4 / 0.42	6 / 0.42	7 / 0.42	9 / 0.41	11 / 0.41	13 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	17 / 0.39	17 / 0.39	18 / 0.39	19 / 0.39	19 / 0.39	19 / 0.39	19 / 0.39	20 / 0.39	20 / 0.39	20 / 0.39	20 / 0.39	20 / 0.39
	36,300	25th	4 / 0.42	6 / 0.42	9 / 0.41	11 / 0.4	12 / 0.4	15 / 0.4	16 / 0.4	16 / 0.4	17 / 0.39	17 / 0.39	19 / 0.39	20 / 0.38	21 / 0.38	22 / 0.38	23 / 0.37	23 / 0.38	24 / 0.37	25 / 0.37	25 / 0.37	25 / 0.37	25 / 0.37	25 / 0.37
	39,700	30th	4 / 0.42	7 / 0.42	10 / 0.41	12 / 0.4	15 / 0.39	18 / 0.38	19 / 0.38	20 / 0.38	20 / 0.38	21 / 0.37	23 / 0.37	23 / 0.37	25 / 0.36	26 / 0.36	26 / 0.36	27 / 0.36	28 / 0.36	29 / 0.35	30 / 0.35	30 / 0.35	30 / 0.35	30 / 0.35
	44,000	35th	4 / 0.42	9 / 0.41	11 / 0.4	14 / 0.39	17 / 0.38	20 / 0.37	22 / 0.37	22 / 0.37	23 / 0.37	24 / 0.36	26 / 0.36	27 / 0.35	28 / 0.35	29 / 0.35	31 / 0.34	32 / 0.34	33 / 0.33	34 / 0.33	35 / 0.33	35 / 0.33	35 / 0.33	35 / 0.33
	48,500	40th	4 / 0.42	10 / 0.41	12 / 0.4	16 / 0.38	19 / 0.38	22 / 0.37	24 / 0.36	24 / 0.36	25 / 0.36	26 / 0.36	28 / 0.35	30 / 0.34	31 / 0.34	33 / 0.33	35 / 0.33	36 / 0.32	37 / 0.32	38 / 0.31	39 / 0.31	40 / 0.3	40 / 0.3	
	54,800	45th	4 / 0.42	14 / 0.39	17 / 0.37	21 / 0.37	23 / 0.36	26 / 0.35	28 / 0.35	29 / 0.34	29 / 0.34	30 / 0.34	32 / 0.33	33 / 0.33	36 / 0.32	37 / 0.31	39 / 0.3	40 / 0.3	41 / 0.3	43 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	
	58,200	50th	4 / 0.42	15 / 0.38	17 / 0.37	23 / 0.36	24 / 0.35	29 / 0.34	32 / 0.33	33 / 0.33	35 / 0.32	35 / 0.32	36 / 0.32	37 / 0.31	39 / 0.3	41 / 0.29	43 / 0.29	44 / 0.28	45 / 0.28	47 / 0.27	48 / 0.26	49 / 0.26	50 / 0.25	
	63,400	55th	7 / 0.41	16 / 0.39	19 / 0.37	24 / 0.36	28 / 0.34	33 / 0.33	35 / 0.32	36 / 0.32	38 / 0.31	38 / 0.31	39 / 0.31	41 / 0.29	42 / 0.29	44 / 0.28	47 / 0.27	49 / 0.26	49 / 0.26	51 / 0.24	52 / 0.24	54 / 0.23	55 / 0.22	
	67,800	60th	7 / 0.41	22 / 0.36	25 / 0.34	30 / 0.33	33 / 0.32	40 / 0.3	42 / 0.29	44 / 0.28	44 / 0.28	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	50 / 0.25	53 / 0.23	54 / 0.23	56 / 0.22	57 / 0.21	58 / 0.21	59 / 0.2	60 / 0.19	
	72,200	65th	7 / 0.41	22 / 0.36	25 / 0.34	33 / 0.32	37 / 0.3	42 / 0.29	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	52 / 0.24	54 / 0.23	57 / 0.22	58 / 0.21	61 / 0.2	62 / 0.2	63 / 0.19	64 / 0.18	65 / 0.18	
	79,200	70th	7 / 0.41	24 / 0.34	27 / 0.32	34 / 0.31	40 / 0.29	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.24	53 / 0.24	54 / 0.24	56 / 0.23	59 / 0.22	-	-	65 / 0.19	66 / 0.19	68 / 0.18	69 / 0.18	70 / 0.17	
	85,500	75th	7 / 0.41	29 / 0.32	34 / 0.3	41 / 0.28	49 / 0.25	53 / 0.24	54 / 0.24	56 / 0.23	58 / 0.22	58 / 0.22	-	-	-	-	-	-	-	-	73 / 0.18	74 / 0.18	75 / 0.17	
	96,200	80th	10 / 0.38	34 / 0.3	40 / 0.28	48 / 0.26	55 / 0.24	59 / 0.22	60 / 0.22	63 / 0.21	-	-	-	-	-	-	-	-	-	-	-	80 / 0.19	80 / 0.19	
	107,800	85th	10 / 0.38	40 / 0.28	49 / 0.25	56 / 0.23	65 / 0.22	68 / 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.23	
	120,800	90th	12 / 0.35	47 / 0.26	56 / 0.24	60 / 0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	171,000	95th	32 / 0.29	56 / 0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	317,000	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 76. Percent Drought Prediction and MSE of Drought Scenario 3 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 3			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52	0 / 0.52
	15,300	5th	0 / 0.52	3 / 0.52	4 / 0.51	4 / 0.51	4 / 0.52	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51	5 / 0.51
	30,700	10th	3 / 0.52	5 / 0.51	6 / 0.51	6 / 0.51	7 / 0.51	8 / 0.5	8 / 0.51	8 / 0.51	9 / 0.5	9 / 0.5	9 / 0.5	9 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5
	40,400	15th	4 / 0.51	5 / 0.52	7 / 0.51	7 / 0.51	9 / 0.5	10 / 0.49	12 / 0.48	12 / 0.48	12 / 0.48	12 / 0.48	13 / 0.47	14 / 0.47	14 / 0.47	15 / 0.46	15 / 0.46	15 / 0.46	15 / 0.46	15 / 0.46	15 / 0.46	15 / 0.46	15 / 0.46	15 / 0.46
	45,800	20th	4 / 0.51	6 / 0.51	7 / 0.51	9 / 0.5	11 / 0.48	13 / 0.47	15 / 0.46	15 / 0.46	15 / 0.46	15 / 0.46	17 / 0.45	17 / 0.45	18 / 0.44	19 / 0.43	19 / 0.43	19 / 0.43	19 / 0.43	20 / 0.42	20 / 0.42	20 / 0.42	20 / 0.42	20 / 0.42
	52,900	25th	4 / 0.51	6 / 0.52	9 / 0.5	11 / 0.48	12 / 0.48	15 / 0.46	16 / 0.46	16 / 0.46	17 / 0.45	17 / 0.45	19 / 0.44	20 / 0.43	21 / 0.42	22 / 0.42	23 / 0.41	23 / 0.41	24 / 0.4	25 / 0.4	25 / 0.4	25 / 0.4	25 / 0.4	
	59,900	30th	4 / 0.51	7 / 0.51	10 / 0.5	12 / 0.48	15 / 0.47	18 / 0.45	19 / 0.45	20 / 0.44	20 / 0.44	21 / 0.43	23 / 0.42	23 / 0.42	25 / 0.4	26 / 0.39	26 / 0.39	27 / 0.39	28 / 0.38	29 / 0.38	30 / 0.37	30 / 0.37	30 / 0.37	
	65,100	35th	4 / 0.51	9 / 0.5	11 / 0.49	14 / 0.46	17 / 0.45	20 / 0.43	22 / 0.42	22 / 0.42	23 / 0.41	24 / 0.4	26 / 0.39	27 / 0.39	28 / 0.38	29 / 0.37	31 / 0.36	32 / 0.36	33 / 0.35	34 / 0.34	35 / 0.34	35 / 0.34	35 / 0.34	
	70,700	40th	4 / 0.51	10 / 0.49	12 / 0.48	16 / 0.45	19 / 0.44	22 / 0.41	24 / 0.4	24 / 0.41	25 / 0.4	26 / 0.39	28 / 0.38	30 / 0.37	31 / 0.36	33 / 0.34	35 / 0.33	36 / 0.33	37 / 0.32	38 / 0.32	39 / 0.31	40 / 0.3	40 / 0.3	
	79,100	45th	4 / 0.51	14 / 0.47	17 / 0.45	21 / 0.43	23 / 0.42	26 / 0.39	28 / 0.38	29 / 0.37	29 / 0.37	30 / 0.36	32 / 0.35	33 / 0.35	36 / 0.32	37 / 0.32	39 / 0.31	40 / 0.3	41 / 0.3	43 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	
	89,100	50th	4 / 0.51	15 / 0.46	17 / 0.45	23 / 0.41	24 / 0.41	29 / 0.38	32 / 0.36	33 / 0.35	35 / 0.34	35 / 0.34	36 / 0.33	37 / 0.32	39 / 0.31	41 / 0.29	43 / 0.28	44 / 0.28	45 / 0.28	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	
	101,500	55th	7 / 0.51	16 / 0.46	19 / 0.44	24 / 0.41	28 / 0.38	33 / 0.34	35 / 0.33	36 / 0.33	38 / 0.31	38 / 0.31	39 / 0.31	41 / 0.29	42 / 0.29	44 / 0.28	47 / 0.26	49 / 0.25	49 / 0.25	51 / 0.25	52 / 0.24	54 / 0.23	55 / 0.23	
	110,000	60th	7 / 0.51	22 / 0.43	25 / 0.41	30 / 0.38	33 / 0.36	40 / 0.31	42 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	46 / 0.27	47 / 0.26	48 / 0.26	50 / 0.25	53 / 0.24	54 / 0.23	56 / 0.23	57 / 0.22	58 / 0.22	59 / 0.22	60 / 0.21	
	122,500	65th	7 / 0.51	22 / 0.43	25 / 0.41	33 / 0.36	37 / 0.33	42 / 0.29	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	52 / 0.24	54 / 0.24	57 / 0.23	58 / 0.22	61 / 0.22	62 / 0.22	63 / 0.22	64 / 0.21	65 / 0.21	
	132,400	70th	7 / 0.51	24 / 0.41	27 / 0.4	34 / 0.35	40 / 0.31	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.24	53 / 0.24	54 / 0.24	56 / 0.23	59 / 0.22	-	-	65 / 0.22	66 / 0.22	68 / 0.22	69 / 0.22	70 / 0.22	
	142,700	75th	7 / 0.51	29 / 0.39	34 / 0.36	41 / 0.31	49 / 0.26	53 / 0.24	54 / 0.23	56 / 0.22	58 / 0.22	58 / 0.22	-	-	-	-	-	-	-	-	73 / 0.23	74 / 0.23	75 / 0.23	
	160,200	80th	10 / 0.49	34 / 0.35	40 / 0.31	48 / 0.26	55 / 0.23	59 / 0.22	60 / 0.22	63 / 0.21	-	-	-	-	-	-	-	-	-	-	-	80 / 0.26	80 / 0.26	
	182,500	85th	10 / 0.49	40 / 0.31	49 / 0.26	56 / 0.22	65 / 0.19	68 / 0.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.29	
	214,800	90th	12 / 0.46	47 / 0.27	56 / 0.22	60 / 0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.33	56 / 0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 77. Percent Drought Prediction and MSE of Drought Scenario 4 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 4			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38	0 / 0.38
	15,300	5th	0 / 0.38	3 / 0.38	4 / 0.38	4 / 0.38	4 / 0.38	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37	5 / 0.37
	30,700	10th	3 / 0.39	5 / 0.38	6 / 0.38	6 / 0.39	7 / 0.38	8 / 0.37	8 / 0.38	8 / 0.38	9 / 0.37	9 / 0.37	9 / 0.37	9 / 0.38	10 / 0.37	10 / 0.38	10 / 0.38	10 / 0.38	10 / 0.38	10 / 0.38	10 / 0.38	10 / 0.38	10 / 0.38	10 / 0.38
	40,400	15th	4 / 0.38	5 / 0.39	7 / 0.38	7 / 0.39	9 / 0.38	10 / 0.38	12 / 0.37	12 / 0.37	12 / 0.38	12 / 0.38	13 / 0.37	14 / 0.37	14 / 0.38	15 / 0.37	15 / 0.37	15 / 0.37	15 / 0.37	15 / 0.37	15 / 0.37	15 / 0.37	15 / 0.37	15 / 0.37
	45,800	20th	4 / 0.38	6 / 0.39	7 / 0.39	9 / 0.39	11 / 0.38	13 / 0.38	15 / 0.37	15 / 0.37	15 / 0.37	15 / 0.38	17 / 0.37	17 / 0.37	18 / 0.37	19 / 0.37	19 / 0.37	19 / 0.37	19 / 0.37	20 / 0.36	20 / 0.36	20 / 0.36	20 / 0.36	20 / 0.36
	52,900	25th	4 / 0.38	6 / 0.39	9 / 0.39	11 / 0.38	12 / 0.38	15 / 0.38	16 / 0.37	16 / 0.38	17 / 0.37	17 / 0.37	19 / 0.37	20 / 0.36	21 / 0.36	22 / 0.36	23 / 0.35	23 / 0.36	24 / 0.35	25 / 0.34	25 / 0.34	25 / 0.35	25 / 0.35	25 / 0.35
	59,900	30th	4 / 0.38	7 / 0.39	10 / 0.39	12 / 0.39	15 / 0.37	18 / 0.37	19 / 0.37	20 / 0.37	20 / 0.37	21 / 0.36	23 / 0.36	23 / 0.36	25 / 0.35	26 / 0.35	26 / 0.35	27 / 0.35	28 / 0.34	29 / 0.33	30 / 0.33	30 / 0.33	30 / 0.33	30 / 0.33
	65,100	35th	4 / 0.38	9 / 0.39	11 / 0.38	14 / 0.38	17 / 0.37	20 / 0.36	22 / 0.36	22 / 0.36	23 / 0.36	24 / 0.35	26 / 0.35	27 / 0.34	28 / 0.34	29 / 0.34	31 / 0.33	32 / 0.33	33 / 0.32	34 / 0.32	35 / 0.31	35 / 0.31	35 / 0.31	35 / 0.31
	70,700	40th	4 / 0.38	10 / 0.38	12 / 0.38	16 / 0.37	19 / 0.36	22 / 0.36	24 / 0.35	24 / 0.36	25 / 0.35	26 / 0.35	28 / 0.34	30 / 0.33	31 / 0.33	33 / 0.32	35 / 0.32	36 / 0.31	37 / 0.31	38 / 0.3	39 / 0.3	40 / 0.29	40 / 0.29	40 / 0.29
	79,100	45th	4 / 0.38	14 / 0.38	17 / 0.37	21 / 0.36	23 / 0.35	26 / 0.35	28 / 0.34	29 / 0.34	29 / 0.34	30 / 0.34	32 / 0.33	33 / 0.33	36 / 0.31	37 / 0.31	39 / 0.3	40 / 0.3	41 / 0.29	43 / 0.28	44 / 0.28	44 / 0.28	45 / 0.27	
	89,100	50th	4 / 0.38	15 / 0.38	17 / 0.38	23 / 0.35	24 / 0.35	29 / 0.34	32 / 0.33	33 / 0.33	35 / 0.32	35 / 0.32	36 / 0.32	37 / 0.31	39 / 0.3	41 / 0.29	43 / 0.29	44 / 0.28	45 / 0.28	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	
	101,500	55th	7 / 0.39	16 / 0.38	19 / 0.37	24 / 0.35	28 / 0.34	33 / 0.33	35 / 0.32	36 / 0.32	38 / 0.31	38 / 0.31	39 / 0.31	41 / 0.3	42 / 0.29	44 / 0.28	47 / 0.27	49 / 0.26	49 / 0.26	51 / 0.25	52 / 0.24	54 / 0.23	55 / 0.23	
	110,000	60th	7 / 0.39	22 / 0.37	25 / 0.36	30 / 0.34	33 / 0.33	40 / 0.3	42 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	46 / 0.27	47 / 0.27	48 / 0.26	50 / 0.25	53 / 0.23	54 / 0.23	56 / 0.22	57 / 0.22	58 / 0.21	59 / 0.21	60 / 0.21	
	122,500	65th	7 / 0.39	22 / 0.37	25 / 0.37	33 / 0.33	37 / 0.31	42 / 0.29	45 / 0.27	46 / 0.27	47 / 0.27	48 / 0.26	49 / 0.25	50 / 0.25	52 / 0.24	54 / 0.23	57 / 0.21	58 / 0.21	61 / 0.2	62 / 0.2	63 / 0.2	64 / 0.2	65 / 0.2	
	132,400	70th	7 / 0.39	24 / 0.37	27 / 0.36	34 / 0.33	40 / 0.3	45 / 0.28	48 / 0.26	50 / 0.25	51 / 0.24	52 / 0.24	53 / 0.24	54 / 0.23	56 / 0.22	59 / 0.21	-	-	65 / 0.19	66 / 0.18	68 / 0.18	69 / 0.18	70 / 0.18	
	142,700	75th	7 / 0.39	29 / 0.34	34 / 0.33	41 / 0.29	49 / 0.25	53 / 0.24	54 / 0.23	56 / 0.22	58 / 0.21	58 / 0.21	-	-	-	-	-	-	-	73 / 0.17	74 / 0.18	75 / 0.18		
	160,200	80th	10 / 0.36	34 / 0.32	40 / 0.29	48 / 0.26	55 / 0.23	59 / 0.22	60 / 0.21	63 / 0.2	-	-	-	-	-	-	-	-	-	-	-	80 / 0.19	80 / 0.19	
	182,500	85th	10 / 0.36	40 / 0.29	49 / 0.25	56 / 0.23	65 / 0.2	68 / 0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.2	
	214,800	90th	12 / 0.34	47 / 0.26	56 / 0.23	60 / 0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.29	56 / 0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 78. Percent Drought Prediction and MSE of Drought Scenario 6 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 6			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46	0 / 0.46
	15,300	5th	0 / 0.46	3 / 0.45	4 / 0.44	4 / 0.45	4 / 0.45	5 / 0.44	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45	5 / 0.45
	30,700	10th	3 / 0.45	5 / 0.44	6 / 0.44	6 / 0.44	7 / 0.44	8 / 0.43	8 / 0.44	8 / 0.44	9 / 0.43	9 / 0.43	9 / 0.43	9 / 0.43	10 / 0.42	10 / 0.43	10 / 0.43	10 / 0.43	10 / 0.43	10 / 0.43	10 / 0.43	10 / 0.43	10 / 0.43	10 / 0.43
	40,400	15th	4 / 0.44	5 / 0.45	7 / 0.44	7 / 0.44	9 / 0.43	10 / 0.43	12 / 0.42	12 / 0.42	12 / 0.42	12 / 0.42	13 / 0.42	14 / 0.41	14 / 0.41	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4
	45,800	20th	4 / 0.44	6 / 0.44	7 / 0.45	9 / 0.44	11 / 0.43	13 / 0.43	15 / 0.41	15 / 0.41	15 / 0.41	15 / 0.42	17 / 0.4	17 / 0.4	18 / 0.39	19 / 0.38	19 / 0.38	19 / 0.39	19 / 0.39	20 / 0.38	20 / 0.38	20 / 0.38	20 / 0.38	20 / 0.38
	52,900	25th	4 / 0.44	6 / 0.44	9 / 0.43	11 / 0.43	12 / 0.42	15 / 0.41	16 / 0.42	16 / 0.42	17 / 0.41	17 / 0.41	19 / 0.4	20 / 0.39	21 / 0.38	22 / 0.38	23 / 0.37	23 / 0.37	24 / 0.36	25 / 0.35	25 / 0.35	25 / 0.35	25 / 0.35	25 / 0.35
	59,900	30th	4 / 0.44	7 / 0.44	10 / 0.44	12 / 0.43	15 / 0.41	18 / 0.4	19 / 0.4	20 / 0.39	20 / 0.39	21 / 0.39	23 / 0.38	23 / 0.38	25 / 0.36	26 / 0.36	26 / 0.36	27 / 0.35	28 / 0.35	29 / 0.34	30 / 0.33	30 / 0.33	30 / 0.33	30 / 0.33
	65,100	35th	4 / 0.44	9 / 0.44	11 / 0.44	14 / 0.42	17 / 0.41	20 / 0.4	22 / 0.38	22 / 0.39	23 / 0.38	24 / 0.38	26 / 0.37	27 / 0.36	28 / 0.36	29 / 0.35	31 / 0.34	32 / 0.33	33 / 0.33	34 / 0.32	35 / 0.31	35 / 0.31	35 / 0.31	35 / 0.31
	70,700	40th	4 / 0.44	10 / 0.43	12 / 0.43	16 / 0.42	19 / 0.4	22 / 0.39	24 / 0.38	24 / 0.38	25 / 0.38	26 / 0.37	28 / 0.36	30 / 0.35	31 / 0.35	33 / 0.33	35 / 0.32	36 / 0.32	37 / 0.31	38 / 0.3	39 / 0.3	40 / 0.29	40 / 0.29	40 / 0.29
	79,100	45th	4 / 0.44	14 / 0.42	17 / 0.41	21 / 0.41	23 / 0.39	26 / 0.38	28 / 0.37	29 / 0.36	29 / 0.36	30 / 0.36	32 / 0.35	33 / 0.34	36 / 0.32	37 / 0.31	39 / 0.3	40 / 0.3	41 / 0.29	43 / 0.28	44 / 0.27	44 / 0.27	45 / 0.27	
	89,100	50th	4 / 0.44	15 / 0.42	17 / 0.42	23 / 0.39	24 / 0.39	29 / 0.37	32 / 0.35	33 / 0.34	35 / 0.32	35 / 0.33	36 / 0.32	37 / 0.31	39 / 0.3	41 / 0.29	43 / 0.28	44 / 0.28	45 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	
	101,500	55th	7 / 0.43	16 / 0.42	19 / 0.41	24 / 0.39	28 / 0.37	33 / 0.35	35 / 0.33	36 / 0.33	38 / 0.31	38 / 0.31	39 / 0.31	41 / 0.29	42 / 0.29	44 / 0.28	47 / 0.26	49 / 0.25	49 / 0.25	51 / 0.25	52 / 0.24	54 / 0.24	55 / 0.23	
	110,000	60th	7 / 0.43	22 / 0.37	25 / 0.36	30 / 0.34	33 / 0.33	40 / 0.29	42 / 0.28	44 / 0.28	44 / 0.28	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	50 / 0.25	53 / 0.24	54 / 0.23	56 / 0.23	57 / 0.23	58 / 0.22	59 / 0.22	60 / 0.22	
	122,500	65th	7 / 0.43	22 / 0.37	25 / 0.36	33 / 0.32	37 / 0.3	42 / 0.28	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	52 / 0.24	54 / 0.24	57 / 0.23	58 / 0.22	61 / 0.22	62 / 0.22	63 / 0.22	64 / 0.22	65 / 0.22	
	132,400	70th	7 / 0.43	24 / 0.35	27 / 0.35	34 / 0.31	40 / 0.28	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.24	53 / 0.24	54 / 0.24	56 / 0.23	59 / 0.22	-	-	65 / 0.21	66 / 0.21	68 / 0.21	69 / 0.22	70 / 0.22	
	142,700	75th	7 / 0.43	29 / 0.33	34 / 0.32	41 / 0.28	49 / 0.25	53 / 0.24	54 / 0.24	56 / 0.23	58 / 0.23	58 / 0.23	-	-	-	-	-	-	-	-	73 / 0.22	74 / 0.22	75 / 0.23	
	160,200	80th	10 / 0.38	34 / 0.31	40 / 0.28	48 / 0.26	55 / 0.24	59 / 0.23	60 / 0.23	63 / 0.22	-	-	-	-	-	-	-	-	-	-	-	80 / 0.25	80 / 0.26	
	182,500	85th	10 / 0.38	40 / 0.28	49 / 0.25	56 / 0.24	65 / 0.24	68 / 0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.29	
	214,800	90th	12 / 0.36	47 / 0.26	56 / 0.24	60 / 0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.31	56 / 0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 79. Percent Drought Prediction and MSE of Drought Scenario 7 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 7			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37
	15,300	5th	0 / 0.37	3 / 0.38	4 / 0.38	4 / 0.38	4 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38	5 / 0.38
	30,700	10th	3 / 0.38	5 / 0.38	6 / 0.38	6 / 0.39	7 / 0.39	8 / 0.38	8 / 0.39	8 / 0.39	9 / 0.38	9 / 0.38	9 / 0.38	9 / 0.39	10 / 0.38	10 / 0.39	10 / 0.39	10 / 0.39	10 / 0.39	10 / 0.39	10 / 0.39	10 / 0.39	10 / 0.39	10 / 0.39
	40,400	15th	4 / 0.37	5 / 0.38	7 / 0.38	7 / 0.39	9 / 0.38	10 / 0.38	12 / 0.38	12 / 0.38	12 / 0.38	12 / 0.38	13 / 0.39	14 / 0.38	14 / 0.39	15 / 0.38	15 / 0.38	15 / 0.38	15 / 0.38	15 / 0.38	15 / 0.38	15 / 0.38	15 / 0.38	15 / 0.38
	45,800	20th	4 / 0.37	6 / 0.37	7 / 0.38	9 / 0.38	11 / 0.37	13 / 0.37	15 / 0.37	15 / 0.37	15 / 0.37	15 / 0.37	17 / 0.37	17 / 0.37	18 / 0.37	19 / 0.36	19 / 0.37	19 / 0.36	19 / 0.37	20 / 0.36	20 / 0.36	20 / 0.36	20 / 0.36	20 / 0.36
	52,900	25th	4 / 0.37	6 / 0.38	9 / 0.37	11 / 0.37	12 / 0.37	15 / 0.36	16 / 0.36	16 / 0.37	17 / 0.36	17 / 0.36	19 / 0.36	20 / 0.36	21 / 0.36	22 / 0.36	23 / 0.35	23 / 0.35	24 / 0.35	25 / 0.34	25 / 0.35	25 / 0.35	25 / 0.35	25 / 0.35
	59,900	30th	4 / 0.37	7 / 0.38	10 / 0.36	12 / 0.36	15 / 0.36	18 / 0.35	19 / 0.36	20 / 0.35	20 / 0.36	21 / 0.35	23 / 0.35	23 / 0.35	25 / 0.34	26 / 0.34	26 / 0.34	27 / 0.34	28 / 0.34	29 / 0.33	30 / 0.33	30 / 0.33	30 / 0.33	30 / 0.33
	65,100	35th	4 / 0.37	9 / 0.38	11 / 0.36	14 / 0.36	17 / 0.36	20 / 0.35	22 / 0.35	22 / 0.35	23 / 0.35	24 / 0.35	26 / 0.34	27 / 0.34	28 / 0.34	29 / 0.34	31 / 0.32	32 / 0.32	33 / 0.32	34 / 0.32	35 / 0.31	35 / 0.31	35 / 0.31	35 / 0.31
	70,700	40th	4 / 0.37	10 / 0.37	12 / 0.36	16 / 0.35	19 / 0.35	22 / 0.35	24 / 0.34	24 / 0.35	25 / 0.35	26 / 0.34	28 / 0.34	30 / 0.33	31 / 0.33	33 / 0.32	35 / 0.31	36 / 0.31	37 / 0.31	38 / 0.3	39 / 0.3	40 / 0.29	40 / 0.29	40 / 0.29
	79,100	45th	4 / 0.37	14 / 0.38	17 / 0.35	21 / 0.36	23 / 0.35	26 / 0.34	28 / 0.34	29 / 0.34	29 / 0.34	30 / 0.33	32 / 0.33	33 / 0.32	36 / 0.31	37 / 0.31	39 / 0.3	40 / 0.29	41 / 0.29	43 / 0.28	44 / 0.28	44 / 0.28	45 / 0.27	45 / 0.27
	89,100	50th	4 / 0.37	15 / 0.37	17 / 0.36	23 / 0.35	24 / 0.35	29 / 0.34	32 / 0.33	33 / 0.32	35 / 0.32	35 / 0.32	36 / 0.32	37 / 0.31	39 / 0.3	41 / 0.29	43 / 0.28	44 / 0.28	45 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	50 / 0.25
	101,500	55th	7 / 0.38	16 / 0.37	19 / 0.35	24 / 0.35	28 / 0.34	33 / 0.32	35 / 0.32	36 / 0.31	38 / 0.31	38 / 0.31	39 / 0.3	41 / 0.29	42 / 0.29	44 / 0.28	47 / 0.26	49 / 0.25	49 / 0.25	51 / 0.25	52 / 0.24	54 / 0.23	55 / 0.23	55 / 0.23
	110,000	60th	7 / 0.38	22 / 0.36	25 / 0.34	30 / 0.33	33 / 0.33	40 / 0.3	42 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	46 / 0.27	47 / 0.27	48 / 0.26	50 / 0.25	53 / 0.23	54 / 0.23	56 / 0.22	57 / 0.22	58 / 0.21	59 / 0.21	60 / 0.2	60 / 0.2
	122,500	65th	7 / 0.38	22 / 0.36	25 / 0.34	33 / 0.32	37 / 0.3	42 / 0.29	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	52 / 0.24	54 / 0.23	57 / 0.22	58 / 0.22	61 / 0.21	62 / 0.2	63 / 0.2	64 / 0.2	65 / 0.19	65 / 0.19
	132,400	70th	7 / 0.38	24 / 0.35	27 / 0.33	34 / 0.32	40 / 0.29	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.24	53 / 0.24	54 / 0.23	56 / 0.22	59 / 0.21	-	-	65 / 0.19	66 / 0.19	68 / 0.18	69 / 0.18	70 / 0.17	70 / 0.17
	142,700	75th	7 / 0.38	29 / 0.34	34 / 0.3	41 / 0.29	49 / 0.25	53 / 0.24	54 / 0.23	56 / 0.22	58 / 0.21	58 / 0.21	-	-	-	-	-	-	-	-	73 / 0.18	74 / 0.17	75 / 0.17	75 / 0.17
	160,200	80th	10 / 0.34	34 / 0.31	40 / 0.27	48 / 0.26	55 / 0.23	59 / 0.22	60 / 0.21	63 / 0.2	-	-	-	-	-	-	-	-	-	-	-	80 / 0.18	80 / 0.19	80 / 0.19
	182,500	85th	10 / 0.33	40 / 0.29	49 / 0.25	56 / 0.23	65 / 0.2	68 / 0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.2	85 / 0.2
	214,800	90th	12 / 0.31	47 / 0.26	56 / 0.24	60 / 0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.23	56 / 0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 80. Percent Drought Prediction and MSE of Drought Scenario 8 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 8			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4	0 / 0.4
	15,300	5th	0 / 0.4	3 / 0.4	4 / 0.4	4 / 0.4	4 / 0.41	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4	5 / 0.4
	30,700	10th	3 / 0.4	5 / 0.4	6 / 0.4	6 / 0.41	7 / 0.41	8 / 0.4	8 / 0.41	8 / 0.41	9 / 0.4	9 / 0.4	9 / 0.4	9 / 0.41	10 / 0.4	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41	10 / 0.41
	40,400	15th	4 / 0.4	5 / 0.41	7 / 0.4	7 / 0.41	9 / 0.4	10 / 0.41	12 / 0.4	12 / 0.4	12 / 0.4	12 / 0.4	13 / 0.41	14 / 0.4	14 / 0.41	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4	15 / 0.4
	45,800	20th	4 / 0.4	6 / 0.4	7 / 0.4	9 / 0.4	11 / 0.39	13 / 0.39	15 / 0.39	15 / 0.39	15 / 0.39	15 / 0.39	17 / 0.38	17 / 0.39	18 / 0.38	19 / 0.38	19 / 0.38	19 / 0.38	19 / 0.38	20 / 0.38	20 / 0.38	20 / 0.38	20 / 0.38	20 / 0.38
	52,900	25th	4 / 0.4	6 / 0.4	9 / 0.39	11 / 0.39	12 / 0.39	15 / 0.38	16 / 0.38	16 / 0.38	17 / 0.38	17 / 0.38	19 / 0.38	20 / 0.37	21 / 0.37	22 / 0.37	23 / 0.36	23 / 0.36	24 / 0.36	25 / 0.35	25 / 0.35	25 / 0.35	25 / 0.35	25 / 0.35
	59,900	30th	4 / 0.4	7 / 0.4	10 / 0.38	12 / 0.38	15 / 0.38	18 / 0.37	19 / 0.37	20 / 0.37	20 / 0.37	21 / 0.37	23 / 0.36	23 / 0.37	25 / 0.35	26 / 0.35	26 / 0.35	27 / 0.35	28 / 0.34	29 / 0.34	30 / 0.33	30 / 0.33	30 / 0.33	30 / 0.33
	65,100	35th	4 / 0.4	9 / 0.4	11 / 0.38	14 / 0.38	17 / 0.38	20 / 0.37	22 / 0.36	22 / 0.37	23 / 0.36	24 / 0.36	26 / 0.36	27 / 0.35	28 / 0.35	29 / 0.34	31 / 0.33	32 / 0.33	33 / 0.33	34 / 0.32	35 / 0.32	35 / 0.32	35 / 0.32	35 / 0.32
	70,700	40th	4 / 0.4	10 / 0.39	12 / 0.38	16 / 0.37	19 / 0.37	22 / 0.36	24 / 0.36	24 / 0.36	25 / 0.36	26 / 0.36	28 / 0.35	30 / 0.34	31 / 0.34	33 / 0.33	35 / 0.32	36 / 0.31	37 / 0.31	38 / 0.3	39 / 0.3	40 / 0.29	40 / 0.29	
	79,100	45th	4 / 0.4	14 / 0.39	17 / 0.37	21 / 0.37	23 / 0.36	26 / 0.35	28 / 0.35	29 / 0.35	29 / 0.35	30 / 0.34	32 / 0.34	33 / 0.33	36 / 0.32	37 / 0.31	39 / 0.3	40 / 0.3	41 / 0.29	43 / 0.28	44 / 0.28	44 / 0.28	45 / 0.27	
	89,100	50th	4 / 0.4	15 / 0.39	17 / 0.37	23 / 0.36	24 / 0.36	29 / 0.35	32 / 0.34	33 / 0.33	35 / 0.33	35 / 0.33	36 / 0.32	37 / 0.32	39 / 0.3	41 / 0.3	43 / 0.28	44 / 0.28	45 / 0.28	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	
	101,500	55th	7 / 0.4	16 / 0.39	19 / 0.37	24 / 0.36	28 / 0.35	33 / 0.33	35 / 0.33	36 / 0.32	38 / 0.31	38 / 0.32	39 / 0.31	41 / 0.3	42 / 0.29	44 / 0.28	47 / 0.27	49 / 0.26	49 / 0.26	51 / 0.25	52 / 0.24	54 / 0.23	55 / 0.23	
	110,000	60th	7 / 0.4	22 / 0.37	25 / 0.35	30 / 0.34	33 / 0.33	40 / 0.3	42 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	46 / 0.27	47 / 0.27	48 / 0.26	50 / 0.25	53 / 0.23	54 / 0.23	56 / 0.22	57 / 0.22	58 / 0.21	59 / 0.21	60 / 0.21	
	122,500	65th	7 / 0.4	22 / 0.37	25 / 0.35	33 / 0.33	37 / 0.31	42 / 0.29	45 / 0.28	46 / 0.27	47 / 0.27	48 / 0.26	49 / 0.26	50 / 0.25	52 / 0.24	54 / 0.23	57 / 0.22	58 / 0.21	61 / 0.21	62 / 0.21	63 / 0.2	64 / 0.2	65 / 0.2	
	132,400	70th	7 / 0.4	24 / 0.36	27 / 0.34	34 / 0.32	40 / 0.29	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.24	53 / 0.23	54 / 0.23	56 / 0.22	59 / 0.21	-	-	65 / 0.2	66 / 0.2	68 / 0.19	69 / 0.19	70 / 0.18	
	142,700	75th	7 / 0.4	29 / 0.33	34 / 0.3	41 / 0.28	49 / 0.25	53 / 0.24	54 / 0.23	56 / 0.23	58 / 0.22	58 / 0.22	-	-	-	-	-	-	-	-	73 / 0.19	74 / 0.19	75 / 0.18	
	160,200	80th	10 / 0.36	34 / 0.3	40 / 0.27	48 / 0.25	55 / 0.24	59 / 0.22	60 / 0.22	63 / 0.21	-	-	-	-	-	-	-	-	-	-	-	80 / 0.2	80 / 0.2	
	182,500	85th	10 / 0.35	40 / 0.29	49 / 0.25	56 / 0.23	65 / 0.2	68 / 0.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.22	
	214,800	90th	12 / 0.33	47 / 0.26	56 / 0.24	60 / 0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.23	56 / 0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 81. Percent Drought Prediction and MSE of Drought Scenario 9 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 9			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48	0 / 0.48
	15,300	5th	0 / 0.48	3 / 0.48	4 / 0.48	4 / 0.48	4 / 0.49	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48	5 / 0.48
	30,700	10th	3 / 0.49	5 / 0.48	6 / 0.47	6 / 0.48	7 / 0.48	8 / 0.47	8 / 0.48	8 / 0.48	9 / 0.47	9 / 0.47	9 / 0.47	9 / 0.47	10 / 0.47	10 / 0.47	10 / 0.47	10 / 0.47	10 / 0.47	10 / 0.47	10 / 0.47	10 / 0.47	10 / 0.47	10 / 0.47
	40,400	15th	4 / 0.48	5 / 0.49	7 / 0.47	7 / 0.48	9 / 0.47	10 / 0.47	12 / 0.46	12 / 0.46	12 / 0.46	12 / 0.46	13 / 0.46	14 / 0.45	14 / 0.46	15 / 0.45	15 / 0.45	15 / 0.45	15 / 0.45	15 / 0.45	15 / 0.45	15 / 0.45	15 / 0.45	15 / 0.45
	45,800	20th	4 / 0.48	6 / 0.48	7 / 0.47	9 / 0.46	11 / 0.45	13 / 0.45	15 / 0.44	15 / 0.44	15 / 0.44	15 / 0.44	17 / 0.43	17 / 0.44	18 / 0.43	19 / 0.43	19 / 0.43	19 / 0.43	19 / 0.43	20 / 0.42	20 / 0.42	20 / 0.42	20 / 0.42	20 / 0.42
	52,900	25th	4 / 0.48	6 / 0.48	9 / 0.45	11 / 0.44	12 / 0.44	15 / 0.43	16 / 0.43	16 / 0.43	17 / 0.42	17 / 0.43	19 / 0.42	20 / 0.42	21 / 0.41	22 / 0.4	23 / 0.4	23 / 0.4	24 / 0.39	25 / 0.39	25 / 0.39	25 / 0.39	25 / 0.39	25 / 0.39
	59,900	30th	4 / 0.48	7 / 0.47	10 / 0.43	12 / 0.43	15 / 0.42	18 / 0.41	19 / 0.41	20 / 0.41	20 / 0.41	21 / 0.4	23 / 0.39	23 / 0.4	25 / 0.38	26 / 0.38	26 / 0.38	27 / 0.37	28 / 0.37	29 / 0.36	30 / 0.36	30 / 0.36	30 / 0.36	30 / 0.36
	65,100	35th	4 / 0.48	9 / 0.45	11 / 0.43	14 / 0.42	17 / 0.41	20 / 0.4	22 / 0.39	22 / 0.4	23 / 0.39	24 / 0.38	26 / 0.38	27 / 0.37	28 / 0.37	29 / 0.36	31 / 0.35	32 / 0.35	33 / 0.34	34 / 0.33	35 / 0.33	35 / 0.33	35 / 0.33	35 / 0.33
	70,700	40th	4 / 0.48	10 / 0.44	12 / 0.42	16 / 0.41	19 / 0.4	22 / 0.39	24 / 0.38	24 / 0.39	25 / 0.38	26 / 0.37	28 / 0.37	30 / 0.36	31 / 0.35	33 / 0.34	35 / 0.33	36 / 0.32	37 / 0.32	38 / 0.31	39 / 0.3	40 / 0.3	40 / 0.3	
	79,100	45th	4 / 0.48	14 / 0.42	17 / 0.4	21 / 0.39	23 / 0.38	26 / 0.37	28 / 0.37	29 / 0.36	29 / 0.36	30 / 0.35	32 / 0.35	33 / 0.34	36 / 0.32	37 / 0.32	39 / 0.3	40 / 0.3	41 / 0.3	43 / 0.28	44 / 0.28	44 / 0.28	45 / 0.27	
	89,100	50th	4 / 0.48	15 / 0.42	17 / 0.4	23 / 0.38	24 / 0.38	29 / 0.36	32 / 0.35	33 / 0.34	35 / 0.33	35 / 0.33	36 / 0.33	37 / 0.32	39 / 0.31	41 / 0.29	43 / 0.28	44 / 0.28	45 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	
	101,500	55th	7 / 0.48	16 / 0.42	19 / 0.39	24 / 0.38	28 / 0.37	33 / 0.34	35 / 0.33	36 / 0.32	38 / 0.31	38 / 0.32	39 / 0.31	41 / 0.3	42 / 0.29	44 / 0.28	47 / 0.26	49 / 0.25	49 / 0.25	51 / 0.25	52 / 0.24	54 / 0.23	55 / 0.23	
	110,000	60th	7 / 0.48	22 / 0.39	25 / 0.37	30 / 0.35	33 / 0.34	40 / 0.3	42 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	46 / 0.27	47 / 0.27	48 / 0.26	50 / 0.25	53 / 0.24	54 / 0.23	56 / 0.22	57 / 0.22	58 / 0.22	59 / 0.22	60 / 0.22	
	122,500	65th	7 / 0.48	22 / 0.39	25 / 0.36	33 / 0.34	37 / 0.32	42 / 0.29	45 / 0.28	46 / 0.27	47 / 0.27	48 / 0.26	49 / 0.26	50 / 0.25	52 / 0.24	54 / 0.23	57 / 0.22	58 / 0.22	61 / 0.22	62 / 0.21	63 / 0.21	64 / 0.21	65 / 0.21	
	132,400	70th	7 / 0.48	24 / 0.37	27 / 0.35	34 / 0.33	40 / 0.3	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.24	53 / 0.24	54 / 0.23	56 / 0.22	59 / 0.22	-	-	65 / 0.21	66 / 0.21	68 / 0.21	69 / 0.2	70 / 0.21	
	142,700	75th	7 / 0.48	29 / 0.34	34 / 0.3	41 / 0.29	49 / 0.25	53 / 0.24	54 / 0.24	56 / 0.23	58 / 0.22	58 / 0.22	-	-	-	-	-	-	-	73 / 0.21	74 / 0.21	75 / 0.22		
	160,200	80th	10 / 0.43	34 / 0.31	40 / 0.27	48 / 0.26	55 / 0.24	59 / 0.23	60 / 0.22	63 / 0.21	-	-	-	-	-	-	-	-	-	-	-	80 / 0.24	80 / 0.24	
	182,500	85th	10 / 0.43	40 / 0.28	49 / 0.25	56 / 0.24	65 / 0.22	68 / 0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.28	
	214,800	90th	12 / 0.39	47 / 0.26	56 / 0.25	60 / 0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.26	56 / 0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 82. Percent Drought Prediction and MSE of Drought Scenario 10 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 10			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53	0 / 0.53
	15,300	5th	0 / 0.53	3 / 0.52	4 / 0.52	4 / 0.52	4 / 0.53	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52	5 / 0.52
	30,700	10th	3 / 0.53	5 / 0.52	6 / 0.51	6 / 0.52	7 / 0.51	8 / 0.51	8 / 0.51	8 / 0.51	9 / 0.5	9 / 0.5	9 / 0.5	9 / 0.51	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5	10 / 0.5
	40,400	15th	4 / 0.52	5 / 0.52	7 / 0.51	7 / 0.51	9 / 0.5	10 / 0.5	12 / 0.49	12 / 0.49	12 / 0.49	12 / 0.49	13 / 0.49	14 / 0.48	14 / 0.49	15 / 0.48	15 / 0.48	15 / 0.48	15 / 0.48	15 / 0.48	15 / 0.48	15 / 0.48	15 / 0.48	15 / 0.48
	45,800	20th	4 / 0.52	6 / 0.51	7 / 0.5	9 / 0.49	11 / 0.48	13 / 0.48	15 / 0.47	15 / 0.47	15 / 0.47	15 / 0.47	17 / 0.46	17 / 0.46	18 / 0.46	19 / 0.45	19 / 0.45	19 / 0.45	19 / 0.45	20 / 0.45	20 / 0.45	20 / 0.45	20 / 0.45	20 / 0.45
	52,900	25th	4 / 0.52	6 / 0.52	9 / 0.48	11 / 0.47	12 / 0.47	15 / 0.46	16 / 0.46	16 / 0.46	17 / 0.45	17 / 0.45	19 / 0.45	20 / 0.44	21 / 0.43	22 / 0.43	23 / 0.42	23 / 0.42	24 / 0.41	25 / 0.41	25 / 0.41	25 / 0.41	25 / 0.41	25 / 0.41
	59,900	30th	4 / 0.52	7 / 0.51	10 / 0.47	12 / 0.46	15 / 0.45	18 / 0.44	19 / 0.44	20 / 0.43	20 / 0.43	21 / 0.42	23 / 0.42	23 / 0.42	25 / 0.4	26 / 0.4	26 / 0.4	27 / 0.39	28 / 0.39	29 / 0.38	30 / 0.37	30 / 0.37	30 / 0.37	30 / 0.37
	65,100	35th	4 / 0.52	9 / 0.48	11 / 0.46	14 / 0.45	17 / 0.44	20 / 0.43	22 / 0.42	22 / 0.42	23 / 0.41	24 / 0.4	26 / 0.4	27 / 0.39	28 / 0.39	29 / 0.38	31 / 0.36	32 / 0.36	33 / 0.35	34 / 0.35	35 / 0.34	35 / 0.34	35 / 0.34	35 / 0.34
	70,700	40th	4 / 0.52	10 / 0.47	12 / 0.45	16 / 0.43	19 / 0.43	22 / 0.41	24 / 0.4	24 / 0.41	25 / 0.4	26 / 0.39	28 / 0.39	30 / 0.37	31 / 0.37	33 / 0.35	35 / 0.34	36 / 0.33	37 / 0.33	38 / 0.32	39 / 0.31	40 / 0.31	40 / 0.31	40 / 0.31
	79,100	45th	4 / 0.52	14 / 0.45	17 / 0.42	21 / 0.41	23 / 0.4	26 / 0.39	28 / 0.38	29 / 0.38	29 / 0.38	30 / 0.37	32 / 0.36	33 / 0.36	36 / 0.34	37 / 0.33	39 / 0.31	40 / 0.31	41 / 0.3	43 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	45 / 0.28
	89,100	50th	4 / 0.52	15 / 0.44	17 / 0.43	23 / 0.4	24 / 0.4	29 / 0.38	32 / 0.36	33 / 0.35	35 / 0.34	35 / 0.34	36 / 0.34	37 / 0.33	39 / 0.32	41 / 0.3	43 / 0.29	44 / 0.28	45 / 0.28	47 / 0.27	48 / 0.26	49 / 0.26	50 / 0.25	50 / 0.25
	101,500	55th	7 / 0.51	16 / 0.44	19 / 0.42	24 / 0.4	28 / 0.38	33 / 0.35	35 / 0.34	36 / 0.33	38 / 0.32	38 / 0.32	39 / 0.32	41 / 0.3	42 / 0.3	44 / 0.28	47 / 0.27	49 / 0.25	49 / 0.26	51 / 0.25	52 / 0.24	54 / 0.23	55 / 0.23	55 / 0.23
	110,000	60th	7 / 0.51	22 / 0.41	25 / 0.38	30 / 0.36	33 / 0.35	40 / 0.31	42 / 0.3	44 / 0.29	44 / 0.29	45 / 0.28	46 / 0.27	47 / 0.27	48 / 0.26	50 / 0.25	53 / 0.24	54 / 0.23	56 / 0.22	57 / 0.22	58 / 0.22	59 / 0.22	60 / 0.21	60 / 0.21
	122,500	65th	7 / 0.51	22 / 0.41	25 / 0.38	33 / 0.34	37 / 0.32	42 / 0.29	45 / 0.28	46 / 0.27	47 / 0.27	48 / 0.26	49 / 0.25	50 / 0.25	52 / 0.24	54 / 0.23	57 / 0.22	58 / 0.22	61 / 0.22	62 / 0.22	63 / 0.22	64 / 0.21	65 / 0.22	65 / 0.22
	132,400	70th	7 / 0.51	24 / 0.39	27 / 0.36	34 / 0.34	40 / 0.3	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.24	53 / 0.24	54 / 0.23	56 / 0.23	59 / 0.22	-	-	65 / 0.22	66 / 0.22	68 / 0.22	69 / 0.22	70 / 0.22	70 / 0.22
	142,700	75th	7 / 0.51	29 / 0.35	34 / 0.31	41 / 0.29	49 / 0.25	53 / 0.24	54 / 0.24	56 / 0.23	58 / 0.22	58 / 0.22	-	-	-	-	-	-	-	-	73 / 0.23	74 / 0.23	75 / 0.23	75 / 0.23
	160,200	80th	10 / 0.46	34 / 0.32	40 / 0.28	48 / 0.26	55 / 0.24	59 / 0.23	60 / 0.22	63 / 0.22	-	-	-	-	-	-	-	-	-	-	-	80 / 0.26	80 / 0.27	80 / 0.27
	182,500	85th	10 / 0.46	40 / 0.28	49 / 0.25	56 / 0.24	65 / 0.22	68 / 0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.31	85 / 0.31
	214,800	90th	12 / 0.42	47 / 0.26	56 / 0.24	60 / 0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.27	56 / 0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 83. Percent Drought Prediction and MSE of Drought Scenario 11 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 11			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57	0 / 0.57
	15,300	5th	0 / 0.57	3 / 0.56	4 / 0.56	4 / 0.56	4 / 0.56	5 / 0.55	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56	5 / 0.56
	30,700	10th	3 / 0.56	5 / 0.55	6 / 0.55	6 / 0.55	7 / 0.55	8 / 0.54	8 / 0.54	8 / 0.54	9 / 0.54	9 / 0.54	9 / 0.54	9 / 0.54	10 / 0.53	10 / 0.54	10 / 0.54	10 / 0.54	10 / 0.54	10 / 0.54	10 / 0.54	10 / 0.54	10 / 0.54	10 / 0.54
	40,400	15th	4 / 0.55	5 / 0.56	7 / 0.54	7 / 0.55	9 / 0.53	10 / 0.53	12 / 0.52	12 / 0.52	12 / 0.52	12 / 0.52	13 / 0.52	14 / 0.51	14 / 0.52	15 / 0.51	15 / 0.51	15 / 0.51	15 / 0.51	15 / 0.51	15 / 0.51	15 / 0.51	15 / 0.51	15 / 0.51
	45,800	20th	4 / 0.55	6 / 0.55	7 / 0.54	9 / 0.53	11 / 0.51	13 / 0.51	15 / 0.5	15 / 0.5	15 / 0.5	15 / 0.5	17 / 0.49	17 / 0.49	18 / 0.48	19 / 0.48	19 / 0.48	19 / 0.48	19 / 0.48	20 / 0.47	20 / 0.47	20 / 0.47	20 / 0.47	20 / 0.47
	52,900	25th	4 / 0.55	6 / 0.55	9 / 0.52	11 / 0.51	12 / 0.5	15 / 0.49	16 / 0.48	16 / 0.48	17 / 0.48	17 / 0.48	19 / 0.47	20 / 0.46	21 / 0.45	22 / 0.45	23 / 0.44	23 / 0.44	24 / 0.43	25 / 0.43	25 / 0.43	25 / 0.43	25 / 0.43	25 / 0.43
	59,900	30th	4 / 0.55	7 / 0.54	10 / 0.5	12 / 0.49	15 / 0.48	18 / 0.46	19 / 0.46	20 / 0.45	20 / 0.45	21 / 0.45	23 / 0.44	23 / 0.44	25 / 0.42	26 / 0.41	26 / 0.42	27 / 0.41	28 / 0.4	29 / 0.39	30 / 0.39	30 / 0.39	30 / 0.39	30 / 0.39
	65,100	35th	4 / 0.55	9 / 0.51	11 / 0.49	14 / 0.48	17 / 0.47	20 / 0.45	22 / 0.44	22 / 0.44	23 / 0.43	24 / 0.42	26 / 0.42	27 / 0.41	28 / 0.4	29 / 0.39	31 / 0.37	32 / 0.37	33 / 0.36	34 / 0.35	35 / 0.35	35 / 0.35	35 / 0.35	35 / 0.35
	70,700	40th	4 / 0.55	10 / 0.5	12 / 0.48	16 / 0.46	19 / 0.45	22 / 0.43	24 / 0.42	24 / 0.42	25 / 0.41	26 / 0.41	28 / 0.4	30 / 0.38	31 / 0.37	33 / 0.35	35 / 0.34	36 / 0.34	37 / 0.33	38 / 0.32	39 / 0.32	40 / 0.31	40 / 0.31	40 / 0.31
	79,100	45th	4 / 0.55	14 / 0.45	17 / 0.42	21 / 0.42	23 / 0.4	26 / 0.39	28 / 0.38	29 / 0.38	29 / 0.38	30 / 0.37	32 / 0.36	33 / 0.36	36 / 0.34	37 / 0.33	39 / 0.31	40 / 0.31	41 / 0.3	43 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	45 / 0.28
	89,100	50th	4 / 0.55	15 / 0.44	17 / 0.42	23 / 0.4	24 / 0.39	29 / 0.37	32 / 0.36	33 / 0.35	35 / 0.34	35 / 0.34	36 / 0.33	37 / 0.33	39 / 0.31	41 / 0.3	43 / 0.29	44 / 0.28	45 / 0.28	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	50 / 0.25
	101,500	55th	7 / 0.55	16 / 0.44	19 / 0.41	24 / 0.39	28 / 0.37	33 / 0.34	35 / 0.33	36 / 0.32	38 / 0.31	38 / 0.32	39 / 0.31	41 / 0.3	42 / 0.29	44 / 0.28	47 / 0.26	49 / 0.25	49 / 0.25	51 / 0.25	52 / 0.24	54 / 0.23	55 / 0.23	55 / 0.23
	110,000	60th	7 / 0.55	22 / 0.4	25 / 0.38	30 / 0.35	33 / 0.34	40 / 0.3	42 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	46 / 0.27	47 / 0.27	48 / 0.26	50 / 0.25	53 / 0.24	54 / 0.23	56 / 0.23	57 / 0.23	58 / 0.22	59 / 0.22	60 / 0.22	60 / 0.22
	122,500	65th	7 / 0.55	22 / 0.4	25 / 0.37	33 / 0.34	37 / 0.32	42 / 0.29	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	52 / 0.24	54 / 0.24	57 / 0.23	58 / 0.23	61 / 0.23	62 / 0.22	63 / 0.22	64 / 0.22	65 / 0.23	65 / 0.23
	132,400	70th	7 / 0.55	24 / 0.38	27 / 0.36	34 / 0.33	40 / 0.29	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.24	53 / 0.24	54 / 0.24	56 / 0.23	59 / 0.23	-	-	65 / 0.23	66 / 0.23	68 / 0.23	69 / 0.23	70 / 0.23	70 / 0.23
	142,700	75th	7 / 0.54	29 / 0.35	34 / 0.31	41 / 0.29	49 / 0.25	53 / 0.24	54 / 0.24	56 / 0.23	58 / 0.23	58 / 0.23	-	-	-	-	-	-	-	-	73 / 0.24	74 / 0.24	75 / 0.25	75 / 0.25
	160,200	80th	10 / 0.49	34 / 0.31	40 / 0.28	48 / 0.26	55 / 0.24	59 / 0.23	60 / 0.23	63 / 0.22	-	-	-	-	-	-	-	-	-	-	-	80 / 0.28	80 / 0.29	80 / 0.29
	182,500	85th	10 / 0.49	40 / 0.28	49 / 0.25	56 / 0.24	65 / 0.23	68 / 0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.33	85 / 0.33
	214,800	90th	12 / 0.45	47 / 0.26	56 / 0.25	60 / 0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.28	56 / 0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 84. Percent Drought Prediction and MSE of Drought Scenario 12 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 12			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62	0 / 0.62
	15,300	5th	0 / 0.62	3 / 0.61	4 / 0.61	4 / 0.61	4 / 0.61	5 / 0.6	5 / 0.6	5 / 0.6	5 / 0.6	5 / 0.6	5 / 0.6	5 / 0.6	5 / 0.6	5 / 0.61	5 / 0.61	5 / 0.61	5 / 0.61	5 / 0.61	5 / 0.61	5 / 0.61	5 / 0.61	5 / 0.61
	30,700	10th	3 / 0.61	5 / 0.6	6 / 0.59	6 / 0.6	7 / 0.59	8 / 0.58	8 / 0.59	8 / 0.59	9 / 0.58	9 / 0.58	9 / 0.58	9 / 0.58	10 / 0.58	10 / 0.58	10 / 0.58	10 / 0.58	10 / 0.58	10 / 0.58	10 / 0.58	10 / 0.58	10 / 0.58	10 / 0.58
	40,400	15th	4 / 0.6	5 / 0.61	7 / 0.59	7 / 0.59	9 / 0.58	10 / 0.57	12 / 0.56	12 / 0.56	12 / 0.56	12 / 0.56	13 / 0.56	14 / 0.55	14 / 0.56	15 / 0.55	15 / 0.55	15 / 0.55	15 / 0.55	15 / 0.55	15 / 0.55	15 / 0.55	15 / 0.55	15 / 0.55
	45,800	20th	4 / 0.6	6 / 0.59	7 / 0.58	9 / 0.57	11 / 0.55	13 / 0.55	15 / 0.53	15 / 0.53	15 / 0.53	15 / 0.54	17 / 0.52	17 / 0.53	18 / 0.52	19 / 0.51	19 / 0.51	19 / 0.51	19 / 0.51	20 / 0.5	20 / 0.5	20 / 0.5	20 / 0.5	
	52,900	25th	4 / 0.6	6 / 0.6	9 / 0.56	11 / 0.55	12 / 0.54	15 / 0.52	16 / 0.52	16 / 0.52	17 / 0.51	17 / 0.51	19 / 0.5	20 / 0.5	21 / 0.49	22 / 0.48	23 / 0.47	23 / 0.47	24 / 0.46	25 / 0.45	25 / 0.45	25 / 0.45	25 / 0.45	
	59,900	30th	4 / 0.6	7 / 0.59	10 / 0.54	12 / 0.53	15 / 0.51	18 / 0.49	19 / 0.49	20 / 0.48	20 / 0.48	21 / 0.47	23 / 0.46	23 / 0.47	25 / 0.44	26 / 0.43	26 / 0.44	27 / 0.43	28 / 0.42	29 / 0.41	30 / 0.4	30 / 0.41	30 / 0.41	
	65,100	35th	4 / 0.6	9 / 0.56	11 / 0.53	14 / 0.51	17 / 0.49	20 / 0.47	22 / 0.46	22 / 0.46	23 / 0.45	24 / 0.44	26 / 0.43	27 / 0.43	28 / 0.42	29 / 0.41	31 / 0.39	32 / 0.38	33 / 0.37	34 / 0.37	35 / 0.36	35 / 0.36	35 / 0.36	
	70,700	40th	4 / 0.6	10 / 0.54	12 / 0.51	16 / 0.48	19 / 0.47	22 / 0.45	24 / 0.44	24 / 0.44	25 / 0.43	26 / 0.42	28 / 0.41	30 / 0.39	31 / 0.38	33 / 0.36	35 / 0.35	36 / 0.34	37 / 0.34	38 / 0.33	39 / 0.32	40 / 0.31	40 / 0.31	
	79,100	45th	4 / 0.6	14 / 0.48	17 / 0.44	21 / 0.43	23 / 0.42	26 / 0.4	28 / 0.39	29 / 0.38	29 / 0.38	30 / 0.37	32 / 0.37	33 / 0.36	36 / 0.33	37 / 0.33	39 / 0.31	40 / 0.31	41 / 0.3	43 / 0.29	44 / 0.28	44 / 0.28	45 / 0.28	
	89,100	50th	4 / 0.6	15 / 0.46	17 / 0.44	23 / 0.41	24 / 0.4	29 / 0.38	32 / 0.36	33 / 0.35	35 / 0.34	35 / 0.34	36 / 0.33	37 / 0.33	39 / 0.31	41 / 0.29	43 / 0.28	44 / 0.28	45 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	
	101,500	55th	7 / 0.57	16 / 0.46	19 / 0.42	24 / 0.4	28 / 0.37	33 / 0.34	35 / 0.33	36 / 0.32	38 / 0.31	38 / 0.31	39 / 0.31	41 / 0.29	42 / 0.29	44 / 0.28	47 / 0.26	49 / 0.25	49 / 0.25	51 / 0.25	52 / 0.24	54 / 0.24	55 / 0.24	
	110,000	60th	7 / 0.57	22 / 0.41	25 / 0.38	30 / 0.36	33 / 0.34	40 / 0.3	42 / 0.29	44 / 0.28	44 / 0.28	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	50 / 0.25	53 / 0.24	54 / 0.24	56 / 0.23	57 / 0.23	58 / 0.23	59 / 0.23	60 / 0.23	
	122,500	65th	7 / 0.57	22 / 0.41	25 / 0.38	33 / 0.34	37 / 0.31	42 / 0.28	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	52 / 0.24	54 / 0.24	57 / 0.23	58 / 0.23	61 / 0.24	62 / 0.23	63 / 0.24	64 / 0.24	65 / 0.24	
	132,400	70th	7 / 0.57	24 / 0.39	27 / 0.36	34 / 0.33	40 / 0.29	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.24	53 / 0.24	54 / 0.24	56 / 0.24	59 / 0.24	-	-	65 / 0.24	66 / 0.24	68 / 0.25	69 / 0.25	70 / 0.25	
	142,700	75th	7 / 0.57	29 / 0.36	34 / 0.31	41 / 0.29	49 / 0.25	53 / 0.24	54 / 0.24	56 / 0.24	58 / 0.24	58 / 0.24	-	-	-	-	-	-	-	-	73 / 0.26	74 / 0.27	75 / 0.28	
	160,200	80th	10 / 0.51	34 / 0.32	40 / 0.28	48 / 0.26	55 / 0.24	59 / 0.24	60 / 0.24	63 / 0.24	-	-	-	-	-	-	-	-	-	-	-	80 / 0.32	80 / 0.32	
	182,500	85th	10 / 0.51	40 / 0.28	49 / 0.25	56 / 0.24	65 / 0.25	68 / 0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.37	
	214,800	90th	12 / 0.48	47 / 0.26	56 / 0.25	60 / 0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.29	56 / 0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 85. Percent Drought Prediction and MSE of Drought Scenario 13 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 13			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68	0 / 0.68
	15,300	5th	0 / 0.68	3 / 0.67	4 / 0.66	4 / 0.67	4 / 0.67	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66	5 / 0.66
	30,700	10th	3 / 0.67	5 / 0.66	6 / 0.65	6 / 0.66	7 / 0.65	8 / 0.64	8 / 0.64	8 / 0.64	9 / 0.63	9 / 0.64	9 / 0.64	9 / 0.64	10 / 0.63	10 / 0.63	10 / 0.63	10 / 0.63	10 / 0.63	10 / 0.63	10 / 0.63	10 / 0.63	10 / 0.63	10 / 0.63
	40,400	15th	4 / 0.66	5 / 0.67	7 / 0.64	7 / 0.65	9 / 0.63	10 / 0.63	12 / 0.61	12 / 0.61	12 / 0.61	12 / 0.61	13 / 0.61	14 / 0.6	14 / 0.6	15 / 0.59	15 / 0.59	15 / 0.59	15 / 0.59	15 / 0.59	15 / 0.59	15 / 0.59	15 / 0.59	15 / 0.59
	45,800	20th	4 / 0.66	6 / 0.65	7 / 0.64	9 / 0.62	11 / 0.61	13 / 0.59	15 / 0.58	15 / 0.58	15 / 0.58	15 / 0.58	17 / 0.57	17 / 0.57	18 / 0.56	19 / 0.55	19 / 0.55	19 / 0.55	19 / 0.55	20 / 0.54	20 / 0.54	20 / 0.54	20 / 0.54	20 / 0.54
	52,900	25th	4 / 0.66	6 / 0.66	9 / 0.61	11 / 0.6	12 / 0.59	15 / 0.57	16 / 0.56	16 / 0.56	17 / 0.55	17 / 0.56	19 / 0.54	20 / 0.53	21 / 0.52	22 / 0.51	23 / 0.5	23 / 0.5	24 / 0.49	25 / 0.48	25 / 0.48	25 / 0.48	25 / 0.48	25 / 0.48
	59,900	30th	4 / 0.66	7 / 0.64	10 / 0.59	12 / 0.58	15 / 0.56	18 / 0.53	19 / 0.52	20 / 0.51	20 / 0.51	21 / 0.5	23 / 0.49	23 / 0.49	25 / 0.47	26 / 0.46	26 / 0.46	27 / 0.45	28 / 0.44	29 / 0.43	30 / 0.42	30 / 0.42	30 / 0.42	30 / 0.42
	65,100	35th	4 / 0.66	9 / 0.6	11 / 0.57	14 / 0.55	17 / 0.53	20 / 0.5	22 / 0.48	22 / 0.48	23 / 0.47	24 / 0.46	26 / 0.45	27 / 0.44	28 / 0.43	29 / 0.42	31 / 0.4	32 / 0.39	33 / 0.38	34 / 0.37	35 / 0.36	35 / 0.36	35 / 0.36	35 / 0.36
	70,700	40th	4 / 0.66	10 / 0.58	12 / 0.55	16 / 0.52	19 / 0.5	22 / 0.47	24 / 0.46	24 / 0.46	25 / 0.45	26 / 0.44	28 / 0.43	30 / 0.41	31 / 0.39	33 / 0.38	35 / 0.36	36 / 0.35	37 / 0.34	38 / 0.33	39 / 0.33	40 / 0.32	40 / 0.32	40 / 0.32
	79,100	45th	4 / 0.66	14 / 0.52	17 / 0.48	21 / 0.46	23 / 0.44	26 / 0.42	28 / 0.4	29 / 0.4	29 / 0.39	30 / 0.39	32 / 0.38	33 / 0.37	36 / 0.34	37 / 0.33	39 / 0.32	40 / 0.31	41 / 0.3	43 / 0.29	44 / 0.28	44 / 0.28	44 / 0.28	45 / 0.28
	89,100	50th	4 / 0.66	15 / 0.5	17 / 0.48	23 / 0.43	24 / 0.43	29 / 0.39	32 / 0.37	33 / 0.36	35 / 0.35	35 / 0.35	36 / 0.34	37 / 0.33	39 / 0.32	41 / 0.3	43 / 0.29	44 / 0.28	45 / 0.28	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	
	101,500	55th	7 / 0.63	16 / 0.49	19 / 0.46	24 / 0.42	28 / 0.39	33 / 0.35	35 / 0.33	36 / 0.33	38 / 0.32	38 / 0.32	39 / 0.31	41 / 0.3	42 / 0.29	44 / 0.28	47 / 0.26	49 / 0.25	49 / 0.25	51 / 0.25	52 / 0.24	54 / 0.24	55 / 0.24	
	110,000	60th	7 / 0.63	22 / 0.42	25 / 0.39	30 / 0.36	33 / 0.34	40 / 0.3	42 / 0.29	44 / 0.28	44 / 0.28	45 / 0.27	46 / 0.27	47 / 0.26	48 / 0.26	50 / 0.25	53 / 0.24	54 / 0.24	56 / 0.24	57 / 0.23	58 / 0.23	59 / 0.23	60 / 0.23	
	122,500	65th	7 / 0.63	22 / 0.42	25 / 0.38	33 / 0.34	37 / 0.31	42 / 0.28	45 / 0.27	46 / 0.26	47 / 0.26	48 / 0.26	49 / 0.25	50 / 0.25	52 / 0.24	54 / 0.24	57 / 0.24	58 / 0.24	61 / 0.24	62 / 0.24	63 / 0.24	64 / 0.24	65 / 0.25	
	132,400	70th	7 / 0.62	24 / 0.39	27 / 0.36	34 / 0.33	40 / 0.29	45 / 0.27	48 / 0.26	50 / 0.25	51 / 0.25	52 / 0.25	53 / 0.24	54 / 0.24	56 / 0.24	59 / 0.24	-	-	65 / 0.25	66 / 0.25	68 / 0.26	69 / 0.26	70 / 0.27	
	142,700	75th	7 / 0.62	29 / 0.35	34 / 0.31	41 / 0.28	49 / 0.25	53 / 0.25	54 / 0.24	56 / 0.24	58 / 0.24	58 / 0.24	-	-	-	-	-	-	-	-	73 / 0.28	74 / 0.29	75 / 0.3	
	160,200	80th	10 / 0.56	34 / 0.32	40 / 0.28	48 / 0.25	55 / 0.24	59 / 0.24	60 / 0.24	63 / 0.25	-	-	-	-	-	-	-	-	-	-	-	80 / 0.35	80 / 0.35	
	182,500	85th	10 / 0.56	40 / 0.28	49 / 0.25	56 / 0.24	65 / 0.25	68 / 0.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.41	
	214,800	90th	12 / 0.52	47 / 0.26	56 / 0.25	60 / 0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.31	56 / 0.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Mean Squared Error Results – Model Period B (1926-1975)

Table 86. Percent Drought Prediction and MSE of Drought Scenario 1 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 1			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	7,300	0th	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22
	18,100	5th	0 / 0.22	3 / 0.21	4 / 0.21	4 / 0.21	4 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21
	24,600	10th	3 / 0.21	5 / 0.21	6 / 0.21	6 / 0.21	7 / 0.21	8 / 0.21	8 / 0.21	8 / 0.21	9 / 0.21	9 / 0.21	9 / 0.21	9 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21
	28,600	15th	4 / 0.21	5 / 0.22	7 / 0.22	7 / 0.22	9 / 0.21	10 / 0.22	12 / 0.21	12 / 0.21	12 / 0.21	12 / 0.21	13 / 0.21	14 / 0.21	14 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21
	33,000	20th	4 / 0.21	6 / 0.22	7 / 0.22	9 / 0.22	11 / 0.22	13 / 0.22	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.22	17 / 0.21	17 / 0.21	18 / 0.21	19 / 0.21	19 / 0.21	19 / 0.21	19 / 0.22	20 / 0.21	20 / 0.21	20 / 0.21	20 / 0.21	20 / 0.21
	36,300	25th	4 / 0.21	6 / 0.22	9 / 0.22	11 / 0.22	12 / 0.22	15 / 0.22	16 / 0.22	16 / 0.22	17 / 0.21	17 / 0.22	19 / 0.21	20 / 0.2	21 / 0.21	22 / 0.21	23 / 0.2	23 / 0.21	24 / 0.21	25 / 0.2	25 / 0.2	25 / 0.2	25 / 0.2	25 / 0.2
	39,700	30th	4 / 0.21	7 / 0.22	10 / 0.22	12 / 0.22	15 / 0.22	18 / 0.21	19 / 0.21	20 / 0.21	20 / 0.21	21 / 0.21	23 / 0.2	23 / 0.2	25 / 0.2	26 / 0.2	26 / 0.2	27 / 0.2	28 / 0.2	29 / 0.2	30 / 0.19	30 / 0.19	30 / 0.19	30 / 0.19
	44,000	35th	4 / 0.21	9 / 0.22	11 / 0.22	14 / 0.22	17 / 0.21	20 / 0.21	22 / 0.21	22 / 0.21	23 / 0.2	24 / 0.2	26 / 0.2	27 / 0.19	28 / 0.19	29 / 0.19	31 / 0.19	32 / 0.19	33 / 0.19	34 / 0.18	35 / 0.18	35 / 0.18	35 / 0.18	35 / 0.18
	48,500	40th	4 / 0.21	10 / 0.22	12 / 0.22	16 / 0.22	19 / 0.21	22 / 0.21	24 / 0.2	24 / 0.21	25 / 0.2	26 / 0.2	28 / 0.2	30 / 0.19	31 / 0.19	33 / 0.19	35 / 0.18	36 / 0.18	37 / 0.18	38 / 0.17	39 / 0.17	40 / 0.17	40 / 0.17	40 / 0.17
	54,800	45th	4 / 0.21	14 / 0.21	17 / 0.2	21 / 0.21	23 / 0.2	26 / 0.2	28 / 0.19	29 / 0.19	29 / 0.19	30 / 0.19	32 / 0.18	33 / 0.18	36 / 0.18	37 / 0.17	39 / 0.17	40 / 0.17	41 / 0.16	43 / 0.16	44 / 0.15	44 / 0.15	45 / 0.15	45 / 0.15
	58,200	50th	4 / 0.21	15 / 0.21	17 / 0.2	23 / 0.2	24 / 0.2	29 / 0.19	32 / 0.18	33 / 0.18	35 / 0.18	35 / 0.18	36 / 0.18	37 / 0.17	39 / 0.17	41 / 0.16	43 / 0.16	44 / 0.15	45 / 0.15	47 / 0.15	48 / 0.14	49 / 0.14	50 / 0.14	50 / 0.14
	63,400	55th	7 / 0.22	16 / 0.21	19 / 0.2	24 / 0.2	28 / 0.19	33 / 0.18	35 / 0.18	36 / 0.17	38 / 0.17	38 / 0.17	39 / 0.17	41 / 0.16	42 / 0.16	44 / 0.15	47 / 0.15	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.12	55 / 0.12	55 / 0.12
	67,800	60th	7 / 0.22	22 / 0.19	25 / 0.18	30 / 0.18	33 / 0.17	40 / 0.16	42 / 0.16	44 / 0.15	44 / 0.15	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.12	56 / 0.12	57 / 0.12	58 / 0.11	59 / 0.11	60 / 0.11	60 / 0.11
	72,200	65th	7 / 0.22	22 / 0.19	25 / 0.18	33 / 0.18	37 / 0.16	42 / 0.16	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.12	58 / 0.11	61 / 0.11	62 / 0.11	63 / 0.1	64 / 0.1	65 / 0.1	65 / 0.1
	79,200	70th	7 / 0.22	24 / 0.18	27 / 0.17	34 / 0.17	40 / 0.16	45 / 0.15	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.12	59 / 0.12	-	-	65 / 0.1	66 / 0.1	68 / 0.1	69 / 0.09	70 / 0.09	70 / 0.09
	85,500	75th	7 / 0.22	29 / 0.16	34 / 0.16	41 / 0.16	49 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	58 / 0.12	58 / 0.12	-	-	-	-	-	-	-	-	73 / 0.1	74 / 0.1	75 / 0.09	75 / 0.09
	96,200	80th	10 / 0.2	34 / 0.16	40 / 0.15	48 / 0.14	55 / 0.13	59 / 0.12	60 / 0.12	63 / 0.11	-	-	-	-	-	-	-	-	-	-	-	80 / 0.11	80 / 0.11	80 / 0.11
	107,800	85th	10 / 0.2	40 / 0.15	49 / 0.14	56 / 0.13	65 / 0.13	68 / 0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.13	85 / 0.13
	120,800	90th	12 / 0.18	47 / 0.14	56 / 0.14	60 / 0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	171,000	95th	32 / 0.16	56 / 0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	317,000	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 87. Percent Drought Prediction and MSE of Drought Scenario 3 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 3			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3
	15,300	5th	0 / 0.3	3 / 0.29	4 / 0.28	4 / 0.28	4 / 0.29	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28
	30,700	10th	3 / 0.28	5 / 0.28	6 / 0.28	6 / 0.28	7 / 0.28	8 / 0.27	8 / 0.28	8 / 0.28	9 / 0.27	9 / 0.27	9 / 0.27	9 / 0.28	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27
	40,400	15th	4 / 0.28	5 / 0.29	7 / 0.28	7 / 0.29	9 / 0.28	10 / 0.27	12 / 0.26	12 / 0.27	12 / 0.27	12 / 0.27	13 / 0.26	14 / 0.26	14 / 0.26	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25
	45,800	20th	4 / 0.28	6 / 0.28	7 / 0.29	9 / 0.28	11 / 0.27	13 / 0.26	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	17 / 0.24	17 / 0.24	18 / 0.24	19 / 0.23	19 / 0.23	19 / 0.24	19 / 0.24	20 / 0.23	20 / 0.23	20 / 0.23	20 / 0.23	20 / 0.23
	52,900	25th	4 / 0.28	6 / 0.29	9 / 0.28	11 / 0.27	12 / 0.27	15 / 0.25	16 / 0.25	16 / 0.25	17 / 0.25	17 / 0.25	19 / 0.24	20 / 0.24	21 / 0.23	22 / 0.23	23 / 0.23	23 / 0.23	24 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22
	59,900	30th	4 / 0.28	7 / 0.28	10 / 0.29	12 / 0.28	15 / 0.27	18 / 0.25	19 / 0.25	20 / 0.25	20 / 0.25	21 / 0.24	23 / 0.23	23 / 0.23	25 / 0.23	26 / 0.22	26 / 0.22	27 / 0.22	28 / 0.22	29 / 0.21	30 / 0.21	30 / 0.21	30 / 0.21	30 / 0.21
	65,100	35th	4 / 0.28	9 / 0.28	11 / 0.28	14 / 0.26	17 / 0.26	20 / 0.24	22 / 0.24	22 / 0.24	23 / 0.23	24 / 0.23	26 / 0.22	27 / 0.22	28 / 0.21	29 / 0.21	31 / 0.2	32 / 0.2	33 / 0.19	34 / 0.19	35 / 0.19	35 / 0.19	35 / 0.19	35 / 0.19
	70,700	40th	4 / 0.28	10 / 0.28	12 / 0.28	16 / 0.26	19 / 0.25	22 / 0.23	24 / 0.23	24 / 0.23	25 / 0.22	26 / 0.22	28 / 0.21	30 / 0.2	31 / 0.2	33 / 0.19	35 / 0.18	36 / 0.18	37 / 0.18	38 / 0.17	39 / 0.17	40 / 0.17	40 / 0.17	40 / 0.17
	79,100	45th	4 / 0.28	14 / 0.26	17 / 0.26	21 / 0.25	23 / 0.24	26 / 0.22	28 / 0.21	29 / 0.21	29 / 0.21	30 / 0.2	32 / 0.19	33 / 0.19	36 / 0.18	37 / 0.17	39 / 0.17	40 / 0.17	41 / 0.16	43 / 0.16	44 / 0.15	44 / 0.15	45 / 0.15	45 / 0.15
	89,100	50th	4 / 0.28	15 / 0.26	17 / 0.26	23 / 0.24	24 / 0.23	29 / 0.21	32 / 0.19	33 / 0.19	35 / 0.18	35 / 0.18	36 / 0.18	37 / 0.18	39 / 0.17	41 / 0.16	43 / 0.16	44 / 0.15	45 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	50 / 0.14
	101,500	55th	7 / 0.29	16 / 0.26	19 / 0.26	24 / 0.24	28 / 0.22	33 / 0.19	35 / 0.18	36 / 0.18	38 / 0.17	38 / 0.17	39 / 0.17	41 / 0.16	42 / 0.16	44 / 0.15	47 / 0.14	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.13	55 / 0.13
	110,000	60th	7 / 0.29	22 / 0.24	25 / 0.23	30 / 0.21	33 / 0.2	40 / 0.17	42 / 0.16	44 / 0.15	44 / 0.15	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	57 / 0.12	58 / 0.12	59 / 0.12	60 / 0.12	60 / 0.12
	122,500	65th	7 / 0.29	22 / 0.24	25 / 0.23	33 / 0.2	37 / 0.18	42 / 0.16	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.12	58 / 0.12	61 / 0.12	62 / 0.12	63 / 0.12	64 / 0.12	65 / 0.12	65 / 0.12
	132,400	70th	7 / 0.29	24 / 0.23	27 / 0.22	34 / 0.2	40 / 0.17	45 / 0.15	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.13	59 / 0.12	-	-	65 / 0.12	66 / 0.12	68 / 0.12	69 / 0.12	70 / 0.12	70 / 0.12
	142,700	75th	7 / 0.29	29 / 0.21	34 / 0.2	41 / 0.17	49 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	58 / 0.12	58 / 0.12	-	-	-	-	-	-	-	-	73 / 0.13	74 / 0.13	75 / 0.13	75 / 0.13
	160,200	80th	10 / 0.28	34 / 0.18	40 / 0.17	48 / 0.14	55 / 0.12	59 / 0.12	60 / 0.12	63 / 0.12	-	-	-	-	-	-	-	-	-	-	-	80 / 0.15	80 / 0.15	80 / 0.15
	182,500	85th	10 / 0.28	40 / 0.16	49 / 0.14	56 / 0.12	65 / 0.11	68 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.17	85 / 0.17
	214,800	90th	12 / 0.26	47 / 0.14	56 / 0.12	60 / 0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.19	56 / 0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 88. Percent Drought Prediction and MSE of Drought Scenario 4 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 4			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18	0 / 0.18
	15,300	5th	0 / 0.18	3 / 0.17	4 / 0.17	4 / 0.17	4 / 0.17	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16
	30,700	10th	3 / 0.17	5 / 0.17	6 / 0.17	6 / 0.17	7 / 0.17	8 / 0.17	8 / 0.16	8 / 0.16	9 / 0.16	9 / 0.16	9 / 0.16	9 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17
	40,400	15th	4 / 0.17	5 / 0.18	7 / 0.18	7 / 0.18	9 / 0.17	10 / 0.17	12 / 0.17	12 / 0.17	12 / 0.17	12 / 0.17	13 / 0.17	14 / 0.17	14 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17
	45,800	20th	4 / 0.17	6 / 0.18	7 / 0.18	9 / 0.19	11 / 0.18	13 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	17 / 0.17	17 / 0.18	18 / 0.18	19 / 0.18	19 / 0.18	19 / 0.18	19 / 0.18	20 / 0.18	20 / 0.18	20 / 0.18	20 / 0.18	20 / 0.18
	52,900	25th	4 / 0.17	6 / 0.19	9 / 0.19	11 / 0.19	12 / 0.19	15 / 0.18	16 / 0.18	16 / 0.18	17 / 0.18	17 / 0.18	19 / 0.18	20 / 0.18	21 / 0.18	22 / 0.18	23 / 0.18	23 / 0.18	24 / 0.18	25 / 0.18	25 / 0.18	25 / 0.18	25 / 0.18	25 / 0.18
	59,900	30th	4 / 0.17	7 / 0.19	10 / 0.19	12 / 0.2	15 / 0.19	18 / 0.19	19 / 0.19	20 / 0.19	20 / 0.19	21 / 0.19	23 / 0.18	23 / 0.18	25 / 0.18	26 / 0.18	26 / 0.18	27 / 0.18	28 / 0.18	29 / 0.18	30 / 0.17	30 / 0.17	30 / 0.17	30 / 0.17
	65,100	35th	4 / 0.17	9 / 0.19	11 / 0.19	14 / 0.2	17 / 0.19	20 / 0.19	22 / 0.18	22 / 0.18	23 / 0.18	24 / 0.18	26 / 0.18	27 / 0.18	28 / 0.18	29 / 0.18	31 / 0.17	32 / 0.17	33 / 0.17	34 / 0.17	35 / 0.16	35 / 0.16	35 / 0.16	35 / 0.16
	70,700	40th	4 / 0.17	10 / 0.19	12 / 0.2	16 / 0.2	19 / 0.19	22 / 0.19	24 / 0.18	24 / 0.19	25 / 0.18	26 / 0.18	28 / 0.18	30 / 0.17	31 / 0.18	33 / 0.17	35 / 0.17	36 / 0.17	37 / 0.16	38 / 0.16	39 / 0.16	40 / 0.15	40 / 0.15	40 / 0.15
	79,100	45th	4 / 0.17	14 / 0.2	17 / 0.2	21 / 0.19	23 / 0.19	26 / 0.19	28 / 0.18	29 / 0.18	29 / 0.18	30 / 0.18	32 / 0.17	33 / 0.17	36 / 0.17	37 / 0.17	39 / 0.16	40 / 0.16	41 / 0.16	43 / 0.15	44 / 0.15	44 / 0.15	44 / 0.15	45 / 0.15
	89,100	50th	4 / 0.17	15 / 0.19	17 / 0.2	23 / 0.19	24 / 0.19	29 / 0.18	32 / 0.17	33 / 0.17	35 / 0.17	35 / 0.17	36 / 0.17	37 / 0.17	39 / 0.16	41 / 0.16	43 / 0.15	44 / 0.15	45 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	50 / 0.14
	101,500	55th	7 / 0.19	16 / 0.2	19 / 0.2	24 / 0.19	28 / 0.18	33 / 0.18	35 / 0.17	36 / 0.17	38 / 0.17	38 / 0.17	39 / 0.16	41 / 0.16	42 / 0.16	44 / 0.15	47 / 0.14	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.12	55 / 0.12
	110,000	60th	7 / 0.19	22 / 0.2	25 / 0.19	30 / 0.19	33 / 0.18	40 / 0.17	42 / 0.16	44 / 0.15	44 / 0.15	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.12	56 / 0.12	57 / 0.12	58 / 0.12	59 / 0.11	60 / 0.11	60 / 0.11
	122,500	65th	7 / 0.19	22 / 0.2	25 / 0.2	33 / 0.19	37 / 0.17	42 / 0.16	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.12	57 / 0.12	58 / 0.11	61 / 0.11	62 / 0.11	63 / 0.1	64 / 0.1	65 / 0.1	65 / 0.1
	132,400	70th	7 / 0.19	24 / 0.19	27 / 0.19	34 / 0.18	40 / 0.16	45 / 0.15	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.12	59 / 0.11	-	-	65 / 0.1	66 / 0.09	68 / 0.09	69 / 0.09	70 / 0.09	70 / 0.09
	142,700	75th	7 / 0.19	29 / 0.18	34 / 0.18	41 / 0.16	49 / 0.14	53 / 0.13	54 / 0.12	56 / 0.12	58 / 0.11	58 / 0.11	-	-	-	-	-	-	-	-	73 / 0.08	74 / 0.08	75 / 0.08	75 / 0.08
	160,200	80th	10 / 0.17	34 / 0.17	40 / 0.16	48 / 0.14	55 / 0.12	59 / 0.11	60 / 0.11	63 / 0.1	-	-	-	-	-	-	-	-	-	-	-	80 / 0.09	80 / 0.09	80 / 0.09
	182,500	85th	10 / 0.16	40 / 0.15	49 / 0.14	56 / 0.13	65 / 0.11	68 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.09	85 / 0.09
	214,800	90th	12 / 0.15	47 / 0.14	56 / 0.13	60 / 0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.17	56 / 0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 89. Percent Drought Prediction and MSE of Drought Scenario 6 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 6			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21
	15,300	5th	0 / 0.21	3 / 0.2	4 / 0.2	4 / 0.2	4 / 0.21	5 / 0.2	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21
	30,700	10th	3 / 0.2	5 / 0.2	6 / 0.21	6 / 0.21	7 / 0.21	8 / 0.21	8 / 0.21	8 / 0.21	9 / 0.21	9 / 0.21	9 / 0.21	9 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2
	40,400	15th	4 / 0.2	5 / 0.21	7 / 0.21	7 / 0.21	9 / 0.21	10 / 0.21	12 / 0.21	12 / 0.21	12 / 0.21	12 / 0.21	13 / 0.2	14 / 0.2	14 / 0.2	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19
	45,800	20th	4 / 0.2	6 / 0.2	7 / 0.22	9 / 0.22	11 / 0.21	13 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	17 / 0.2	17 / 0.2	18 / 0.19	19 / 0.19	19 / 0.19	19 / 0.19	19 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19
	52,900	25th	4 / 0.2	6 / 0.2	9 / 0.21	11 / 0.21	12 / 0.21	15 / 0.21	16 / 0.21	16 / 0.21	17 / 0.21	17 / 0.21	19 / 0.2	20 / 0.2	21 / 0.19	22 / 0.19	23 / 0.18	23 / 0.18	24 / 0.18	25 / 0.18	25 / 0.17	25 / 0.17	25 / 0.17	25 / 0.17
	59,900	30th	4 / 0.2	7 / 0.2	10 / 0.21	12 / 0.22	15 / 0.21	18 / 0.21	19 / 0.2	20 / 0.2	20 / 0.2	21 / 0.2	23 / 0.19	23 / 0.19	25 / 0.18	26 / 0.18	26 / 0.18	27 / 0.18	28 / 0.17	29 / 0.17	30 / 0.16	30 / 0.16	30 / 0.16	30 / 0.16
	65,100	35th	4 / 0.2	9 / 0.21	11 / 0.21	14 / 0.21	17 / 0.21	20 / 0.21	22 / 0.2	22 / 0.2	23 / 0.2	24 / 0.19	26 / 0.19	27 / 0.18	28 / 0.18	29 / 0.18	31 / 0.17	32 / 0.17	33 / 0.17	34 / 0.16	35 / 0.16	35 / 0.16	35 / 0.16	35 / 0.16
	70,700	40th	4 / 0.2	10 / 0.21	12 / 0.21	16 / 0.22	19 / 0.21	22 / 0.21	24 / 0.2	24 / 0.2	25 / 0.2	26 / 0.2	28 / 0.19	30 / 0.18	31 / 0.18	33 / 0.17	35 / 0.17	36 / 0.16	37 / 0.16	38 / 0.16	39 / 0.15	40 / 0.15	40 / 0.15	40 / 0.15
	79,100	45th	4 / 0.2	14 / 0.2	17 / 0.21	21 / 0.21	23 / 0.21	26 / 0.2	28 / 0.19	29 / 0.19	29 / 0.19	30 / 0.19	32 / 0.18	33 / 0.18	36 / 0.16	37 / 0.16	39 / 0.16	40 / 0.16	41 / 0.15	43 / 0.15	44 / 0.14	44 / 0.14	45 / 0.14	45 / 0.14
	89,100	50th	4 / 0.2	15 / 0.2	17 / 0.21	23 / 0.21	24 / 0.2	29 / 0.19	32 / 0.18	33 / 0.18	35 / 0.17	35 / 0.17	36 / 0.16	37 / 0.16	39 / 0.16	41 / 0.15	43 / 0.15	44 / 0.15	45 / 0.14	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	50 / 0.14
	101,500	55th	7 / 0.2	16 / 0.21	19 / 0.21	24 / 0.21	28 / 0.19	33 / 0.18	35 / 0.18	36 / 0.17	38 / 0.16	38 / 0.16	39 / 0.16	41 / 0.15	42 / 0.15	44 / 0.15	47 / 0.14	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.13	55 / 0.13
	110,000	60th	7 / 0.2	22 / 0.17	25 / 0.18	30 / 0.17	33 / 0.17	40 / 0.15	42 / 0.15	44 / 0.14	44 / 0.14	45 / 0.14	46 / 0.14	47 / 0.14	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.13	56 / 0.13	57 / 0.13	58 / 0.13	59 / 0.13	60 / 0.13	60 / 0.13
	122,500	65th	7 / 0.2	22 / 0.18	25 / 0.18	33 / 0.16	37 / 0.15	42 / 0.15	45 / 0.14	46 / 0.14	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.13	58 / 0.13	61 / 0.13	62 / 0.13	63 / 0.13	64 / 0.13	65 / 0.13	65 / 0.13
	132,400	70th	7 / 0.2	24 / 0.17	27 / 0.18	34 / 0.16	40 / 0.15	45 / 0.14	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.13	59 / 0.13	-	-	65 / 0.12	66 / 0.12	68 / 0.12	69 / 0.12	70 / 0.12	70 / 0.12
	142,700	75th	7 / 0.2	29 / 0.16	34 / 0.16	41 / 0.15	49 / 0.14	53 / 0.13	54 / 0.13	56 / 0.13	58 / 0.13	58 / 0.13	-	-	-	-	-	-	-	-	73 / 0.12	74 / 0.13	75 / 0.13	75 / 0.13
	160,200	80th	10 / 0.17	34 / 0.15	40 / 0.15	48 / 0.14	55 / 0.13	59 / 0.13	60 / 0.13	63 / 0.13	-	-	-	-	-	-	-	-	-	-	-	80 / 0.14	80 / 0.14	80 / 0.14
	182,500	85th	10 / 0.17	40 / 0.14	49 / 0.14	56 / 0.14	65 / 0.15	68 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.15	85 / 0.15
	214,800	90th	12 / 0.16	47 / 0.14	56 / 0.13	60 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.16	56 / 0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 90. Percent Drought Prediction and MSE of Drought Scenario 7 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 7			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22
	15,300	5th	0 / 0.22	3 / 0.21	4 / 0.22	4 / 0.22	4 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22	5 / 0.22
	30,700	10th	3 / 0.21	5 / 0.21	6 / 0.22	6 / 0.22	7 / 0.22	8 / 0.22	8 / 0.22	8 / 0.22	9 / 0.22	9 / 0.22	9 / 0.22	9 / 0.22	10 / 0.22	10 / 0.22	10 / 0.22	10 / 0.22	10 / 0.22	10 / 0.22	10 / 0.22	10 / 0.22	10 / 0.22	10 / 0.22
	40,400	15th	4 / 0.21	5 / 0.22	7 / 0.22	7 / 0.23	9 / 0.22	10 / 0.22	12 / 0.22	12 / 0.22	12 / 0.22	12 / 0.22	13 / 0.22	14 / 0.22	14 / 0.22	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21
	45,800	20th	4 / 0.21	6 / 0.21	7 / 0.22	9 / 0.22	11 / 0.21	13 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	17 / 0.2	17 / 0.2	18 / 0.2	19 / 0.2	19 / 0.2	19 / 0.2	19 / 0.2	20 / 0.2	20 / 0.2	20 / 0.2	20 / 0.2	20 / 0.2
	52,900	25th	4 / 0.21	6 / 0.22	9 / 0.22	11 / 0.22	12 / 0.21	15 / 0.2	16 / 0.2	16 / 0.2	17 / 0.2	17 / 0.2	19 / 0.2	20 / 0.2	21 / 0.2	22 / 0.19	23 / 0.19	23 / 0.19	24 / 0.19	25 / 0.19	25 / 0.19	25 / 0.19	25 / 0.19	25 / 0.19
	59,900	30th	4 / 0.21	7 / 0.22	10 / 0.21	12 / 0.21	15 / 0.21	18 / 0.2	19 / 0.2	20 / 0.2	20 / 0.2	21 / 0.2	23 / 0.19	23 / 0.2	25 / 0.19	26 / 0.19	26 / 0.19	27 / 0.19	28 / 0.18	29 / 0.18	30 / 0.18	30 / 0.18	30 / 0.18	30 / 0.18
	65,100	35th	4 / 0.21	9 / 0.22	11 / 0.21	14 / 0.21	17 / 0.21	20 / 0.2	22 / 0.2	22 / 0.2	23 / 0.2	24 / 0.2	26 / 0.19	27 / 0.19	28 / 0.19	29 / 0.19	31 / 0.18	32 / 0.18	33 / 0.18	34 / 0.17	35 / 0.17	35 / 0.17	35 / 0.17	35 / 0.17
	70,700	40th	4 / 0.21	10 / 0.21	12 / 0.2	16 / 0.2	19 / 0.2	22 / 0.2	24 / 0.19	24 / 0.2	25 / 0.2	26 / 0.2	28 / 0.19	30 / 0.18	31 / 0.18	33 / 0.18	35 / 0.17	36 / 0.17	37 / 0.17	38 / 0.16	39 / 0.16	40 / 0.16	40 / 0.16	40 / 0.16
	79,100	45th	4 / 0.21	14 / 0.22	17 / 0.2	21 / 0.21	23 / 0.2	26 / 0.19	28 / 0.19	29 / 0.19	29 / 0.19	30 / 0.19	32 / 0.18	33 / 0.18	36 / 0.17	37 / 0.17	39 / 0.16	40 / 0.16	41 / 0.16	43 / 0.15	44 / 0.15	44 / 0.15	45 / 0.15	45 / 0.15
	89,100	50th	4 / 0.21	15 / 0.21	17 / 0.2	23 / 0.21	24 / 0.2	29 / 0.19	32 / 0.18	33 / 0.18	35 / 0.18	35 / 0.18	36 / 0.18	37 / 0.17	39 / 0.17	41 / 0.16	43 / 0.15	44 / 0.15	45 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	50 / 0.14
	101,500	55th	7 / 0.23	16 / 0.22	19 / 0.2	24 / 0.21	28 / 0.19	33 / 0.18	35 / 0.18	36 / 0.18	38 / 0.17	38 / 0.17	39 / 0.17	41 / 0.16	42 / 0.16	44 / 0.15	47 / 0.14	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.12	55 / 0.12
	110,000	60th	7 / 0.23	22 / 0.21	25 / 0.19	30 / 0.19	33 / 0.18	40 / 0.17	42 / 0.16	44 / 0.16	44 / 0.16	45 / 0.15	46 / 0.15	47 / 0.15	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	57 / 0.12	58 / 0.12	59 / 0.12	60 / 0.11	60 / 0.11
	122,500	65th	7 / 0.23	22 / 0.21	25 / 0.19	33 / 0.19	37 / 0.17	42 / 0.16	45 / 0.15	46 / 0.15	47 / 0.15	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.12	58 / 0.12	61 / 0.11	62 / 0.11	63 / 0.11	64 / 0.11	65 / 0.11	65 / 0.11
	132,400	70th	7 / 0.23	24 / 0.2	27 / 0.18	34 / 0.18	40 / 0.16	45 / 0.15	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.12	59 / 0.11	-	-	65 / 0.11	66 / 0.1	68 / 0.1	69 / 0.1	70 / 0.1	70 / 0.1
	142,700	75th	7 / 0.23	29 / 0.18	34 / 0.16	41 / 0.16	49 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	58 / 0.12	58 / 0.12	-	-	-	-	-	-	-	-	73 / 0.1	74 / 0.1	75 / 0.1	75 / 0.1
	160,200	80th	10 / 0.19	34 / 0.17	40 / 0.14	48 / 0.14	55 / 0.13	59 / 0.12	60 / 0.12	63 / 0.11	-	-	-	-	-	-	-	-	-	-	-	80 / 0.11	80 / 0.11	80 / 0.11
	182,500	85th	10 / 0.19	40 / 0.15	49 / 0.14	56 / 0.13	65 / 0.12	68 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.13	85 / 0.13
	214,800	90th	12 / 0.17	47 / 0.14	56 / 0.13	60 / 0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.13	56 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 91. Percent Drought Prediction and MSE of Drought Scenario 8 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 8			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23	0 / 0.23
	15,300	5th	0 / 0.23	3 / 0.22	4 / 0.22	4 / 0.23	4 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23
	30,700	10th	3 / 0.22	5 / 0.22	6 / 0.23	6 / 0.23	7 / 0.23	8 / 0.23	8 / 0.23	8 / 0.23	9 / 0.23	9 / 0.23	9 / 0.23	9 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23
	40,400	15th	4 / 0.22	5 / 0.23	7 / 0.23	7 / 0.23	9 / 0.23	10 / 0.23	12 / 0.23	12 / 0.23	12 / 0.23	12 / 0.23	13 / 0.22	14 / 0.22	14 / 0.23	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22
	45,800	20th	4 / 0.22	6 / 0.22	7 / 0.23	9 / 0.23	11 / 0.22	13 / 0.22	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.22	17 / 0.21	17 / 0.21	18 / 0.21	19 / 0.21	19 / 0.21	19 / 0.21	19 / 0.21	20 / 0.21	20 / 0.21	20 / 0.21	20 / 0.21	20 / 0.21
	52,900	25th	4 / 0.22	6 / 0.23	9 / 0.22	11 / 0.22	12 / 0.22	15 / 0.21	16 / 0.21	16 / 0.21	17 / 0.21	17 / 0.21	19 / 0.2	20 / 0.2	21 / 0.2	22 / 0.2	23 / 0.2	23 / 0.2	24 / 0.19	25 / 0.19	25 / 0.19	25 / 0.19	25 / 0.19	
	59,900	30th	4 / 0.22	7 / 0.23	10 / 0.22	12 / 0.22	15 / 0.22	18 / 0.21	19 / 0.21	20 / 0.21	20 / 0.21	21 / 0.21	23 / 0.2	23 / 0.2	25 / 0.2	26 / 0.19	26 / 0.19	27 / 0.19	28 / 0.19	29 / 0.19	30 / 0.18	30 / 0.18	30 / 0.18	
	65,100	35th	4 / 0.22	9 / 0.23	11 / 0.22	14 / 0.22	17 / 0.21	20 / 0.21	22 / 0.2	22 / 0.21	23 / 0.2	24 / 0.2	26 / 0.2	27 / 0.19	28 / 0.19	29 / 0.19	31 / 0.18	32 / 0.18	33 / 0.18	34 / 0.18	35 / 0.17	35 / 0.17	35 / 0.17	
	70,700	40th	4 / 0.22	10 / 0.22	12 / 0.21	16 / 0.21	19 / 0.21	22 / 0.2	24 / 0.2	24 / 0.2	25 / 0.2	26 / 0.2	28 / 0.19	30 / 0.19	31 / 0.18	33 / 0.18	35 / 0.17	36 / 0.17	37 / 0.17	38 / 0.17	39 / 0.16	40 / 0.16	40 / 0.16	
	79,100	45th	4 / 0.22	14 / 0.22	17 / 0.21	21 / 0.22	23 / 0.21	26 / 0.2	28 / 0.2	29 / 0.19	29 / 0.2	30 / 0.19	32 / 0.19	33 / 0.18	36 / 0.18	37 / 0.17	39 / 0.17	40 / 0.16	41 / 0.16	43 / 0.15	44 / 0.15	44 / 0.15	45 / 0.15	
	89,100	50th	4 / 0.22	15 / 0.22	17 / 0.21	23 / 0.21	24 / 0.21	29 / 0.19	32 / 0.19	33 / 0.18	35 / 0.18	35 / 0.18	36 / 0.18	37 / 0.18	39 / 0.17	41 / 0.16	43 / 0.16	44 / 0.15	45 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	
	101,500	55th	7 / 0.23	16 / 0.23	19 / 0.21	24 / 0.21	28 / 0.19	33 / 0.19	35 / 0.18	36 / 0.18	38 / 0.18	38 / 0.18	39 / 0.17	41 / 0.17	42 / 0.16	44 / 0.16	47 / 0.15	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.12	
	110,000	60th	7 / 0.23	22 / 0.21	25 / 0.19	30 / 0.2	33 / 0.18	40 / 0.17	42 / 0.16	44 / 0.16	44 / 0.16	45 / 0.15	46 / 0.15	47 / 0.15	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	57 / 0.12	58 / 0.12	59 / 0.11	60 / 0.11	
	122,500	65th	7 / 0.23	22 / 0.21	25 / 0.19	33 / 0.19	37 / 0.17	42 / 0.16	45 / 0.15	46 / 0.15	47 / 0.15	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.12	58 / 0.12	61 / 0.11	62 / 0.11	63 / 0.11	64 / 0.11	65 / 0.11	
	132,400	70th	7 / 0.23	24 / 0.2	27 / 0.19	34 / 0.19	40 / 0.16	45 / 0.15	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.12	59 / 0.11	-	-	65 / 0.11	66 / 0.11	68 / 0.1	69 / 0.1	70 / 0.1	
	142,700	75th	7 / 0.23	29 / 0.18	34 / 0.16	41 / 0.16	49 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	58 / 0.12	58 / 0.12	-	-	-	-	-	-	-	-	73 / 0.1	74 / 0.1	75 / 0.1	
	160,200	80th	10 / 0.2	34 / 0.16	40 / 0.14	48 / 0.14	55 / 0.13	59 / 0.12	60 / 0.12	63 / 0.11	-	-	-	-	-	-	-	-	-	-	-	80 / 0.12	80 / 0.12	
	182,500	85th	10 / 0.2	40 / 0.15	49 / 0.14	56 / 0.13	65 / 0.12	68 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.14	
	214,800	90th	12 / 0.18	47 / 0.14	56 / 0.13	60 / 0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.12	56 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 92. Percent Drought Prediction and MSE of Drought Scenario 9 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 9			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29	0 / 0.29
	15,300	5th	0 / 0.29	3 / 0.27	4 / 0.27	4 / 0.28	4 / 0.28	5 / 0.27	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28
	30,700	10th	3 / 0.27	5 / 0.27	6 / 0.27	6 / 0.27	7 / 0.27	8 / 0.26	8 / 0.27	8 / 0.27	9 / 0.26	9 / 0.26	9 / 0.26	9 / 0.27	10 / 0.26	10 / 0.26	10 / 0.26	10 / 0.26	10 / 0.26	10 / 0.26	10 / 0.26	10 / 0.26	10 / 0.26	10 / 0.26
	40,400	15th	4 / 0.27	5 / 0.28	7 / 0.27	7 / 0.27	9 / 0.26	10 / 0.26	12 / 0.26	12 / 0.26	12 / 0.26	12 / 0.26	13 / 0.25	14 / 0.25	14 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.25
	45,800	20th	4 / 0.27	6 / 0.27	7 / 0.26	9 / 0.26	11 / 0.25	13 / 0.25	15 / 0.24	15 / 0.24	15 / 0.24	15 / 0.24	17 / 0.23	17 / 0.24	18 / 0.23	19 / 0.23	19 / 0.23	19 / 0.23	19 / 0.23	20 / 0.23	20 / 0.23	20 / 0.23	20 / 0.23	20 / 0.23
	52,900	25th	4 / 0.27	6 / 0.28	9 / 0.25	11 / 0.25	12 / 0.25	15 / 0.24	16 / 0.23	16 / 0.23	17 / 0.23	17 / 0.23	19 / 0.22	20 / 0.22	21 / 0.22	22 / 0.22	23 / 0.22	23 / 0.22	24 / 0.21	25 / 0.21	25 / 0.21	25 / 0.21	25 / 0.21	25 / 0.21
	59,900	30th	4 / 0.27	7 / 0.27	10 / 0.24	12 / 0.24	15 / 0.24	18 / 0.23	19 / 0.22	20 / 0.22	20 / 0.22	21 / 0.22	23 / 0.21	23 / 0.21	25 / 0.2	26 / 0.2	26 / 0.2	27 / 0.2	28 / 0.2	29 / 0.19	30 / 0.19	30 / 0.19	30 / 0.19	30 / 0.19
	65,100	35th	4 / 0.27	9 / 0.25	11 / 0.23	14 / 0.23	17 / 0.23	20 / 0.22	22 / 0.21	22 / 0.21	23 / 0.21	24 / 0.21	26 / 0.2	27 / 0.2	28 / 0.2	29 / 0.19	31 / 0.19	32 / 0.18	33 / 0.18	34 / 0.18	35 / 0.18	35 / 0.18	35 / 0.18	35 / 0.18
	70,700	40th	4 / 0.27	10 / 0.24	12 / 0.22	16 / 0.22	19 / 0.22	22 / 0.21	24 / 0.21	24 / 0.21	25 / 0.2	26 / 0.2	28 / 0.19	30 / 0.19	31 / 0.19	33 / 0.18	35 / 0.17	36 / 0.17	37 / 0.17	38 / 0.17	39 / 0.16	40 / 0.16	40 / 0.16	40 / 0.16
	79,100	45th	4 / 0.27	14 / 0.22	17 / 0.21	21 / 0.22	23 / 0.21	26 / 0.2	28 / 0.2	29 / 0.19	29 / 0.19	30 / 0.19	32 / 0.18	33 / 0.18	36 / 0.17	37 / 0.17	39 / 0.16	40 / 0.16	41 / 0.16	43 / 0.15	44 / 0.15	44 / 0.15	45 / 0.15	45 / 0.15
	89,100	50th	4 / 0.27	15 / 0.22	17 / 0.21	23 / 0.21	24 / 0.21	29 / 0.19	32 / 0.19	33 / 0.18	35 / 0.18	35 / 0.18	36 / 0.18	37 / 0.17	39 / 0.17	41 / 0.16	43 / 0.15	44 / 0.15	45 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	50 / 0.14
	101,500	55th	7 / 0.28	16 / 0.23	19 / 0.21	24 / 0.21	28 / 0.2	33 / 0.18	35 / 0.17	36 / 0.17	38 / 0.17	38 / 0.17	39 / 0.17	41 / 0.16	42 / 0.16	44 / 0.15	47 / 0.14	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.13	55 / 0.13
	110,000	60th	7 / 0.28	22 / 0.21	25 / 0.19	30 / 0.19	33 / 0.18	40 / 0.16	42 / 0.16	44 / 0.15	44 / 0.15	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	57 / 0.12	58 / 0.12	59 / 0.12	60 / 0.12	60 / 0.12
	122,500	65th	7 / 0.28	22 / 0.21	25 / 0.19	33 / 0.19	37 / 0.17	42 / 0.15	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.12	58 / 0.12	61 / 0.12	62 / 0.12	63 / 0.12	64 / 0.12	65 / 0.12	65 / 0.12
	132,400	70th	7 / 0.28	24 / 0.2	27 / 0.18	34 / 0.18	40 / 0.16	45 / 0.15	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.13	59 / 0.12	-	-	65 / 0.12	66 / 0.12	68 / 0.12	69 / 0.12	70 / 0.12	70 / 0.12
	142,700	75th	7 / 0.28	29 / 0.17	34 / 0.15	41 / 0.15	49 / 0.14	53 / 0.13	54 / 0.13	56 / 0.13	58 / 0.13	58 / 0.13	58 / 0.13	-	-	-	-	-	-	-	73 / 0.13	74 / 0.13	75 / 0.13	75 / 0.13
	160,200	80th	10 / 0.24	34 / 0.16	40 / 0.14	48 / 0.14	55 / 0.13	59 / 0.13	60 / 0.13	63 / 0.13	-	-	-	-	-	-	-	-	-	-	-	80 / 0.15	80 / 0.15	80 / 0.15
	182,500	85th	10 / 0.24	40 / 0.15	49 / 0.14	56 / 0.13	65 / 0.13	68 / 0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.18	85 / 0.18
	214,800	90th	12 / 0.22	47 / 0.14	56 / 0.14	60 / 0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.14	56 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 93. Percent Drought Prediction and MSE of Drought Scenario 10 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 10			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3	0 / 0.3
	15,300	5th	0 / 0.3	3 / 0.29	4 / 0.29	4 / 0.29	4 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29	5 / 0.29
	30,700	10th	3 / 0.28	5 / 0.28	6 / 0.28	6 / 0.28	7 / 0.28	8 / 0.28	8 / 0.28	8 / 0.28	9 / 0.28	9 / 0.28	9 / 0.28	9 / 0.28	10 / 0.28	10 / 0.28	10 / 0.28	10 / 0.28	10 / 0.28	10 / 0.28	10 / 0.28	10 / 0.28	10 / 0.28	10 / 0.28
	40,400	15th	4 / 0.28	5 / 0.29	7 / 0.28	7 / 0.28	9 / 0.27	10 / 0.27	12 / 0.27	12 / 0.27	12 / 0.27	12 / 0.27	13 / 0.27	14 / 0.26	14 / 0.27	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26
	45,800	20th	4 / 0.28	6 / 0.28	7 / 0.28	9 / 0.27	11 / 0.26	13 / 0.26	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.26	17 / 0.25	17 / 0.25	18 / 0.24	19 / 0.24	19 / 0.24	19 / 0.24	19 / 0.24	20 / 0.24	20 / 0.24	20 / 0.24	20 / 0.24	20 / 0.24
	52,900	25th	4 / 0.28	6 / 0.29	9 / 0.27	11 / 0.26	12 / 0.26	15 / 0.25	16 / 0.24	16 / 0.24	17 / 0.24	17 / 0.24	19 / 0.23	20 / 0.23	21 / 0.23	22 / 0.23	23 / 0.22	23 / 0.22	24 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22
	59,900	30th	4 / 0.28	7 / 0.28	10 / 0.25	12 / 0.25	15 / 0.25	18 / 0.24	19 / 0.23	20 / 0.23	20 / 0.23	21 / 0.23	23 / 0.22	23 / 0.22	25 / 0.21	26 / 0.21	26 / 0.21	27 / 0.21	28 / 0.2	29 / 0.2	30 / 0.2	30 / 0.2	30 / 0.2	30 / 0.2
	65,100	35th	4 / 0.28	9 / 0.26	11 / 0.25	14 / 0.24	17 / 0.24	20 / 0.23	22 / 0.22	22 / 0.22	23 / 0.22	24 / 0.22	26 / 0.21	27 / 0.21	28 / 0.2	29 / 0.2	31 / 0.19	32 / 0.19	33 / 0.19	34 / 0.18	35 / 0.18	35 / 0.18	35 / 0.18	35 / 0.18
	70,700	40th	4 / 0.28	10 / 0.25	12 / 0.24	16 / 0.23	19 / 0.23	22 / 0.22	24 / 0.22	24 / 0.22	25 / 0.21	26 / 0.21	28 / 0.2	30 / 0.19	31 / 0.19	33 / 0.19	35 / 0.18	36 / 0.18	37 / 0.17	38 / 0.17	39 / 0.17	40 / 0.16	40 / 0.16	40 / 0.16
	79,100	45th	4 / 0.28	14 / 0.24	17 / 0.22	21 / 0.22	23 / 0.22	26 / 0.21	28 / 0.2	29 / 0.2	29 / 0.2	30 / 0.2	32 / 0.19	33 / 0.19	36 / 0.18	37 / 0.17	39 / 0.17	40 / 0.16	41 / 0.16	43 / 0.15	44 / 0.15	44 / 0.15	45 / 0.15	45 / 0.15
	89,100	50th	4 / 0.28	15 / 0.23	17 / 0.22	23 / 0.22	24 / 0.21	29 / 0.2	32 / 0.19	33 / 0.19	35 / 0.18	35 / 0.18	36 / 0.18	37 / 0.18	39 / 0.17	41 / 0.16	43 / 0.16	44 / 0.15	45 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	50 / 0.14
	101,500	55th	7 / 0.29	16 / 0.24	19 / 0.22	24 / 0.22	28 / 0.2	33 / 0.18	35 / 0.18	36 / 0.17	38 / 0.17	38 / 0.17	39 / 0.17	41 / 0.16	42 / 0.16	44 / 0.15	47 / 0.14	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.13	55 / 0.13
	110,000	60th	7 / 0.29	22 / 0.21	25 / 0.2	30 / 0.2	33 / 0.19	40 / 0.16	42 / 0.16	44 / 0.15	44 / 0.15	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	57 / 0.12	58 / 0.12	59 / 0.12	60 / 0.12	60 / 0.12
	122,500	65th	7 / 0.29	22 / 0.21	25 / 0.2	33 / 0.19	37 / 0.17	42 / 0.15	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.12	58 / 0.12	61 / 0.12	62 / 0.12	63 / 0.12	64 / 0.12	65 / 0.12	65 / 0.12
	132,400	70th	7 / 0.29	24 / 0.2	27 / 0.18	34 / 0.18	40 / 0.16	45 / 0.15	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.13	59 / 0.12	-	-	65 / 0.12	66 / 0.12	68 / 0.12	69 / 0.12	70 / 0.12	70 / 0.12
	142,700	75th	7 / 0.29	29 / 0.18	34 / 0.16	41 / 0.15	49 / 0.14	53 / 0.13	54 / 0.13	56 / 0.13	58 / 0.13	58 / 0.13	58 / 0.13	-	-	-	-	-	-	-	73 / 0.13	74 / 0.13	75 / 0.13	75 / 0.13
	160,200	80th	10 / 0.25	34 / 0.16	40 / 0.14	48 / 0.14	55 / 0.13	59 / 0.13	60 / 0.13	63 / 0.13	-	-	-	-	-	-	-	-	-	-	-	80 / 0.16	80 / 0.16	80 / 0.16
	182,500	85th	10 / 0.25	40 / 0.15	49 / 0.14	56 / 0.13	65 / 0.13	68 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.19	85 / 0.19
	214,800	90th	12 / 0.23	47 / 0.14	56 / 0.14	60 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.15	56 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 94. Percent Drought Prediction and MSE of Drought Scenario 11 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 11			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32
	15,300	5th	0 / 0.32	3 / 0.3	4 / 0.3	4 / 0.3	4 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3	5 / 0.3
	30,700	10th	3 / 0.3	5 / 0.3	6 / 0.29	6 / 0.3	7 / 0.29	8 / 0.29	8 / 0.29	8 / 0.29	9 / 0.29	9 / 0.29	9 / 0.29	9 / 0.29	10 / 0.29	10 / 0.29	10 / 0.29	10 / 0.29	10 / 0.29	10 / 0.29	10 / 0.29	10 / 0.29	10 / 0.29	10 / 0.29
	40,400	15th	4 / 0.29	5 / 0.3	7 / 0.29	7 / 0.29	9 / 0.28	10 / 0.28	12 / 0.28	12 / 0.28	12 / 0.28	12 / 0.28	13 / 0.28	14 / 0.27	14 / 0.27	15 / 0.27	15 / 0.27	15 / 0.27	15 / 0.27	15 / 0.27	15 / 0.27	15 / 0.27	15 / 0.27	15 / 0.27
	45,800	20th	4 / 0.29	6 / 0.3	7 / 0.29	9 / 0.28	11 / 0.27	13 / 0.27	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	17 / 0.25	17 / 0.26	18 / 0.25	19 / 0.25	19 / 0.25	19 / 0.25	19 / 0.25	20 / 0.25	20 / 0.25	20 / 0.25	20 / 0.25	20 / 0.25
	52,900	25th	4 / 0.29	6 / 0.3	9 / 0.28	11 / 0.27	12 / 0.27	15 / 0.26	16 / 0.25	16 / 0.25	17 / 0.25	17 / 0.25	19 / 0.24	20 / 0.24	21 / 0.24	22 / 0.23	23 / 0.23	23 / 0.23	24 / 0.23	25 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22
	59,900	30th	4 / 0.29	7 / 0.29	10 / 0.26	12 / 0.26	15 / 0.26	18 / 0.24	19 / 0.24	20 / 0.24	20 / 0.24	21 / 0.23	23 / 0.23	23 / 0.23	25 / 0.22	26 / 0.22	26 / 0.22	27 / 0.21	28 / 0.21	29 / 0.21	30 / 0.2	30 / 0.2	30 / 0.2	
	65,100	35th	4 / 0.29	9 / 0.27	11 / 0.26	14 / 0.25	17 / 0.25	20 / 0.24	22 / 0.23	22 / 0.23	23 / 0.22	24 / 0.22	26 / 0.22	27 / 0.21	28 / 0.21	29 / 0.21	31 / 0.2	32 / 0.19	33 / 0.19	34 / 0.19	35 / 0.18	35 / 0.18	35 / 0.18	
	70,700	40th	4 / 0.29	10 / 0.26	12 / 0.25	16 / 0.24	19 / 0.24	22 / 0.23	24 / 0.22	24 / 0.22	25 / 0.22	26 / 0.22	28 / 0.21	30 / 0.2	31 / 0.2	33 / 0.19	35 / 0.18	36 / 0.18	37 / 0.18	38 / 0.17	39 / 0.17	40 / 0.17	40 / 0.17	
	79,100	45th	4 / 0.29	14 / 0.24	17 / 0.23	21 / 0.23	23 / 0.22	26 / 0.21	28 / 0.21	29 / 0.2	29 / 0.2	30 / 0.2	32 / 0.19	33 / 0.19	36 / 0.18	37 / 0.18	39 / 0.17	40 / 0.17	41 / 0.16	43 / 0.16	44 / 0.15	44 / 0.15	45 / 0.15	
	89,100	50th	4 / 0.29	15 / 0.24	17 / 0.23	23 / 0.22	24 / 0.22	29 / 0.2	32 / 0.19	33 / 0.19	35 / 0.18	35 / 0.18	36 / 0.18	37 / 0.18	39 / 0.17	41 / 0.16	43 / 0.16	44 / 0.15	45 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	
	101,500	55th	7 / 0.3	16 / 0.24	19 / 0.22	24 / 0.22	28 / 0.2	33 / 0.18	35 / 0.17	36 / 0.17	38 / 0.17	38 / 0.17	39 / 0.17	41 / 0.16	42 / 0.16	44 / 0.15	47 / 0.14	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.13	
	110,000	60th	7 / 0.3	22 / 0.22	25 / 0.2	30 / 0.2	33 / 0.18	40 / 0.16	42 / 0.16	44 / 0.15	44 / 0.15	45 / 0.15	46 / 0.15	47 / 0.14	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.13	56 / 0.12	57 / 0.12	58 / 0.12	59 / 0.12	60 / 0.12	
	122,500	65th	7 / 0.3	22 / 0.22	25 / 0.2	33 / 0.19	37 / 0.17	42 / 0.15	45 / 0.15	46 / 0.14	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.13	58 / 0.13	61 / 0.12	62 / 0.12	63 / 0.12	64 / 0.12	65 / 0.12	
	132,400	70th	7 / 0.3	24 / 0.21	27 / 0.19	34 / 0.18	40 / 0.16	45 / 0.14	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.13	59 / 0.13	-	-	65 / 0.13	66 / 0.13	68 / 0.13	69 / 0.13	70 / 0.13	
	142,700	75th	7 / 0.3	29 / 0.18	34 / 0.16	41 / 0.15	49 / 0.14	53 / 0.13	54 / 0.13	56 / 0.13	58 / 0.13	58 / 0.13	-	-	-	-	-	-	-	-	73 / 0.14	74 / 0.14	75 / 0.14	
	160,200	80th	10 / 0.26	34 / 0.17	40 / 0.14	48 / 0.14	55 / 0.13	59 / 0.13	60 / 0.13	63 / 0.13	-	-	-	-	-	-	-	-	-	-	-	80 / 0.16	80 / 0.16	
	182,500	85th	10 / 0.26	40 / 0.15	49 / 0.14	56 / 0.13	65 / 0.14	68 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.19	
	214,800	90th	12 / 0.24	47 / 0.14	56 / 0.14	60 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.15	56 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 95. Percent Drought Prediction and MSE of Drought Scenario 12 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 12			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34	0 / 0.34
	15,300	5th	0 / 0.34	3 / 0.32	4 / 0.32	4 / 0.33	4 / 0.33	5 / 0.32	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33	5 / 0.33
	30,700	10th	3 / 0.32	5 / 0.32	6 / 0.32	6 / 0.32	7 / 0.31	8 / 0.31	8 / 0.31	8 / 0.31	9 / 0.31	9 / 0.31	9 / 0.31	9 / 0.31	10 / 0.31	10 / 0.31	10 / 0.31	10 / 0.31	10 / 0.31	10 / 0.31	10 / 0.31	10 / 0.31	10 / 0.31	10 / 0.31
	40,400	15th	4 / 0.32	5 / 0.33	7 / 0.31	7 / 0.32	9 / 0.3	10 / 0.31	12 / 0.3	12 / 0.3	12 / 0.3	12 / 0.3	13 / 0.3	14 / 0.29	14 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29
	45,800	20th	4 / 0.32	6 / 0.32	7 / 0.31	9 / 0.31	11 / 0.29	13 / 0.29	15 / 0.28	15 / 0.28	15 / 0.28	15 / 0.28	17 / 0.27	17 / 0.27	18 / 0.27	19 / 0.27	19 / 0.27	19 / 0.27	19 / 0.27	20 / 0.26	20 / 0.26	20 / 0.26	20 / 0.26	20 / 0.26
	52,900	25th	4 / 0.32	6 / 0.32	9 / 0.3	11 / 0.29	12 / 0.29	15 / 0.27	16 / 0.27	16 / 0.27	17 / 0.26	17 / 0.27	19 / 0.26	20 / 0.25	21 / 0.25	22 / 0.25	23 / 0.25	23 / 0.25	24 / 0.24	25 / 0.24	25 / 0.24	25 / 0.24	25 / 0.24	25 / 0.24
	59,900	30th	4 / 0.32	7 / 0.32	10 / 0.28	12 / 0.28	15 / 0.27	18 / 0.26	19 / 0.25	20 / 0.25	20 / 0.25	21 / 0.25	23 / 0.24	23 / 0.24	25 / 0.23	26 / 0.23	26 / 0.23	27 / 0.22	28 / 0.22	29 / 0.21	30 / 0.21	30 / 0.21	30 / 0.21	30 / 0.21
	65,100	35th	4 / 0.32	9 / 0.29	11 / 0.28	14 / 0.27	17 / 0.26	20 / 0.25	22 / 0.24	22 / 0.24	23 / 0.23	24 / 0.23	26 / 0.22	27 / 0.22	28 / 0.22	29 / 0.21	31 / 0.2	32 / 0.2	33 / 0.2	34 / 0.19	35 / 0.19	35 / 0.19	35 / 0.19	35 / 0.19
	70,700	40th	4 / 0.32	10 / 0.28	12 / 0.27	16 / 0.25	19 / 0.25	22 / 0.23	24 / 0.23	24 / 0.23	25 / 0.22	26 / 0.22	28 / 0.21	30 / 0.2	31 / 0.2	33 / 0.19	35 / 0.18	36 / 0.18	37 / 0.18	38 / 0.18	39 / 0.17	40 / 0.17	40 / 0.17	40 / 0.17
	79,100	45th	4 / 0.32	14 / 0.25	17 / 0.23	21 / 0.23	23 / 0.22	26 / 0.21	28 / 0.2	29 / 0.2	29 / 0.2	30 / 0.2	32 / 0.19	33 / 0.19	36 / 0.18	37 / 0.17	39 / 0.16	40 / 0.16	41 / 0.16	43 / 0.15	44 / 0.15	44 / 0.15	45 / 0.15	45 / 0.15
	89,100	50th	4 / 0.32	15 / 0.25	17 / 0.23	23 / 0.22	24 / 0.22	29 / 0.2	32 / 0.19	33 / 0.19	35 / 0.18	35 / 0.18	36 / 0.18	37 / 0.17	39 / 0.17	41 / 0.16	43 / 0.15	44 / 0.15	45 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	50 / 0.14
	101,500	55th	7 / 0.3	16 / 0.24	19 / 0.22	24 / 0.22	28 / 0.2	33 / 0.18	35 / 0.17	36 / 0.17	38 / 0.17	38 / 0.17	39 / 0.16	41 / 0.16	42 / 0.15	44 / 0.15	47 / 0.14	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.13	55 / 0.13
	110,000	60th	7 / 0.3	22 / 0.22	25 / 0.2	30 / 0.19	33 / 0.18	40 / 0.16	42 / 0.15	44 / 0.15	44 / 0.15	45 / 0.15	46 / 0.14	47 / 0.14	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.13	56 / 0.13	57 / 0.13	58 / 0.13	59 / 0.13	60 / 0.12	60 / 0.12
	122,500	65th	7 / 0.3	22 / 0.22	25 / 0.2	33 / 0.18	37 / 0.17	42 / 0.15	45 / 0.15	46 / 0.14	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.13	58 / 0.13	61 / 0.13	62 / 0.13	63 / 0.13	64 / 0.13	65 / 0.13	65 / 0.13
	132,400	70th	7 / 0.3	24 / 0.21	27 / 0.19	34 / 0.18	40 / 0.16	45 / 0.14	48 / 0.14	50 / 0.14	51 / 0.13	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.13	59 / 0.13	-	-	65 / 0.13	66 / 0.13	68 / 0.13	69 / 0.13	70 / 0.13	70 / 0.13
	142,700	75th	7 / 0.3	29 / 0.18	34 / 0.16	41 / 0.15	49 / 0.14	53 / 0.13	54 / 0.13	56 / 0.13	58 / 0.13	58 / 0.13	-	-	-	-	-	-	-	-	73 / 0.15	74 / 0.15	75 / 0.15	75 / 0.15
	160,200	80th	10 / 0.26	34 / 0.16	40 / 0.14	48 / 0.14	55 / 0.14	59 / 0.14	60 / 0.14	63 / 0.14	-	-	-	-	-	-	-	-	-	-	-	80 / 0.18	80 / 0.18	80 / 0.18
	182,500	85th	10 / 0.26	40 / 0.15	49 / 0.14	56 / 0.13	65 / 0.14	68 / 0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.21	85 / 0.21
	214,800	90th	12 / 0.24	47 / 0.14	56 / 0.14	60 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.15	56 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 96. Percent Drought Prediction and MSE of Drought Scenario 13 of combined inflow/SPI thresholds over the period of record, Model Period B (1926-1975).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 13			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37	0 / 0.37
	15,300	5th	0 / 0.37	3 / 0.35	4 / 0.35	4 / 0.35	4 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35	5 / 0.35
	30,700	10th	3 / 0.35	5 / 0.34	6 / 0.34	6 / 0.34	7 / 0.34	8 / 0.33	8 / 0.33	8 / 0.33	9 / 0.33	9 / 0.33	9 / 0.33	9 / 0.33	10 / 0.33	10 / 0.33	10 / 0.33	10 / 0.33	10 / 0.33	10 / 0.33	10 / 0.33	10 / 0.33	10 / 0.33	10 / 0.33
	40,400	15th	4 / 0.34	5 / 0.35	7 / 0.34	7 / 0.34	9 / 0.33	10 / 0.33	12 / 0.32	12 / 0.32	12 / 0.32	12 / 0.32	13 / 0.31	14 / 0.31	14 / 0.31	15 / 0.3	15 / 0.31	15 / 0.31	15 / 0.31	15 / 0.31	15 / 0.31	15 / 0.31	15 / 0.31	15 / 0.31
	45,800	20th	4 / 0.34	6 / 0.34	7 / 0.33	9 / 0.33	11 / 0.31	13 / 0.3	15 / 0.3	15 / 0.3	15 / 0.3	15 / 0.3	17 / 0.29	17 / 0.29	18 / 0.29	19 / 0.28	19 / 0.28	19 / 0.28	19 / 0.28	20 / 0.28	20 / 0.28	20 / 0.28	20 / 0.28	20 / 0.28
	52,900	25th	4 / 0.34	6 / 0.35	9 / 0.32	11 / 0.31	12 / 0.31	15 / 0.29	16 / 0.29	16 / 0.29	17 / 0.28	17 / 0.28	19 / 0.27	20 / 0.27	21 / 0.27	22 / 0.26	23 / 0.26	23 / 0.26	24 / 0.25	25 / 0.25	25 / 0.25	25 / 0.25	25 / 0.25	25 / 0.25
	59,900	30th	4 / 0.34	7 / 0.34	10 / 0.3	12 / 0.3	15 / 0.29	18 / 0.27	19 / 0.26	20 / 0.26	20 / 0.26	21 / 0.25	23 / 0.24	23 / 0.24	25 / 0.24	26 / 0.23	26 / 0.23	27 / 0.23	28 / 0.22	29 / 0.22	30 / 0.21	30 / 0.21	30 / 0.21	30 / 0.21
	65,100	35th	4 / 0.34	9 / 0.31	11 / 0.29	14 / 0.28	17 / 0.27	20 / 0.26	22 / 0.24	22 / 0.24	23 / 0.24	24 / 0.23	26 / 0.23	27 / 0.22	28 / 0.22	29 / 0.21	31 / 0.2	32 / 0.2	33 / 0.2	34 / 0.19	35 / 0.19	35 / 0.19	35 / 0.19	35 / 0.19
	70,700	40th	4 / 0.34	10 / 0.3	12 / 0.28	16 / 0.27	19 / 0.26	22 / 0.24	24 / 0.23	24 / 0.23	25 / 0.23	26 / 0.23	28 / 0.22	30 / 0.21	31 / 0.2	33 / 0.2	35 / 0.19	36 / 0.18	37 / 0.18	38 / 0.18	39 / 0.17	40 / 0.17	40 / 0.17	40 / 0.17
	79,100	45th	4 / 0.34	14 / 0.27	17 / 0.25	21 / 0.24	23 / 0.23	26 / 0.22	28 / 0.21	29 / 0.2	29 / 0.2	30 / 0.2	32 / 0.19	33 / 0.19	36 / 0.18	37 / 0.17	39 / 0.17	40 / 0.16	41 / 0.16	43 / 0.15	44 / 0.15	44 / 0.15	45 / 0.15	45 / 0.15
	89,100	50th	4 / 0.34	15 / 0.26	17 / 0.25	23 / 0.23	24 / 0.22	29 / 0.2	32 / 0.19	33 / 0.19	35 / 0.18	35 / 0.18	36 / 0.18	37 / 0.17	39 / 0.17	41 / 0.16	43 / 0.15	44 / 0.15	45 / 0.15	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	50 / 0.14
	101,500	55th	7 / 0.32	16 / 0.26	19 / 0.24	24 / 0.23	28 / 0.21	33 / 0.18	35 / 0.17	36 / 0.17	38 / 0.17	38 / 0.17	39 / 0.16	41 / 0.16	42 / 0.15	44 / 0.15	47 / 0.14	49 / 0.14	49 / 0.14	51 / 0.13	52 / 0.13	54 / 0.13	55 / 0.13	55 / 0.13
	110,000	60th	7 / 0.32	22 / 0.22	25 / 0.2	30 / 0.19	33 / 0.18	40 / 0.16	42 / 0.15	44 / 0.15	44 / 0.15	45 / 0.15	46 / 0.14	47 / 0.14	48 / 0.14	50 / 0.14	53 / 0.13	54 / 0.13	56 / 0.13	57 / 0.13	58 / 0.13	59 / 0.13	60 / 0.13	60 / 0.13
	122,500	65th	7 / 0.32	22 / 0.22	25 / 0.2	33 / 0.18	37 / 0.17	42 / 0.15	45 / 0.14	46 / 0.14	47 / 0.14	48 / 0.14	49 / 0.14	50 / 0.14	52 / 0.13	54 / 0.13	57 / 0.13	58 / 0.13	61 / 0.13	62 / 0.13	63 / 0.13	64 / 0.13	65 / 0.13	65 / 0.13
	132,400	70th	7 / 0.32	24 / 0.21	27 / 0.19	34 / 0.17	40 / 0.15	45 / 0.14	48 / 0.14	50 / 0.14	51 / 0.14	52 / 0.13	53 / 0.13	54 / 0.13	56 / 0.13	59 / 0.13	-	-	65 / 0.14	66 / 0.14	68 / 0.14	69 / 0.14	70 / 0.14	70 / 0.14
	142,700	75th	7 / 0.32	29 / 0.18	34 / 0.16	41 / 0.15	49 / 0.14	53 / 0.14	54 / 0.14	56 / 0.14	58 / 0.14	58 / 0.14	-	-	-	-	-	-	-	-	73 / 0.16	74 / 0.16	75 / 0.16	75 / 0.16
	160,200	80th	10 / 0.28	34 / 0.16	40 / 0.14	48 / 0.14	55 / 0.14	59 / 0.14	60 / 0.14	63 / 0.14	-	-	-	-	-	-	-	-	-	-	-	80 / 0.2	80 / 0.2	80 / 0.2
	182,500	85th	10 / 0.28	40 / 0.15	49 / 0.14	56 / 0.13	65 / 0.14	68 / 0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.23	85 / 0.23
	214,800	90th	12 / 0.26	47 / 0.14	56 / 0.14	60 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.15	56 / 0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Mean Squared Error Results – Model Period C (1976-2016)

Table 97. Percent Drought Prediction and MSE of Drought Scenario 1 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 1			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	7,300	0th	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2
	18,100	5th	0 / 0.2	3 / 0.21	4 / 0.2	4 / 0.2	4 / 0.21	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2
	24,600	10th	3 / 0.21	5 / 0.2	6 / 0.2	6 / 0.2	7 / 0.2	8 / 0.2	8 / 0.2	8 / 0.2	9 / 0.2	9 / 0.2	9 / 0.2	9 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2
	28,600	15th	4 / 0.21	5 / 0.2	7 / 0.2	7 / 0.2	9 / 0.19	10 / 0.19	12 / 0.19	12 / 0.19	12 / 0.19	12 / 0.19	13 / 0.19	14 / 0.19	14 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19
	33,000	20th	4 / 0.21	6 / 0.2	7 / 0.2	9 / 0.19	11 / 0.19	13 / 0.19	15 / 0.18	15 / 0.18	15 / 0.18	15 / 0.19	17 / 0.18	17 / 0.18	18 / 0.18	19 / 0.18	19 / 0.18	19 / 0.18	19 / 0.18	20 / 0.18	20 / 0.18	20 / 0.18	20 / 0.18	20 / 0.18	20 / 0.18
	36,300	25th	4 / 0.21	6 / 0.2	9 / 0.19	11 / 0.18	12 / 0.18	15 / 0.18	16 / 0.18	16 / 0.18	17 / 0.18	17 / 0.18	19 / 0.18	20 / 0.18	21 / 0.17	22 / 0.17	23 / 0.17	23 / 0.17	24 / 0.17	25 / 0.17	25 / 0.17	25 / 0.17	25 / 0.17	25 / 0.17	25 / 0.17
	39,700	30th	4 / 0.21	7 / 0.2	10 / 0.19	12 / 0.18	15 / 0.17	18 / 0.17	19 / 0.17	20 / 0.17	20 / 0.17	21 / 0.17	23 / 0.17	23 / 0.17	25 / 0.16	26 / 0.16	26 / 0.16	27 / 0.16	28 / 0.16	29 / 0.16	30 / 0.15	30 / 0.16	30 / 0.16	30 / 0.16	30 / 0.16
	44,000	35th	4 / 0.21	9 / 0.19	11 / 0.18	14 / 0.17	17 / 0.17	20 / 0.16	22 / 0.16	22 / 0.16	23 / 0.16	24 / 0.16	26 / 0.16	27 / 0.16	28 / 0.16	29 / 0.15	31 / 0.15	32 / 0.15	33 / 0.15	34 / 0.15	35 / 0.15	35 / 0.15	35 / 0.15	35 / 0.15	35 / 0.15
	48,500	40th	4 / 0.21	10 / 0.18	12 / 0.18	16 / 0.17	19 / 0.16	22 / 0.16	24 / 0.16	24 / 0.16	25 / 0.16	26 / 0.16	28 / 0.16	30 / 0.15	31 / 0.15	33 / 0.15	35 / 0.14	36 / 0.14	37 / 0.14	38 / 0.14	39 / 0.14	40 / 0.14	40 / 0.14	40 / 0.14	40 / 0.14
	54,800	45th	4 / 0.21	14 / 0.18	17 / 0.17	21 / 0.16	23 / 0.16	26 / 0.15	28 / 0.15	29 / 0.15	29 / 0.15	30 / 0.15	32 / 0.15	33 / 0.15	36 / 0.14	37 / 0.14	39 / 0.14	40 / 0.13	41 / 0.13	43 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13	45 / 0.13	45 / 0.13
	58,200	50th	4 / 0.21	15 / 0.18	17 / 0.17	23 / 0.15	24 / 0.16	29 / 0.15	32 / 0.15	33 / 0.15	35 / 0.14	35 / 0.14	36 / 0.14	37 / 0.14	39 / 0.13	41 / 0.13	43 / 0.13	44 / 0.13	45 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	50 / 0.11	50 / 0.11
	63,400	55th	7 / 0.2	16 / 0.17	19 / 0.17	24 / 0.15	28 / 0.16	33 / 0.14	35 / 0.14	36 / 0.14	38 / 0.14	38 / 0.14	39 / 0.14	41 / 0.13	42 / 0.13	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.1	55 / 0.1	55 / 0.1	55 / 0.1
	67,800	60th	7 / 0.2	22 / 0.17	25 / 0.16	30 / 0.14	33 / 0.15	40 / 0.13	42 / 0.13	44 / 0.13	44 / 0.13	45 / 0.12	46 / 0.12	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.11	56 / 0.1	57 / 0.1	58 / 0.1	59 / 0.09	60 / 0.09	60 / 0.09	60 / 0.09
	72,200	65th	7 / 0.2	22 / 0.17	25 / 0.16	33 / 0.14	37 / 0.14	42 / 0.13	45 / 0.12	46 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.11	57 / 0.1	58 / 0.1	61 / 0.09	62 / 0.09	63 / 0.09	64 / 0.08	65 / 0.08	65 / 0.08	65 / 0.08
	79,200	70th	7 / 0.19	24 / 0.16	27 / 0.15	34 / 0.13	40 / 0.13	45 / 0.12	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.11	56 / 0.11	59 / 0.1	-	-	65 / 0.09	66 / 0.09	68 / 0.08	69 / 0.08	70 / 0.08	70 / 0.08	70 / 0.08
	85,500	75th	7 / 0.19	29 / 0.16	34 / 0.14	41 / 0.13	49 / 0.12	53 / 0.11	54 / 0.11	56 / 0.1	58 / 0.1	58 / 0.1	-	-	-	-	-	-	-	-	73 / 0.08	74 / 0.08	75 / 0.08	75 / 0.08	75 / 0.08
	96,200	80th	10 / 0.18	34 / 0.14	40 / 0.13	48 / 0.12	55 / 0.11	59 / 0.1	60 / 0.1	63 / 0.1	-	-	-	-	-	-	-	-	-	-	-	80 / 0.08	80 / 0.09	80 / 0.09	80 / 0.09
	107,800	85th	10 / 0.18	40 / 0.14	49 / 0.12	56 / 0.1	65 / 0.09	68 / 0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.1	85 / 0.1	85 / 0.1
	120,800	90th	12 / 0.17	47 / 0.12	56 / 0.1	60 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	171,000	95th	32 / 0.13	56 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	317,000	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 98. Percent Drought Prediction and MSE of Drought Scenario 3 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 3			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22
	15,300	5th	0 / 0.22	3 / 0.23	4 / 0.23	4 / 0.23	4 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23
	30,700	10th	3 / 0.24	5 / 0.23	6 / 0.23	6 / 0.23	7 / 0.23	8 / 0.23	8 / 0.23	8 / 0.23	9 / 0.23	9 / 0.23	9 / 0.23	9 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23
	40,400	15th	4 / 0.23	5 / 0.23	7 / 0.22	7 / 0.23	9 / 0.23	10 / 0.22	12 / 0.22	12 / 0.22	12 / 0.22	12 / 0.22	13 / 0.22	14 / 0.21	14 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21
	45,800	20th	4 / 0.23	6 / 0.23	7 / 0.22	9 / 0.22	11 / 0.22	13 / 0.22	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	17 / 0.2	17 / 0.2	18 / 0.2	19 / 0.2	19 / 0.2	19 / 0.2	19 / 0.2	20 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19	
	52,900	25th	4 / 0.23	6 / 0.23	9 / 0.22	11 / 0.21	12 / 0.21	15 / 0.21	16 / 0.21	16 / 0.21	17 / 0.2	17 / 0.2	19 / 0.2	20 / 0.19	21 / 0.19	22 / 0.18	23 / 0.18	23 / 0.18	24 / 0.18	25 / 0.17	25 / 0.18	25 / 0.18	25 / 0.18	
	59,900	30th	4 / 0.23	7 / 0.22	10 / 0.21	12 / 0.21	15 / 0.2	18 / 0.2	19 / 0.19	20 / 0.19	20 / 0.19	21 / 0.19	23 / 0.18	23 / 0.18	25 / 0.17	26 / 0.17	26 / 0.17	27 / 0.17	28 / 0.17	29 / 0.16	30 / 0.16	30 / 0.16	30 / 0.16	
	65,100	35th	4 / 0.23	9 / 0.21	11 / 0.21	14 / 0.2	17 / 0.19	20 / 0.19	22 / 0.18	22 / 0.18	23 / 0.18	24 / 0.18	26 / 0.17	27 / 0.17	28 / 0.17	29 / 0.16	31 / 0.16	32 / 0.16	33 / 0.15	34 / 0.15	35 / 0.15	35 / 0.15	35 / 0.15	
	70,700	40th	4 / 0.23	10 / 0.21	12 / 0.2	16 / 0.19	19 / 0.19	22 / 0.18	24 / 0.18	24 / 0.18	25 / 0.18	26 / 0.17	28 / 0.17	30 / 0.16	31 / 0.16	33 / 0.15	35 / 0.15	36 / 0.15	37 / 0.15	38 / 0.14	39 / 0.14	40 / 0.14	40 / 0.14	
	79,100	45th	4 / 0.23	14 / 0.2	17 / 0.19	21 / 0.18	23 / 0.18	26 / 0.17	28 / 0.17	29 / 0.17	29 / 0.17	30 / 0.16	32 / 0.16	33 / 0.16	36 / 0.15	37 / 0.14	39 / 0.14	40 / 0.14	41 / 0.13	43 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13	
	89,100	50th	4 / 0.23	15 / 0.2	17 / 0.19	23 / 0.17	24 / 0.18	29 / 0.17	32 / 0.16	33 / 0.16	35 / 0.15	35 / 0.15	36 / 0.15	37 / 0.14	39 / 0.14	41 / 0.13	43 / 0.13	44 / 0.13	45 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	
	101,500	55th	7 / 0.22	16 / 0.2	19 / 0.19	24 / 0.17	28 / 0.17	33 / 0.16	35 / 0.15	36 / 0.15	38 / 0.14	38 / 0.14	39 / 0.14	41 / 0.13	42 / 0.13	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.11	55 / 0.1	
	110,000	60th	7 / 0.22	22 / 0.19	25 / 0.18	30 / 0.16	33 / 0.16	40 / 0.14	42 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.11	56 / 0.1	57 / 0.1	58 / 0.1	59 / 0.1	60 / 0.09	
	122,500	65th	7 / 0.22	22 / 0.19	25 / 0.18	33 / 0.15	37 / 0.15	42 / 0.13	45 / 0.12	46 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.11	57 / 0.1	58 / 0.1	61 / 0.1	62 / 0.1	63 / 0.1	64 / 0.1	65 / 0.09	
	132,400	70th	7 / 0.22	24 / 0.19	27 / 0.18	34 / 0.15	40 / 0.14	45 / 0.13	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.11	56 / 0.11	59 / 0.1	-	-	65 / 0.1	66 / 0.1	68 / 0.1	69 / 0.1	70 / 0.09	
	142,700	75th	7 / 0.22	29 / 0.18	34 / 0.16	41 / 0.14	49 / 0.12	53 / 0.11	54 / 0.11	56 / 0.1	58 / 0.1	58 / 0.1	-	-	-	-	-	-	-	-	73 / 0.1	74 / 0.1	75 / 0.1	
	160,200	80th	10 / 0.21	34 / 0.16	40 / 0.14	48 / 0.12	55 / 0.1	59 / 0.1	60 / 0.1	63 / 0.09	-	-	-	-	-	-	-	-	-	-	-	80 / 0.11	80 / 0.11	
	182,500	85th	10 / 0.21	40 / 0.15	49 / 0.12	56 / 0.09	65 / 0.08	68 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.12	
	214,800	90th	12 / 0.21	47 / 0.12	56 / 0.09	60 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.14	56 / 0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 99. Percent Drought Prediction and MSE of Drought Scenario 4 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 4			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2
	15,300	5th	0 / 0.2	3 / 0.21	4 / 0.21	4 / 0.21	4 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21
	30,700	10th	3 / 0.22	5 / 0.21	6 / 0.21	6 / 0.21	7 / 0.21	8 / 0.21	8 / 0.21	8 / 0.21	9 / 0.21	9 / 0.21	9 / 0.21	9 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21
	40,400	15th	4 / 0.21	5 / 0.21	7 / 0.21	7 / 0.21	9 / 0.21	10 / 0.2	12 / 0.2	12 / 0.2	12 / 0.2	12 / 0.2	13 / 0.2	14 / 0.2	14 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2
	45,800	20th	4 / 0.21	6 / 0.21	7 / 0.21	9 / 0.2	11 / 0.2	13 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	17 / 0.2	17 / 0.19	18 / 0.19	19 / 0.19	19 / 0.19	19 / 0.19	19 / 0.19	20 / 0.18	20 / 0.18	20 / 0.18	20 / 0.18	
	52,900	25th	4 / 0.21	6 / 0.21	9 / 0.2	11 / 0.19	12 / 0.2	15 / 0.19	16 / 0.19	16 / 0.19	17 / 0.19	17 / 0.19	19 / 0.19	20 / 0.19	21 / 0.18	22 / 0.18	23 / 0.17	23 / 0.17	24 / 0.17	25 / 0.17	25 / 0.17	25 / 0.17	25 / 0.17	
	59,900	30th	4 / 0.21	7 / 0.21	10 / 0.19	12 / 0.19	15 / 0.19	18 / 0.18	19 / 0.18	20 / 0.18	20 / 0.18	21 / 0.18	23 / 0.18	23 / 0.18	25 / 0.17	26 / 0.17	26 / 0.17	27 / 0.16	28 / 0.16	29 / 0.16	30 / 0.15	30 / 0.15	30 / 0.15	
	65,100	35th	4 / 0.21	9 / 0.19	11 / 0.19	14 / 0.18	17 / 0.18	20 / 0.18	22 / 0.17	22 / 0.18	23 / 0.17	24 / 0.17	26 / 0.17	27 / 0.17	28 / 0.16	29 / 0.16	31 / 0.16	32 / 0.15	33 / 0.15	34 / 0.15	35 / 0.15	35 / 0.15	35 / 0.15	
	70,700	40th	4 / 0.21	10 / 0.19	12 / 0.19	16 / 0.18	19 / 0.17	22 / 0.17	24 / 0.17	24 / 0.17	25 / 0.17	26 / 0.17	28 / 0.17	30 / 0.16	31 / 0.16	33 / 0.15	35 / 0.15	36 / 0.15	37 / 0.15	38 / 0.14	39 / 0.14	40 / 0.14	40 / 0.13	
	79,100	45th	4 / 0.21	14 / 0.19	17 / 0.18	21 / 0.17	23 / 0.17	26 / 0.16	28 / 0.16	29 / 0.16	29 / 0.16	30 / 0.16	32 / 0.16	33 / 0.15	36 / 0.14	37 / 0.14	39 / 0.14	40 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	44 / 0.13	45 / 0.12	
	89,100	50th	4 / 0.21	15 / 0.18	17 / 0.18	23 / 0.16	24 / 0.16	29 / 0.16	32 / 0.16	33 / 0.16	35 / 0.15	35 / 0.15	36 / 0.15	37 / 0.15	39 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	45 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	
	101,500	55th	7 / 0.2	16 / 0.18	19 / 0.17	24 / 0.16	28 / 0.16	33 / 0.15	35 / 0.15	36 / 0.15	38 / 0.14	38 / 0.14	39 / 0.14	41 / 0.14	42 / 0.13	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.11	55 / 0.1	
	110,000	60th	7 / 0.2	22 / 0.18	25 / 0.17	30 / 0.15	33 / 0.16	40 / 0.14	42 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.1	56 / 0.1	57 / 0.1	58 / 0.1	59 / 0.1	60 / 0.1	
	122,500	65th	7 / 0.2	22 / 0.18	25 / 0.17	33 / 0.15	37 / 0.14	42 / 0.13	45 / 0.12	46 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.11	57 / 0.1	58 / 0.1	61 / 0.09	62 / 0.09	63 / 0.1	64 / 0.09	65 / 0.1	
	132,400	70th	7 / 0.2	24 / 0.17	27 / 0.17	34 / 0.15	40 / 0.14	45 / 0.13	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.11	56 / 0.1	59 / 0.1	-	-	65 / 0.09	66 / 0.09	68 / 0.09	69 / 0.09	70 / 0.09	
	142,700	75th	7 / 0.2	29 / 0.16	34 / 0.15	41 / 0.13	49 / 0.12	53 / 0.11	54 / 0.11	56 / 0.1	58 / 0.1	58 / 0.1	-	-	-	-	-	-	-	-	73 / 0.09	74 / 0.09	75 / 0.1	
	160,200	80th	10 / 0.19	34 / 0.15	40 / 0.13	48 / 0.12	55 / 0.11	59 / 0.1	60 / 0.1	63 / 0.09	-	-	-	-	-	-	-	-	-	-	-	80 / 0.1	80 / 0.1	
	182,500	85th	10 / 0.19	40 / 0.14	49 / 0.12	56 / 0.1	65 / 0.08	68 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.1	
	214,800	90th	12 / 0.19	47 / 0.12	56 / 0.1	60 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.12	56 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 100. Percent Drought Prediction and MSE of Drought Scenario 6 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 6			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25
	15,300	5th	0 / 0.25	3 / 0.25	4 / 0.24	4 / 0.24	4 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24	5 / 0.24
	30,700	10th	3 / 0.25	5 / 0.24	6 / 0.24	6 / 0.24	7 / 0.23	8 / 0.23	8 / 0.23	8 / 0.23	9 / 0.23	9 / 0.23	9 / 0.23	9 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23
	40,400	15th	4 / 0.25	5 / 0.24	7 / 0.23	7 / 0.23	9 / 0.22	10 / 0.22	12 / 0.21	12 / 0.22	12 / 0.22	12 / 0.22	13 / 0.21	14 / 0.21	14 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21
	45,800	20th	4 / 0.25	6 / 0.24	7 / 0.23	9 / 0.22	11 / 0.22	13 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	15 / 0.21	17 / 0.2	17 / 0.2	18 / 0.2	19 / 0.19	19 / 0.19	19 / 0.19	19 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19
	52,900	25th	4 / 0.25	6 / 0.24	9 / 0.22	11 / 0.21	12 / 0.21	15 / 0.2	16 / 0.2	16 / 0.21	17 / 0.2	17 / 0.2	19 / 0.2	20 / 0.2	21 / 0.19	22 / 0.19	23 / 0.19	23 / 0.19	24 / 0.18	25 / 0.18	25 / 0.18	25 / 0.18	25 / 0.18	25 / 0.18
	59,900	30th	4 / 0.25	7 / 0.23	10 / 0.22	12 / 0.21	15 / 0.2	18 / 0.19	19 / 0.19	20 / 0.19	20 / 0.19	21 / 0.19	23 / 0.19	23 / 0.19	25 / 0.18	26 / 0.18	26 / 0.18	27 / 0.17	28 / 0.17	29 / 0.17	30 / 0.17	30 / 0.16	30 / 0.16	30 / 0.16
	65,100	35th	4 / 0.25	9 / 0.23	11 / 0.22	14 / 0.21	17 / 0.2	20 / 0.19	22 / 0.19	22 / 0.19	23 / 0.19	24 / 0.18	26 / 0.18	27 / 0.18	28 / 0.18	29 / 0.17	31 / 0.16	32 / 0.16	33 / 0.16	34 / 0.16	35 / 0.15	35 / 0.15	35 / 0.15	35 / 0.15
	70,700	40th	4 / 0.25	10 / 0.23	12 / 0.22	16 / 0.2	19 / 0.19	22 / 0.19	24 / 0.18	24 / 0.18	25 / 0.18	26 / 0.18	28 / 0.18	30 / 0.17	31 / 0.17	33 / 0.16	35 / 0.16	36 / 0.15	37 / 0.15	38 / 0.15	39 / 0.14	40 / 0.14	40 / 0.14	40 / 0.14
	79,100	45th	4 / 0.25	14 / 0.22	17 / 0.21	21 / 0.19	23 / 0.19	26 / 0.18	28 / 0.17	29 / 0.17	29 / 0.17	30 / 0.17	32 / 0.16	33 / 0.16	36 / 0.15	37 / 0.15	39 / 0.14	40 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13	45 / 0.13
	89,100	50th	4 / 0.25	15 / 0.22	17 / 0.21	23 / 0.19	24 / 0.18	29 / 0.17	32 / 0.17	33 / 0.16	35 / 0.16	35 / 0.16	36 / 0.15	37 / 0.15	39 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	45 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	50 / 0.11
	101,500	55th	7 / 0.23	16 / 0.21	19 / 0.2	24 / 0.18	28 / 0.18	33 / 0.16	35 / 0.16	36 / 0.16	38 / 0.15	38 / 0.15	39 / 0.15	41 / 0.14	42 / 0.14	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.11	55 / 0.1	55 / 0.1
	110,000	60th	7 / 0.23	22 / 0.2	25 / 0.18	30 / 0.17	33 / 0.16	40 / 0.14	42 / 0.14	44 / 0.13	44 / 0.13	45 / 0.13	46 / 0.13	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.1	56 / 0.1	57 / 0.1	58 / 0.1	59 / 0.1	60 / 0.1	60 / 0.1
	122,500	65th	7 / 0.23	22 / 0.19	25 / 0.18	33 / 0.16	37 / 0.15	42 / 0.14	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.1	57 / 0.1	58 / 0.1	61 / 0.09	62 / 0.09	63 / 0.09	64 / 0.09	65 / 0.1	65 / 0.1
	132,400	70th	7 / 0.23	24 / 0.18	27 / 0.17	34 / 0.15	40 / 0.14	45 / 0.12	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.11	56 / 0.1	59 / 0.09	-	-	65 / 0.09	66 / 0.09	68 / 0.09	69 / 0.09	70 / 0.1	70 / 0.1
	142,700	75th	7 / 0.23	29 / 0.18	34 / 0.16	41 / 0.14	49 / 0.12	53 / 0.11	54 / 0.11	56 / 0.1	58 / 0.1	58 / 0.1	-	-	-	-	-	-	-	-	73 / 0.1	74 / 0.1	75 / 0.11	75 / 0.11
	160,200	80th	10 / 0.22	34 / 0.16	40 / 0.14	48 / 0.12	55 / 0.11	59 / 0.1	60 / 0.1	63 / 0.09	-	-	-	-	-	-	-	-	-	-	-	80 / 0.12	80 / 0.12	80 / 0.12
	182,500	85th	10 / 0.22	40 / 0.14	49 / 0.12	56 / 0.1	65 / 0.09	68 / 0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.14	85 / 0.14
	214,800	90th	12 / 0.2	47 / 0.12	56 / 0.1	60 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.14	56 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 101. Percent Drought Prediction and MSE of Drought Scenario 7 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 7			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15
	15,300	5th	0 / 0.15	3 / 0.16	4 / 0.16	4 / 0.16	4 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16
	30,700	10th	3 / 0.17	5 / 0.16	6 / 0.16	6 / 0.16	7 / 0.17	8 / 0.16	8 / 0.17	8 / 0.17	9 / 0.16	9 / 0.17	9 / 0.17	9 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17
	40,400	15th	4 / 0.16	5 / 0.16	7 / 0.16	7 / 0.16	9 / 0.16	10 / 0.16	12 / 0.16	12 / 0.16	12 / 0.16	12 / 0.16	13 / 0.17	14 / 0.17	14 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17
	45,800	20th	4 / 0.16	6 / 0.16	7 / 0.16	9 / 0.16	11 / 0.16	13 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	17 / 0.16	17 / 0.17	18 / 0.16	19 / 0.16	19 / 0.16	19 / 0.16	19 / 0.16	20 / 0.16	20 / 0.16	20 / 0.16	20 / 0.16	20 / 0.16
	52,900	25th	4 / 0.16	6 / 0.16	9 / 0.15	11 / 0.15	12 / 0.16	15 / 0.16	16 / 0.16	16 / 0.16	17 / 0.16	17 / 0.16	19 / 0.16	20 / 0.16	21 / 0.16	22 / 0.16	23 / 0.16	23 / 0.16	24 / 0.16	25 / 0.16	25 / 0.16	25 / 0.16	25 / 0.16	25 / 0.16
	59,900	30th	4 / 0.16	7 / 0.16	10 / 0.15	12 / 0.15	15 / 0.15	18 / 0.15	19 / 0.15	20 / 0.15	20 / 0.15	21 / 0.15	23 / 0.16	23 / 0.16	25 / 0.15	26 / 0.15	26 / 0.15	27 / 0.15	28 / 0.15	29 / 0.15	30 / 0.15	30 / 0.15	30 / 0.15	30 / 0.15
	65,100	35th	4 / 0.16	9 / 0.16	11 / 0.15	14 / 0.15	17 / 0.15	20 / 0.15	22 / 0.15	22 / 0.15	23 / 0.15	24 / 0.15	26 / 0.15	27 / 0.15	28 / 0.15	29 / 0.15	31 / 0.15	32 / 0.15	33 / 0.14	34 / 0.14	35 / 0.14	35 / 0.14	35 / 0.14	35 / 0.14
	70,700	40th	4 / 0.16	10 / 0.16	12 / 0.15	16 / 0.15	19 / 0.15	22 / 0.15	24 / 0.15	24 / 0.15	25 / 0.15	26 / 0.15	28 / 0.15	30 / 0.15	31 / 0.15	33 / 0.14	35 / 0.14	36 / 0.14	37 / 0.14	38 / 0.14	39 / 0.14	40 / 0.13	40 / 0.13	40 / 0.13
	79,100	45th	4 / 0.16	14 / 0.16	17 / 0.15	21 / 0.15	23 / 0.15	26 / 0.15	28 / 0.15	29 / 0.15	29 / 0.15	30 / 0.14	32 / 0.14	33 / 0.14	36 / 0.14	37 / 0.14	39 / 0.13	40 / 0.13	41 / 0.13	43 / 0.13	44 / 0.13	44 / 0.13	44 / 0.13	45 / 0.12
	89,100	50th	4 / 0.16	15 / 0.16	17 / 0.16	23 / 0.14	24 / 0.15	29 / 0.15	32 / 0.14	33 / 0.14	35 / 0.14	35 / 0.14	36 / 0.14	37 / 0.14	39 / 0.13	41 / 0.13	43 / 0.13	44 / 0.13	45 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	
	101,500	55th	7 / 0.16	16 / 0.16	19 / 0.15	24 / 0.14	28 / 0.15	33 / 0.14	35 / 0.14	36 / 0.14	38 / 0.13	38 / 0.13	39 / 0.13	41 / 0.13	42 / 0.13	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.11	55 / 0.1	
	110,000	60th	7 / 0.16	22 / 0.16	25 / 0.15	30 / 0.14	33 / 0.14	40 / 0.13	42 / 0.13	44 / 0.13	44 / 0.13	45 / 0.12	46 / 0.12	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.1	56 / 0.1	57 / 0.1	58 / 0.1	59 / 0.09	60 / 0.09	
	122,500	65th	7 / 0.16	22 / 0.15	25 / 0.15	33 / 0.13	37 / 0.13	42 / 0.13	45 / 0.12	46 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.11	57 / 0.1	58 / 0.1	61 / 0.09	62 / 0.09	63 / 0.09	64 / 0.09	65 / 0.08	
	132,400	70th	7 / 0.15	24 / 0.15	27 / 0.15	34 / 0.13	40 / 0.13	45 / 0.12	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.11	56 / 0.1	59 / 0.09	-	-	65 / 0.09	66 / 0.08	68 / 0.08	69 / 0.08	70 / 0.08	
	142,700	75th	7 / 0.15	29 / 0.16	34 / 0.14	41 / 0.13	49 / 0.12	53 / 0.11	54 / 0.11	56 / 0.1	58 / 0.1	58 / 0.1	-	-	-	-	-	-	-	-	73 / 0.08	74 / 0.08	75 / 0.07	
	160,200	80th	10 / 0.15	34 / 0.14	40 / 0.13	48 / 0.12	55 / 0.11	59 / 0.1	60 / 0.1	63 / 0.09	-	-	-	-	-	-	-	-	-	-	-	80 / 0.07	80 / 0.07	
	182,500	85th	10 / 0.15	40 / 0.14	49 / 0.12	56 / 0.1	65 / 0.08	68 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.07	
	214,800	90th	12 / 0.14	47 / 0.12	56 / 0.1	60 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.11	56 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 102. Percent Drought Prediction and MSE of Drought Scenario 8 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 8			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16
	15,300	5th	0 / 0.16	3 / 0.18	4 / 0.17	4 / 0.17	4 / 0.18	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18
	30,700	10th	3 / 0.18	5 / 0.18	6 / 0.18	6 / 0.18	7 / 0.18	8 / 0.18	8 / 0.18	8 / 0.18	9 / 0.18	9 / 0.18	9 / 0.18	9 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18
	40,400	15th	4 / 0.18	5 / 0.18	7 / 0.17	7 / 0.18	9 / 0.18	10 / 0.18	12 / 0.18	12 / 0.18	12 / 0.18	12 / 0.18	13 / 0.18	14 / 0.18	14 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18
	45,800	20th	4 / 0.18	6 / 0.17	7 / 0.17	9 / 0.17	11 / 0.17	13 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	17 / 0.17	17 / 0.18	18 / 0.17	19 / 0.17	19 / 0.17	19 / 0.17	19 / 0.17	20 / 0.17	20 / 0.17	20 / 0.17	20 / 0.17	20 / 0.17
	52,900	25th	4 / 0.18	6 / 0.18	9 / 0.17	11 / 0.16	12 / 0.17	15 / 0.17	16 / 0.17	16 / 0.17	17 / 0.17	17 / 0.17	19 / 0.17	20 / 0.17	21 / 0.17	22 / 0.17	23 / 0.16	23 / 0.16	24 / 0.16	25 / 0.16	25 / 0.16	25 / 0.16	25 / 0.16	25 / 0.16
	59,900	30th	4 / 0.18	7 / 0.17	10 / 0.16	12 / 0.16	15 / 0.16	18 / 0.16	19 / 0.16	20 / 0.16	20 / 0.16	21 / 0.16	23 / 0.16	23 / 0.17	25 / 0.16	26 / 0.16	26 / 0.16	27 / 0.15	28 / 0.15	29 / 0.15	30 / 0.15	30 / 0.15	30 / 0.15	30 / 0.15
	65,100	35th	4 / 0.18	9 / 0.17	11 / 0.17	14 / 0.16	17 / 0.16	20 / 0.16	22 / 0.16	22 / 0.16	23 / 0.16	24 / 0.16	26 / 0.16	27 / 0.16	28 / 0.16	29 / 0.15	31 / 0.15	32 / 0.15	33 / 0.15	34 / 0.14	35 / 0.14	35 / 0.14	35 / 0.14	35 / 0.14
	70,700	40th	4 / 0.18	10 / 0.17	12 / 0.17	16 / 0.16	19 / 0.16	22 / 0.16	24 / 0.16	24 / 0.16	25 / 0.16	26 / 0.16	28 / 0.16	30 / 0.16	31 / 0.15	33 / 0.15	35 / 0.14	36 / 0.14	37 / 0.14	38 / 0.14	39 / 0.14	40 / 0.13	40 / 0.13	40 / 0.13
	79,100	45th	4 / 0.18	14 / 0.17	17 / 0.16	21 / 0.15	23 / 0.15	26 / 0.16	28 / 0.15	29 / 0.15	29 / 0.15	30 / 0.15	32 / 0.15	33 / 0.15	36 / 0.14	37 / 0.14	39 / 0.13	40 / 0.13	41 / 0.13	43 / 0.13	44 / 0.13	44 / 0.13	44 / 0.13	45 / 0.12
	89,100	50th	4 / 0.18	15 / 0.17	17 / 0.17	23 / 0.15	24 / 0.15	29 / 0.15	32 / 0.15	33 / 0.15	35 / 0.14	35 / 0.14	36 / 0.14	37 / 0.14	39 / 0.14	41 / 0.13	43 / 0.13	44 / 0.13	45 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	
	101,500	55th	7 / 0.17	16 / 0.17	19 / 0.16	24 / 0.15	28 / 0.15	33 / 0.15	35 / 0.14	36 / 0.14	38 / 0.14	38 / 0.14	39 / 0.14	41 / 0.13	42 / 0.13	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.11	55 / 0.1	
	110,000	60th	7 / 0.17	22 / 0.16	25 / 0.16	30 / 0.15	33 / 0.15	40 / 0.13	42 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.1	56 / 0.1	57 / 0.1	58 / 0.1	59 / 0.1	60 / 0.09	
	122,500	65th	7 / 0.17	22 / 0.16	25 / 0.16	33 / 0.14	37 / 0.14	42 / 0.13	45 / 0.12	46 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.11	57 / 0.1	58 / 0.1	61 / 0.1	62 / 0.09	63 / 0.09	64 / 0.09	65 / 0.09	
	132,400	70th	7 / 0.17	24 / 0.16	27 / 0.15	34 / 0.14	40 / 0.13	45 / 0.12	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.1	56 / 0.1	59 / 0.1	-	-	65 / 0.09	66 / 0.09	68 / 0.09	69 / 0.09	70 / 0.08	
	142,700	75th	7 / 0.17	29 / 0.15	34 / 0.14	41 / 0.13	49 / 0.12	53 / 0.11	54 / 0.11	56 / 0.1	58 / 0.1	58 / 0.1	-	-	-	-	-	-	-	-	73 / 0.09	74 / 0.08	75 / 0.08	
	160,200	80th	10 / 0.16	34 / 0.14	40 / 0.13	48 / 0.12	55 / 0.11	59 / 0.1	60 / 0.1	63 / 0.09	-	-	-	-	-	-	-	-	-	-	-	80 / 0.08	80 / 0.08	
	182,500	85th	10 / 0.16	40 / 0.14	49 / 0.12	56 / 0.1	65 / 0.08	68 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.08	
	214,800	90th	12 / 0.15	47 / 0.12	56 / 0.11	60 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.1	56 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 103. Percent Drought Prediction and MSE of Drought Scenario 9 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 9			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2	0 / 0.2
	15,300	5th	0 / 0.2	3 / 0.21	4 / 0.21	4 / 0.21	4 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21	5 / 0.21
	30,700	10th	3 / 0.22	5 / 0.21	6 / 0.21	6 / 0.21	7 / 0.21	8 / 0.21	8 / 0.21	8 / 0.21	9 / 0.21	9 / 0.21	9 / 0.21	9 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21	10 / 0.21
	40,400	15th	4 / 0.21	5 / 0.21	7 / 0.2	7 / 0.21	9 / 0.21	10 / 0.2	12 / 0.2	12 / 0.2	12 / 0.2	12 / 0.2	13 / 0.21	14 / 0.2	14 / 0.21	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2
	45,800	20th	4 / 0.21	6 / 0.21	7 / 0.2	9 / 0.2	11 / 0.2	13 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	15 / 0.2	17 / 0.2	17 / 0.2	18 / 0.2	19 / 0.19	19 / 0.19	19 / 0.19	19 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19	20 / 0.19
	52,900	25th	4 / 0.21	6 / 0.21	9 / 0.2	11 / 0.19	12 / 0.2	15 / 0.19	16 / 0.2	16 / 0.2	17 / 0.19	17 / 0.19	19 / 0.2	20 / 0.19	21 / 0.19	22 / 0.19	23 / 0.18	23 / 0.18	24 / 0.18	25 / 0.18	25 / 0.18	25 / 0.18	25 / 0.18	25 / 0.18
	59,900	30th	4 / 0.21	7 / 0.2	10 / 0.19	12 / 0.19	15 / 0.19	18 / 0.18	19 / 0.19	20 / 0.18	20 / 0.18	21 / 0.18	23 / 0.18	23 / 0.18	25 / 0.18	26 / 0.17	26 / 0.18	27 / 0.17	28 / 0.17	29 / 0.17	30 / 0.16	30 / 0.17	30 / 0.17	30 / 0.17
	65,100	35th	4 / 0.21	9 / 0.2	11 / 0.2	14 / 0.19	17 / 0.18	20 / 0.18	22 / 0.18	22 / 0.18	23 / 0.18	24 / 0.18	26 / 0.18	27 / 0.18	28 / 0.17	29 / 0.17	31 / 0.16	32 / 0.16	33 / 0.16	34 / 0.16	35 / 0.15	35 / 0.15	35 / 0.15	35 / 0.15
	70,700	40th	4 / 0.21	10 / 0.2	12 / 0.19	16 / 0.18	19 / 0.18	22 / 0.18	24 / 0.18	24 / 0.18	25 / 0.18	26 / 0.17	28 / 0.17	30 / 0.17	31 / 0.17	33 / 0.16	35 / 0.15	36 / 0.15	37 / 0.15	38 / 0.14	39 / 0.14	40 / 0.14	40 / 0.14	40 / 0.14
	79,100	45th	4 / 0.21	14 / 0.2	17 / 0.19	21 / 0.18	23 / 0.17	26 / 0.17	28 / 0.17	29 / 0.17	29 / 0.17	30 / 0.16	32 / 0.16	33 / 0.16	36 / 0.15	37 / 0.15	39 / 0.14	40 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	44 / 0.13	45 / 0.12	
	89,100	50th	4 / 0.21	15 / 0.19	17 / 0.19	23 / 0.17	24 / 0.17	29 / 0.17	32 / 0.16	33 / 0.16	35 / 0.15	35 / 0.15	36 / 0.15	37 / 0.15	39 / 0.14	41 / 0.13	43 / 0.13	44 / 0.13	45 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	
	101,500	55th	7 / 0.2	16 / 0.19	19 / 0.18	24 / 0.17	28 / 0.17	33 / 0.16	35 / 0.15	36 / 0.15	38 / 0.15	38 / 0.15	39 / 0.14	41 / 0.14	42 / 0.14	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.11	55 / 0.1	
	110,000	60th	7 / 0.2	22 / 0.18	25 / 0.17	30 / 0.16	33 / 0.16	40 / 0.14	42 / 0.14	44 / 0.13	44 / 0.13	45 / 0.13	46 / 0.13	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.1	56 / 0.1	57 / 0.1	58 / 0.1	59 / 0.1	60 / 0.1	
	122,500	65th	7 / 0.2	22 / 0.18	25 / 0.17	33 / 0.15	37 / 0.15	42 / 0.13	45 / 0.13	46 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.1	57 / 0.1	58 / 0.1	61 / 0.09	62 / 0.09	63 / 0.09	64 / 0.09	65 / 0.09	
	132,400	70th	7 / 0.2	24 / 0.18	27 / 0.17	34 / 0.15	40 / 0.14	45 / 0.13	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.1	56 / 0.1	59 / 0.09	-	-	65 / 0.09	66 / 0.09	68 / 0.09	69 / 0.09	70 / 0.09	
	142,700	75th	7 / 0.2	29 / 0.17	34 / 0.15	41 / 0.13	49 / 0.12	53 / 0.11	54 / 0.1	56 / 0.1	58 / 0.09	58 / 0.09	-	-	-	-	-	-	-	-	73 / 0.08	74 / 0.08	75 / 0.09	
	160,200	80th	10 / 0.19	34 / 0.15	40 / 0.13	48 / 0.12	55 / 0.1	59 / 0.1	60 / 0.09	63 / 0.09	-	-	-	-	-	-	-	-	-	-	-	80 / 0.09	80 / 0.09	
	182,500	85th	10 / 0.19	40 / 0.13	49 / 0.12	56 / 0.11	65 / 0.09	68 / 0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.1	
	214,800	90th	12 / 0.18	47 / 0.12	56 / 0.11	60 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.11	56 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 104. Percent Drought Prediction and MSE of Drought Scenario 10 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 10			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22	0 / 0.22
	15,300	5th	0 / 0.22	3 / 0.24	4 / 0.23	4 / 0.23	4 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23	5 / 0.23
	30,700	10th	3 / 0.24	5 / 0.23	6 / 0.23	6 / 0.23	7 / 0.23	8 / 0.23	8 / 0.23	8 / 0.23	9 / 0.23	9 / 0.23	9 / 0.23	9 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23	10 / 0.23
	40,400	15th	4 / 0.24	5 / 0.23	7 / 0.22	7 / 0.23	9 / 0.23	10 / 0.22	12 / 0.22	12 / 0.22	12 / 0.22	12 / 0.22	13 / 0.23	14 / 0.22	14 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22
	45,800	20th	4 / 0.24	6 / 0.23	7 / 0.22	9 / 0.22	11 / 0.22	13 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	15 / 0.22	17 / 0.22	17 / 0.22	18 / 0.21	19 / 0.21	19 / 0.21	19 / 0.21	19 / 0.21	20 / 0.21	20 / 0.21	20 / 0.21	20 / 0.21	20 / 0.21
	52,900	25th	4 / 0.24	6 / 0.23	9 / 0.22	11 / 0.21	12 / 0.21	15 / 0.21	16 / 0.21	16 / 0.21	17 / 0.21	17 / 0.21	19 / 0.21	20 / 0.21	21 / 0.2	22 / 0.2	23 / 0.2	23 / 0.2	24 / 0.19	25 / 0.19	25 / 0.19	25 / 0.19	25 / 0.19	25 / 0.19
	59,900	30th	4 / 0.24	7 / 0.22	10 / 0.21	12 / 0.21	15 / 0.2	18 / 0.2	19 / 0.2	20 / 0.2	20 / 0.2	21 / 0.2	23 / 0.2	23 / 0.2	25 / 0.19	26 / 0.19	26 / 0.19	27 / 0.18	28 / 0.18	29 / 0.18	30 / 0.17	30 / 0.18	30 / 0.18	30 / 0.18
	65,100	35th	4 / 0.24	9 / 0.22	11 / 0.21	14 / 0.21	17 / 0.2	20 / 0.2	22 / 0.19	22 / 0.2	23 / 0.19	24 / 0.19	26 / 0.19	27 / 0.19	28 / 0.18	29 / 0.18	31 / 0.17	32 / 0.17	33 / 0.17	34 / 0.16	35 / 0.16	35 / 0.16	35 / 0.16	35 / 0.16
	70,700	40th	4 / 0.24	10 / 0.22	12 / 0.21	16 / 0.2	19 / 0.2	22 / 0.19	24 / 0.19	24 / 0.19	25 / 0.19	26 / 0.18	28 / 0.18	30 / 0.18	31 / 0.18	33 / 0.17	35 / 0.16	36 / 0.16	37 / 0.15	38 / 0.15	39 / 0.15	40 / 0.14	40 / 0.14	40 / 0.14
	79,100	45th	4 / 0.24	14 / 0.21	17 / 0.2	21 / 0.19	23 / 0.19	26 / 0.18	28 / 0.18	29 / 0.18	29 / 0.18	30 / 0.17	32 / 0.17	33 / 0.17	36 / 0.16	37 / 0.15	39 / 0.15	40 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13
	89,100	50th	4 / 0.24	15 / 0.21	17 / 0.21	23 / 0.18	24 / 0.19	29 / 0.18	32 / 0.17	33 / 0.17	35 / 0.16	35 / 0.16	36 / 0.16	37 / 0.16	39 / 0.15	41 / 0.14	43 / 0.13	44 / 0.13	45 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	50 / 0.11
	101,500	55th	7 / 0.22	16 / 0.21	19 / 0.2	24 / 0.18	28 / 0.18	33 / 0.17	35 / 0.16	36 / 0.16	38 / 0.15	38 / 0.15	39 / 0.15	41 / 0.14	42 / 0.14	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.1	55 / 0.1	55 / 0.1
	110,000	60th	7 / 0.22	22 / 0.19	25 / 0.18	30 / 0.17	33 / 0.17	40 / 0.14	42 / 0.14	44 / 0.13	44 / 0.13	45 / 0.13	46 / 0.13	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.1	56 / 0.1	57 / 0.1	58 / 0.1	59 / 0.1	60 / 0.1	60 / 0.1
	122,500	65th	7 / 0.22	22 / 0.19	25 / 0.18	33 / 0.16	37 / 0.15	42 / 0.14	45 / 0.13	46 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.1	57 / 0.1	58 / 0.1	61 / 0.1	62 / 0.1	63 / 0.1	64 / 0.09	65 / 0.1	65 / 0.1
	132,400	70th	7 / 0.22	24 / 0.19	27 / 0.18	34 / 0.15	40 / 0.14	45 / 0.13	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.1	56 / 0.1	59 / 0.1	-	-	65 / 0.09	66 / 0.09	68 / 0.1	69 / 0.09	70 / 0.1	70 / 0.1
	142,700	75th	7 / 0.22	29 / 0.17	34 / 0.16	41 / 0.14	49 / 0.12	53 / 0.11	54 / 0.1	56 / 0.1	58 / 0.1	58 / 0.1	-	-	-	-	-	-	-	-	73 / 0.09	74 / 0.09	75 / 0.1	75 / 0.1
	160,200	80th	10 / 0.21	34 / 0.16	40 / 0.14	48 / 0.12	55 / 0.1	59 / 0.1	60 / 0.09	63 / 0.09	-	-	-	-	-	-	-	-	-	-	-	80 / 0.1	80 / 0.11	80 / 0.11
	182,500	85th	10 / 0.21	40 / 0.13	49 / 0.12	56 / 0.11	65 / 0.09	68 / 0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.12	85 / 0.12
	214,800	90th	12 / 0.19	47 / 0.12	56 / 0.11	60 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.12	56 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 105. Percent Drought Prediction and MSE of Drought Scenario 11 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 11			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25	0 / 0.25
	15,300	5th	0 / 0.25	3 / 0.26	4 / 0.26	4 / 0.26	4 / 0.26	5 / 0.25	5 / 0.25	5 / 0.25	5 / 0.25	5 / 0.25	5 / 0.25	5 / 0.25	5 / 0.25	5 / 0.26	5 / 0.26	5 / 0.26	5 / 0.26	5 / 0.26	5 / 0.26	5 / 0.26	5 / 0.26	5 / 0.26
	30,700	10th	3 / 0.27	5 / 0.26	6 / 0.25	6 / 0.26	7 / 0.26	8 / 0.25	8 / 0.25	8 / 0.25	9 / 0.25	9 / 0.25	9 / 0.25	9 / 0.25	10 / 0.25	10 / 0.25	10 / 0.25	10 / 0.25	10 / 0.25	10 / 0.25	10 / 0.25	10 / 0.25	10 / 0.25	10 / 0.25
	40,400	15th	4 / 0.26	5 / 0.26	7 / 0.25	7 / 0.25	9 / 0.25	10 / 0.25	12 / 0.24	12 / 0.24	12 / 0.24	12 / 0.24	13 / 0.25	14 / 0.24	14 / 0.24	15 / 0.24	15 / 0.24	15 / 0.24	15 / 0.24	15 / 0.24	15 / 0.24	15 / 0.24	15 / 0.24	15 / 0.24
	45,800	20th	4 / 0.26	6 / 0.25	7 / 0.25	9 / 0.24	11 / 0.24	13 / 0.24	15 / 0.23	15 / 0.24	15 / 0.24	15 / 0.24	17 / 0.23	17 / 0.23	18 / 0.23	19 / 0.23	19 / 0.23	19 / 0.23	19 / 0.23	20 / 0.22	20 / 0.22	20 / 0.22	20 / 0.22	20 / 0.22
	52,900	25th	4 / 0.26	6 / 0.25	9 / 0.24	11 / 0.23	12 / 0.24	15 / 0.23	16 / 0.23	16 / 0.23	17 / 0.23	17 / 0.23	19 / 0.23	20 / 0.23	21 / 0.22	22 / 0.21	23 / 0.21	23 / 0.21	24 / 0.21	25 / 0.2	25 / 0.2	25 / 0.2	25 / 0.2	25 / 0.2
	59,900	30th	4 / 0.26	7 / 0.25	10 / 0.24	12 / 0.23	15 / 0.22	18 / 0.22	19 / 0.22	20 / 0.22	20 / 0.22	21 / 0.21	23 / 0.21	23 / 0.21	25 / 0.2	26 / 0.2	26 / 0.2	27 / 0.19	28 / 0.19	29 / 0.19	30 / 0.18	30 / 0.18	30 / 0.18	30 / 0.18
	65,100	35th	4 / 0.26	9 / 0.24	11 / 0.24	14 / 0.22	17 / 0.22	20 / 0.21	22 / 0.21	22 / 0.21	23 / 0.21	24 / 0.2	26 / 0.2	27 / 0.2	28 / 0.19	29 / 0.19	31 / 0.18	32 / 0.18	33 / 0.17	34 / 0.17	35 / 0.16	35 / 0.16	35 / 0.16	35 / 0.16
	70,700	40th	4 / 0.26	10 / 0.24	12 / 0.23	16 / 0.21	19 / 0.21	22 / 0.2	24 / 0.2	24 / 0.2	25 / 0.19	26 / 0.19	28 / 0.19	30 / 0.18	31 / 0.17	33 / 0.17	35 / 0.16	36 / 0.16	37 / 0.15	38 / 0.15	39 / 0.15	40 / 0.14	40 / 0.14	40 / 0.14
	79,100	45th	4 / 0.26	14 / 0.21	17 / 0.2	21 / 0.18	23 / 0.18	26 / 0.18	28 / 0.18	29 / 0.17	29 / 0.17	30 / 0.17	32 / 0.17	33 / 0.17	36 / 0.15	37 / 0.15	39 / 0.14	40 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13	45 / 0.13
	89,100	50th	4 / 0.26	15 / 0.2	17 / 0.2	23 / 0.18	24 / 0.18	29 / 0.17	32 / 0.16	33 / 0.16	35 / 0.16	35 / 0.16	36 / 0.15	37 / 0.15	39 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	45 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	50 / 0.11
	101,500	55th	7 / 0.25	16 / 0.2	19 / 0.19	24 / 0.17	28 / 0.17	33 / 0.16	35 / 0.16	36 / 0.15	38 / 0.15	38 / 0.15	39 / 0.14	41 / 0.14	42 / 0.13	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.11	55 / 0.11	55 / 0.11
	110,000	60th	7 / 0.25	22 / 0.18	25 / 0.17	30 / 0.16	33 / 0.16	40 / 0.14	42 / 0.14	44 / 0.13	44 / 0.13	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.11	56 / 0.1	57 / 0.1	58 / 0.1	59 / 0.1	60 / 0.1	60 / 0.1
	122,500	65th	7 / 0.25	22 / 0.18	25 / 0.17	33 / 0.15	37 / 0.15	42 / 0.13	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.11	57 / 0.1	58 / 0.1	61 / 0.1	62 / 0.1	63 / 0.1	64 / 0.1	65 / 0.1	65 / 0.1
	132,400	70th	7 / 0.24	24 / 0.18	27 / 0.17	34 / 0.15	40 / 0.14	45 / 0.13	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.11	56 / 0.1	59 / 0.1	-	-	65 / 0.1	66 / 0.1	68 / 0.1	69 / 0.1	70 / 0.11	70 / 0.11
	142,700	75th	7 / 0.24	29 / 0.16	34 / 0.15	41 / 0.13	49 / 0.12	53 / 0.11	54 / 0.11	56 / 0.1	58 / 0.1	58 / 0.1	-	-	-	-	-	-	-	-	73 / 0.11	74 / 0.11	75 / 0.11	75 / 0.11
	160,200	80th	10 / 0.23	34 / 0.15	40 / 0.13	48 / 0.12	55 / 0.11	59 / 0.1	60 / 0.1	63 / 0.09	-	-	-	-	-	-	-	-	-	-	-	80 / 0.12	80 / 0.12	80 / 0.12
	182,500	85th	10 / 0.23	40 / 0.13	49 / 0.11	56 / 0.11	65 / 0.1	68 / 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.14	85 / 0.14
	214,800	90th	12 / 0.22	47 / 0.12	56 / 0.11	60 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.13	56 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 106. Percent Drought Prediction and MSE of Drought Scenario 12 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 12			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28	0 / 0.28
	15,300	5th	0 / 0.28	3 / 0.29	4 / 0.28	4 / 0.28	4 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28	5 / 0.28
	30,700	10th	3 / 0.29	5 / 0.28	6 / 0.28	6 / 0.28	7 / 0.28	8 / 0.27	8 / 0.28	8 / 0.28	9 / 0.27	9 / 0.27	9 / 0.27	9 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27	10 / 0.27
	40,400	15th	4 / 0.29	5 / 0.28	7 / 0.27	7 / 0.28	9 / 0.27	10 / 0.27	12 / 0.26	12 / 0.26	12 / 0.26	12 / 0.26	13 / 0.27	14 / 0.26	14 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26	15 / 0.26
	45,800	20th	4 / 0.29	6 / 0.28	7 / 0.27	9 / 0.26	11 / 0.26	13 / 0.26	15 / 0.25	15 / 0.25	15 / 0.25	15 / 0.26	17 / 0.25	17 / 0.25	18 / 0.25	19 / 0.24	19 / 0.24	19 / 0.24	19 / 0.24	20 / 0.24	20 / 0.24	20 / 0.24	20 / 0.24	20 / 0.24
	52,900	25th	4 / 0.29	6 / 0.28	9 / 0.26	11 / 0.25	12 / 0.26	15 / 0.25	16 / 0.25	16 / 0.25	17 / 0.25	17 / 0.25	19 / 0.25	20 / 0.24	21 / 0.23	22 / 0.23	23 / 0.22	23 / 0.22	24 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22	25 / 0.22
	59,900	30th	4 / 0.29	7 / 0.27	10 / 0.26	12 / 0.25	15 / 0.24	18 / 0.23	19 / 0.24	20 / 0.23	20 / 0.23	21 / 0.23	23 / 0.23	23 / 0.23	25 / 0.21	26 / 0.21	26 / 0.21	27 / 0.21	28 / 0.2	29 / 0.2	30 / 0.19	30 / 0.19	30 / 0.19	
	65,100	35th	4 / 0.29	9 / 0.26	11 / 0.26	14 / 0.24	17 / 0.23	20 / 0.23	22 / 0.22	22 / 0.22	23 / 0.22	24 / 0.21	26 / 0.21	27 / 0.21	28 / 0.2	29 / 0.2	31 / 0.19	32 / 0.18	33 / 0.18	34 / 0.17	35 / 0.17	35 / 0.17	35 / 0.17	
	70,700	40th	4 / 0.29	10 / 0.26	12 / 0.25	16 / 0.23	19 / 0.22	22 / 0.22	24 / 0.21	24 / 0.21	25 / 0.21	26 / 0.2	28 / 0.2	30 / 0.19	31 / 0.18	33 / 0.17	35 / 0.17	36 / 0.16	37 / 0.16	38 / 0.15	39 / 0.15	40 / 0.15	40 / 0.15	
	79,100	45th	4 / 0.29	14 / 0.22	17 / 0.21	21 / 0.2	23 / 0.19	26 / 0.19	28 / 0.18	29 / 0.18	29 / 0.18	30 / 0.18	32 / 0.18	33 / 0.17	36 / 0.16	37 / 0.15	39 / 0.15	40 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13	
	89,100	50th	4 / 0.29	15 / 0.22	17 / 0.21	23 / 0.19	24 / 0.19	29 / 0.18	32 / 0.17	33 / 0.16	35 / 0.16	35 / 0.16	36 / 0.16	37 / 0.15	39 / 0.14	41 / 0.14	43 / 0.13	44 / 0.13	45 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	
	101,500	55th	7 / 0.27	16 / 0.21	19 / 0.2	24 / 0.18	28 / 0.17	33 / 0.16	35 / 0.15	36 / 0.15	38 / 0.14	38 / 0.14	39 / 0.14	41 / 0.14	42 / 0.13	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.11	55 / 0.11	
	110,000	60th	7 / 0.27	22 / 0.19	25 / 0.18	30 / 0.17	33 / 0.16	40 / 0.14	42 / 0.13	44 / 0.13	44 / 0.13	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.11	56 / 0.11	57 / 0.1	58 / 0.1	59 / 0.1	60 / 0.11	
	122,500	65th	7 / 0.27	22 / 0.19	25 / 0.18	33 / 0.16	37 / 0.14	42 / 0.13	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.11	57 / 0.11	58 / 0.1	61 / 0.11	62 / 0.11	63 / 0.11	64 / 0.11	65 / 0.11	
	132,400	70th	7 / 0.27	24 / 0.19	27 / 0.18	34 / 0.15	40 / 0.14	45 / 0.12	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.11	56 / 0.11	59 / 0.11	-	-	65 / 0.11	66 / 0.11	68 / 0.11	69 / 0.11	70 / 0.12	
	142,700	75th	7 / 0.27	29 / 0.17	34 / 0.16	41 / 0.14	49 / 0.12	53 / 0.11	54 / 0.11	56 / 0.1	58 / 0.1	58 / 0.1	-	-	-	-	-	-	-	-	73 / 0.12	74 / 0.12	75 / 0.13	
	160,200	80th	10 / 0.25	34 / 0.16	40 / 0.14	48 / 0.12	55 / 0.11	59 / 0.1	60 / 0.1	63 / 0.1	-	-	-	-	-	-	-	-	-	-	-	80 / 0.14	80 / 0.14	
	182,500	85th	10 / 0.25	40 / 0.13	49 / 0.11	56 / 0.11	65 / 0.11	68 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.16	
	214,800	90th	12 / 0.24	47 / 0.12	56 / 0.11	60 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.14	56 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 107. Percent Drought Prediction and MSE of Drought Scenario 13 of combined inflow/SPI thresholds over the period of record, Model Period C (1976-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 13			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32	0 / 0.32
	15,300	5th	0 / 0.32	3 / 0.32	4 / 0.32	4 / 0.32	4 / 0.32	5 / 0.31	5 / 0.31	5 / 0.31	5 / 0.31	5 / 0.31	5 / 0.31	5 / 0.31	5 / 0.31	5 / 0.32	5 / 0.32	5 / 0.32	5 / 0.32	5 / 0.32	5 / 0.32	5 / 0.32	5 / 0.32	5 / 0.32
	30,700	10th	3 / 0.33	5 / 0.32	6 / 0.31	6 / 0.32	7 / 0.31	8 / 0.31	8 / 0.31	8 / 0.31	9 / 0.3	9 / 0.31	9 / 0.31	9 / 0.31	10 / 0.3	10 / 0.3	10 / 0.3	10 / 0.3	10 / 0.3	10 / 0.3	10 / 0.3	10 / 0.3	10 / 0.3
	40,400	15th	4 / 0.32	5 / 0.32	7 / 0.31	7 / 0.31	9 / 0.3	10 / 0.3	12 / 0.29	12 / 0.29	12 / 0.29	12 / 0.29	13 / 0.3	14 / 0.29	14 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29	15 / 0.29
	45,800	20th	4 / 0.32	6 / 0.31	7 / 0.31	9 / 0.3	11 / 0.29	13 / 0.29	15 / 0.28	15 / 0.28	15 / 0.28	15 / 0.28	17 / 0.28	17 / 0.28	18 / 0.27	19 / 0.27	19 / 0.27	19 / 0.27	19 / 0.27	20 / 0.26	20 / 0.26	20 / 0.26	20 / 0.26
	52,900	25th	4 / 0.32	6 / 0.31	9 / 0.29	11 / 0.28	12 / 0.29	15 / 0.28	16 / 0.28	16 / 0.28	17 / 0.27	17 / 0.27	19 / 0.27	20 / 0.26	21 / 0.26	22 / 0.25	23 / 0.24	23 / 0.24	24 / 0.24	25 / 0.23	25 / 0.23	25 / 0.24	25 / 0.24
	59,900	30th	4 / 0.32	7 / 0.31	10 / 0.29	12 / 0.28	15 / 0.27	18 / 0.26	19 / 0.26	20 / 0.25	20 / 0.25	21 / 0.25	23 / 0.24	23 / 0.25	25 / 0.23	26 / 0.23	26 / 0.23	27 / 0.22	28 / 0.22	29 / 0.21	30 / 0.2	30 / 0.2	30 / 0.2
	65,100	35th	4 / 0.32	9 / 0.29	11 / 0.28	14 / 0.26	17 / 0.25	20 / 0.24	22 / 0.24	22 / 0.24	23 / 0.23	24 / 0.23	26 / 0.23	27 / 0.22	28 / 0.21	29 / 0.21	31 / 0.19	32 / 0.19	33 / 0.18	34 / 0.18	35 / 0.17	35 / 0.17	35 / 0.17
	70,700	40th	4 / 0.32	10 / 0.28	12 / 0.27	16 / 0.25	19 / 0.24	22 / 0.23	24 / 0.22	24 / 0.23	25 / 0.22	26 / 0.21	28 / 0.21	30 / 0.2	31 / 0.19	33 / 0.18	35 / 0.17	36 / 0.17	37 / 0.16	38 / 0.16	39 / 0.15	40 / 0.15	40 / 0.15
	79,100	45th	4 / 0.32	14 / 0.25	17 / 0.23	21 / 0.21	23 / 0.21	26 / 0.2	28 / 0.2	29 / 0.19	29 / 0.19	30 / 0.19	32 / 0.19	33 / 0.18	36 / 0.17	37 / 0.16	39 / 0.15	40 / 0.15	41 / 0.14	43 / 0.14	44 / 0.13	44 / 0.13	45 / 0.13
	89,100	50th	4 / 0.32	15 / 0.24	17 / 0.23	23 / 0.2	24 / 0.2	29 / 0.19	32 / 0.18	33 / 0.17	35 / 0.17	35 / 0.17	36 / 0.16	37 / 0.16	39 / 0.15	41 / 0.14	43 / 0.13	44 / 0.13	45 / 0.13	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11
	101,500	55th	7 / 0.3	16 / 0.23	19 / 0.22	24 / 0.2	28 / 0.19	33 / 0.17	35 / 0.16	36 / 0.16	38 / 0.15	38 / 0.15	39 / 0.15	41 / 0.14	42 / 0.14	44 / 0.13	47 / 0.12	49 / 0.12	49 / 0.12	51 / 0.11	52 / 0.11	54 / 0.11	55 / 0.11
	110,000	60th	7 / 0.3	22 / 0.2	25 / 0.19	30 / 0.17	33 / 0.16	40 / 0.14	42 / 0.14	44 / 0.13	44 / 0.13	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	50 / 0.11	53 / 0.11	54 / 0.11	56 / 0.11	57 / 0.1	58 / 0.1	59 / 0.1	60 / 0.11
	122,500	65th	7 / 0.3	22 / 0.2	25 / 0.19	33 / 0.16	37 / 0.15	42 / 0.13	45 / 0.13	46 / 0.12	47 / 0.12	48 / 0.12	49 / 0.12	50 / 0.11	52 / 0.11	54 / 0.11	57 / 0.1	58 / 0.1	61 / 0.11	62 / 0.1	63 / 0.11	64 / 0.11	65 / 0.11
	132,400	70th	7 / 0.3	24 / 0.19	27 / 0.17	34 / 0.15	40 / 0.13	45 / 0.12	48 / 0.12	50 / 0.11	51 / 0.11	52 / 0.11	53 / 0.11	54 / 0.11	56 / 0.11	59 / 0.11	-	-	65 / 0.11	66 / 0.11	68 / 0.12	69 / 0.12	70 / 0.12
	142,700	75th	7 / 0.3	29 / 0.17	34 / 0.15	41 / 0.13	49 / 0.12	53 / 0.11	54 / 0.11	56 / 0.11	58 / 0.11	58 / 0.11	-	-	-	-	-	-	-	-	73 / 0.13	74 / 0.13	75 / 0.14
	160,200	80th	10 / 0.28	34 / 0.15	40 / 0.13	48 / 0.12	55 / 0.11	59 / 0.1	60 / 0.1	63 / 0.1	-	-	-	-	-	-	-	-	-	-	-	80 / 0.15	80 / 0.15
	182,500	85th	10 / 0.28	40 / 0.13	49 / 0.11	56 / 0.11	65 / 0.11	68 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.18
	214,800	90th	12 / 0.27	47 / 0.12	56 / 0.11	60 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.16	56 / 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Mean Squared Error Results – Model Period D (1926-1942)

Table 108. Percent Drought Prediction and MSE of Drought Scenario 1 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 1			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	7,300	0th	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09
	18,100	5th	0 / 0.09	3 / 0.08	4 / 0.08	4 / 0.08	4 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08
	24,600	10th	3 / 0.08	5 / 0.08	6 / 0.08	6 / 0.08	7 / 0.08	8 / 0.08	8 / 0.08	8 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08
	28,600	15th	4 / 0.08	5 / 0.08	7 / 0.08	7 / 0.08	9 / 0.08	10 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	13 / 0.08	14 / 0.08	14 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08
	33,000	20th	4 / 0.08	6 / 0.08	7 / 0.08	9 / 0.08	11 / 0.08	13 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	17 / 0.08	17 / 0.08	18 / 0.07	19 / 0.07	19 / 0.07	19 / 0.07	19 / 0.07	20 / 0.07	20 / 0.07	20 / 0.07	20 / 0.07	20 / 0.07
	36,300	25th	4 / 0.08	6 / 0.08	9 / 0.08	11 / 0.08	12 / 0.08	15 / 0.08	16 / 0.08	16 / 0.08	17 / 0.08	17 / 0.08	19 / 0.08	20 / 0.07	21 / 0.07	22 / 0.07	23 / 0.07	23 / 0.07	24 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07
	39,700	30th	4 / 0.08	7 / 0.08	10 / 0.08	12 / 0.08	15 / 0.08	18 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	21 / 0.08	23 / 0.07	23 / 0.07	25 / 0.07	26 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06
	44,000	35th	4 / 0.08	9 / 0.09	11 / 0.08	14 / 0.08	17 / 0.08	20 / 0.08	22 / 0.08	22 / 0.08	23 / 0.08	24 / 0.08	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	31 / 0.07	32 / 0.07	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	48,500	40th	4 / 0.08	10 / 0.09	12 / 0.08	16 / 0.08	19 / 0.08	22 / 0.08	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	54,800	45th	4 / 0.08	14 / 0.08	17 / 0.07	21 / 0.08	23 / 0.08	26 / 0.08	28 / 0.08	29 / 0.07	29 / 0.08	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	
	58,200	50th	4 / 0.08	15 / 0.07	17 / 0.07	23 / 0.08	24 / 0.07	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.07	35 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	
	63,400	55th	7 / 0.08	16 / 0.07	19 / 0.07	24 / 0.07	28 / 0.07	33 / 0.07	35 / 0.07	36 / 0.07	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.06	42 / 0.06	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	
	67,800	60th	7 / 0.08	22 / 0.06	25 / 0.06	30 / 0.07	33 / 0.06	40 / 0.06	42 / 0.06	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.03	59 / 0.03	60 / 0.03	
	72,200	65th	7 / 0.08	22 / 0.06	25 / 0.06	33 / 0.06	37 / 0.06	42 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.03	61 / 0.03	62 / 0.03	63 / 0.03	64 / 0.03	65 / 0.03	
	79,200	70th	7 / 0.08	24 / 0.06	27 / 0.05	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.03	-	-	65 / 0.03	66 / 0.03	68 / 0.03	69 / 0.03	70 / 0.03	
	85,500	75th	7 / 0.08	29 / 0.05	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.03	74 / 0.03	75 / 0.03	
	96,200	80th	10 / 0.07	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.03	63 / 0.03	-	-	-	-	-	-	-	-	-	-	-	80 / 0.03	80 / 0.03	
	107,800	85th	10 / 0.07	40 / 0.05	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.04	
	120,800	90th	12 / 0.07	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	171,000	95th	32 / 0.05	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	317,000	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 109. Percent Drought Prediction and MSE of Drought Scenario 3 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 3			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13
	15,300	5th	0 / 0.13	3 / 0.13	4 / 0.12	4 / 0.12	4 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12
	30,700	10th	3 / 0.13	5 / 0.12	6 / 0.12	6 / 0.12	7 / 0.12	8 / 0.12	8 / 0.12	8 / 0.12	9 / 0.12	9 / 0.12	9 / 0.12	9 / 0.12	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11
	40,400	15th	4 / 0.12	5 / 0.12	7 / 0.12	7 / 0.12	9 / 0.12	10 / 0.11	12 / 0.11	12 / 0.11	12 / 0.11	12 / 0.11	13 / 0.11	14 / 0.11	14 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1
	45,800	20th	4 / 0.12	6 / 0.12	7 / 0.12	9 / 0.11	11 / 0.11	13 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	17 / 0.09	17 / 0.09	18 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09
	52,900	25th	4 / 0.12	6 / 0.12	9 / 0.12	11 / 0.11	12 / 0.11	15 / 0.1	16 / 0.1	16 / 0.1	17 / 0.1	17 / 0.1	19 / 0.09	20 / 0.09	21 / 0.09	22 / 0.09	23 / 0.09	23 / 0.09	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.12	7 / 0.12	10 / 0.12	12 / 0.11	15 / 0.11	18 / 0.1	19 / 0.1	20 / 0.09	20 / 0.09	21 / 0.09	23 / 0.09	23 / 0.09	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	30 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	65,100	35th	4 / 0.12	9 / 0.12	11 / 0.12	14 / 0.11	17 / 0.1	20 / 0.09	22 / 0.09	22 / 0.09	23 / 0.09	24 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	31 / 0.07	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.12	10 / 0.12	12 / 0.12	16 / 0.11	19 / 0.11	22 / 0.09	24 / 0.09	24 / 0.09	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.08	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.12	14 / 0.11	17 / 0.1	21 / 0.1	23 / 0.1	26 / 0.08	28 / 0.08	29 / 0.08	29 / 0.08	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.12	15 / 0.11	17 / 0.1	23 / 0.1	24 / 0.09	29 / 0.08	32 / 0.07	33 / 0.07	35 / 0.07	35 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	50 / 0.04
	101,500	55th	7 / 0.12	16 / 0.1	19 / 0.09	24 / 0.09	28 / 0.08	33 / 0.07	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.12	22 / 0.09	25 / 0.08	30 / 0.08	33 / 0.07	40 / 0.06	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.12	22 / 0.09	25 / 0.08	33 / 0.07	37 / 0.07	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.12	24 / 0.08	27 / 0.08	34 / 0.07	40 / 0.06	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.12	29 / 0.07	34 / 0.06	41 / 0.06	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.05	74 / 0.05	75 / 0.05	75 / 0.05
	160,200	80th	10 / 0.11	34 / 0.06	40 / 0.06	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.06	80 / 0.06	80 / 0.06
	182,500	85th	10 / 0.11	40 / 0.06	49 / 0.05	56 / 0.04	65 / 0.03	68 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.07	85 / 0.07
	214,800	90th	12 / 0.1	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.07	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 110. Percent Drought Prediction and MSE of Drought Scenario 4 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 4			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07
	15,300	5th	0 / 0.07	3 / 0.06	4 / 0.06	4 / 0.06	4 / 0.06	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05
	30,700	10th	3 / 0.06	5 / 0.06	6 / 0.06	6 / 0.06	7 / 0.06	8 / 0.05	8 / 0.05	8 / 0.05	9 / 0.05	9 / 0.05	9 / 0.05	9 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05
	40,400	15th	4 / 0.06	5 / 0.06	7 / 0.06	7 / 0.06	9 / 0.06	10 / 0.06	12 / 0.05	12 / 0.05	12 / 0.05	12 / 0.05	13 / 0.05	14 / 0.05	14 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05
	45,800	20th	4 / 0.06	6 / 0.06	7 / 0.06	9 / 0.06	11 / 0.05	13 / 0.06	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	17 / 0.05	17 / 0.05	18 / 0.05	19 / 0.05	19 / 0.05	19 / 0.05	19 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05
	52,900	25th	4 / 0.06	6 / 0.06	9 / 0.06	11 / 0.06	12 / 0.06	15 / 0.06	16 / 0.05	16 / 0.05	17 / 0.05	17 / 0.05	19 / 0.05	20 / 0.05	21 / 0.05	22 / 0.05	23 / 0.05	23 / 0.05	24 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05
	59,900	30th	4 / 0.06	7 / 0.06	10 / 0.06	12 / 0.06	15 / 0.05	18 / 0.05	19 / 0.05	20 / 0.05	20 / 0.05	21 / 0.05	23 / 0.05	23 / 0.05	25 / 0.05	26 / 0.05	26 / 0.05	27 / 0.05	28 / 0.05	29 / 0.05	30 / 0.05	30 / 0.05	30 / 0.05	30 / 0.05
	65,100	35th	4 / 0.06	9 / 0.07	11 / 0.06	14 / 0.06	17 / 0.05	20 / 0.06	22 / 0.06	22 / 0.06	23 / 0.06	24 / 0.06	26 / 0.06	27 / 0.06	28 / 0.05	29 / 0.05	31 / 0.05	32 / 0.05	33 / 0.05	34 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05
	70,700	40th	4 / 0.06	10 / 0.07	12 / 0.07	16 / 0.07	19 / 0.06	22 / 0.06	24 / 0.06	24 / 0.06	25 / 0.06	26 / 0.06	28 / 0.06	30 / 0.06	31 / 0.06	33 / 0.06	35 / 0.05	36 / 0.05	37 / 0.05	38 / 0.05	39 / 0.05	40 / 0.05	40 / 0.05	40 / 0.05
	79,100	45th	4 / 0.06	14 / 0.07	17 / 0.06	21 / 0.06	23 / 0.06	26 / 0.06	28 / 0.06	29 / 0.06	29 / 0.06	30 / 0.06	32 / 0.06	33 / 0.06	36 / 0.06	37 / 0.06	39 / 0.05	40 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.06	15 / 0.07	17 / 0.06	23 / 0.06	24 / 0.06	29 / 0.06	32 / 0.06	33 / 0.06	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.05	39 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	50 / 0.04
	101,500	55th	7 / 0.06	16 / 0.07	19 / 0.06	24 / 0.06	28 / 0.06	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.06	22 / 0.06	25 / 0.06	30 / 0.05	33 / 0.05	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.06	22 / 0.06	25 / 0.06	33 / 0.05	37 / 0.05	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.03	65 / 0.03
	132,400	70th	7 / 0.06	24 / 0.06	27 / 0.06	34 / 0.05	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.03	66 / 0.03	68 / 0.03	69 / 0.03	70 / 0.03	70 / 0.03
	142,700	75th	7 / 0.06	29 / 0.06	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.02	74 / 0.02	75 / 0.02	75 / 0.02
	160,200	80th	10 / 0.06	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.03	-	-	-	-	-	-	-	-	-	-	-	80 / 0.02	80 / 0.02	80 / 0.02
	182,500	85th	10 / 0.06	40 / 0.05	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.02	85 / 0.02
	214,800	90th	12 / 0.05	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.04	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 111. Percent Drought Prediction and MSE of Drought Scenario 6 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 6			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03
	15,300	5th	0 / 0.03	3 / 0.03	4 / 0.03	4 / 0.04	4 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04
	30,700	10th	3 / 0.03	5 / 0.03	6 / 0.04	6 / 0.04	7 / 0.04	8 / 0.04	8 / 0.04	8 / 0.04	9 / 0.04	9 / 0.04	9 / 0.04	9 / 0.04	10 / 0.04	10 / 0.04	10 / 0.04	10 / 0.04	10 / 0.04	10 / 0.04	10 / 0.04	10 / 0.04	10 / 0.04	10 / 0.04
	40,400	15th	4 / 0.03	5 / 0.03	7 / 0.04	7 / 0.04	9 / 0.04	10 / 0.04	12 / 0.04	12 / 0.04	12 / 0.04	12 / 0.04	13 / 0.04	14 / 0.04	14 / 0.04	15 / 0.04	15 / 0.04	15 / 0.04	15 / 0.04	15 / 0.04	15 / 0.04	15 / 0.04	15 / 0.04	15 / 0.04
	45,800	20th	4 / 0.03	6 / 0.03	7 / 0.04	9 / 0.04	11 / 0.04	13 / 0.04	15 / 0.04	15 / 0.04	15 / 0.04	15 / 0.04	17 / 0.04	17 / 0.04	18 / 0.04	19 / 0.04	19 / 0.04	19 / 0.04	19 / 0.04	20 / 0.04	20 / 0.04	20 / 0.04	20 / 0.04	20 / 0.04
	52,900	25th	4 / 0.03	6 / 0.03	9 / 0.04	11 / 0.04	12 / 0.04	15 / 0.05	16 / 0.05	16 / 0.05	17 / 0.05	17 / 0.05	19 / 0.05	20 / 0.04	21 / 0.04	22 / 0.04	23 / 0.04	23 / 0.04	24 / 0.04	25 / 0.04	25 / 0.04	25 / 0.04	25 / 0.04	25 / 0.04
	59,900	30th	4 / 0.03	7 / 0.03	10 / 0.04	12 / 0.04	15 / 0.05	18 / 0.05	19 / 0.05	20 / 0.05	20 / 0.05	21 / 0.05	23 / 0.05	23 / 0.05	25 / 0.05	26 / 0.05	26 / 0.05	27 / 0.05	28 / 0.05	29 / 0.05	30 / 0.04	30 / 0.04	30 / 0.04	30 / 0.04
	65,100	35th	4 / 0.03	9 / 0.04	11 / 0.04	14 / 0.04	17 / 0.05	20 / 0.05	22 / 0.05	22 / 0.05	23 / 0.05	24 / 0.05	26 / 0.05	27 / 0.05	28 / 0.05	29 / 0.05	31 / 0.05	32 / 0.05	33 / 0.05	34 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05
	70,700	40th	4 / 0.03	10 / 0.04	12 / 0.04	16 / 0.05	19 / 0.05	22 / 0.06	24 / 0.06	24 / 0.06	25 / 0.06	26 / 0.06	28 / 0.06	30 / 0.06	31 / 0.06	33 / 0.05	35 / 0.05	36 / 0.05	37 / 0.05	38 / 0.05	39 / 0.05	40 / 0.05	40 / 0.05	40 / 0.05
	79,100	45th	4 / 0.03	14 / 0.05	17 / 0.05	21 / 0.06	23 / 0.06	26 / 0.06	28 / 0.06	29 / 0.06	29 / 0.06	30 / 0.06	32 / 0.06	33 / 0.06	36 / 0.05	37 / 0.05	39 / 0.05	40 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05
	89,100	50th	4 / 0.03	15 / 0.05	17 / 0.05	23 / 0.06	24 / 0.06	29 / 0.06	32 / 0.06	33 / 0.06	35 / 0.06	35 / 0.06	36 / 0.05	37 / 0.05	39 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	
	101,500	55th	7 / 0.03	16 / 0.05	19 / 0.05	24 / 0.06	28 / 0.05	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	
	110,000	60th	7 / 0.03	22 / 0.04	25 / 0.04	30 / 0.05	33 / 0.05	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04		
	122,500	65th	7 / 0.03	22 / 0.04	25 / 0.04	33 / 0.05	37 / 0.05	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	
	132,400	70th	7 / 0.03	24 / 0.05	27 / 0.05	34 / 0.05	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.03	66 / 0.03	68 / 0.03	69 / 0.03	70 / 0.03	
	142,700	75th	7 / 0.03	29 / 0.04	34 / 0.04	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.02	74 / 0.02	75 / 0.02	
	160,200	80th	10 / 0.03	34 / 0.04	40 / 0.04	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.03	-	-	-	-	-	-	-	-	-	-	-	80 / 0.02	80 / 0.02	
	182,500	85th	10 / 0.03	40 / 0.04	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.02	
	214,800	90th	12 / 0.03	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.03	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 112. Percent Drought Prediction and MSE of Drought Scenario 7 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 7			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06
	15,300	5th	0 / 0.06	3 / 0.06	4 / 0.06	4 / 0.06	4 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06
	30,700	10th	3 / 0.06	5 / 0.05	6 / 0.06	6 / 0.06	7 / 0.06	8 / 0.06	8 / 0.06	8 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06
	40,400	15th	4 / 0.05	5 / 0.05	7 / 0.06	7 / 0.06	9 / 0.06	10 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	13 / 0.06	14 / 0.06	14 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06
	45,800	20th	4 / 0.05	6 / 0.05	7 / 0.06	9 / 0.06	11 / 0.06	13 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	17 / 0.06	17 / 0.06	18 / 0.06	19 / 0.06	19 / 0.06	19 / 0.06	19 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06
	52,900	25th	4 / 0.05	6 / 0.05	9 / 0.06	11 / 0.06	12 / 0.06	15 / 0.06	16 / 0.06	16 / 0.06	17 / 0.06	17 / 0.06	19 / 0.06	20 / 0.06	21 / 0.06	22 / 0.06	23 / 0.06	23 / 0.06	24 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06
	59,900	30th	4 / 0.05	7 / 0.05	10 / 0.06	12 / 0.06	15 / 0.06	18 / 0.06	19 / 0.06	20 / 0.06	20 / 0.06	21 / 0.06	23 / 0.06	23 / 0.06	25 / 0.06	26 / 0.06	26 / 0.06	27 / 0.06	28 / 0.06	29 / 0.06	30 / 0.05	30 / 0.05	30 / 0.05	30 / 0.05
	65,100	35th	4 / 0.05	9 / 0.06	11 / 0.06	14 / 0.06	17 / 0.06	20 / 0.07	22 / 0.07	22 / 0.07	23 / 0.07	24 / 0.07	26 / 0.07	27 / 0.06	28 / 0.06	29 / 0.06	31 / 0.06	32 / 0.06	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.05	10 / 0.06	12 / 0.06	16 / 0.07	19 / 0.07	22 / 0.07	24 / 0.07	24 / 0.07	25 / 0.07	26 / 0.07	28 / 0.07	30 / 0.07	31 / 0.06	33 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.05	40 / 0.05	40 / 0.05
	79,100	45th	4 / 0.05	14 / 0.06	17 / 0.06	21 / 0.07	23 / 0.07	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.05	15 / 0.06	17 / 0.06	23 / 0.07	24 / 0.07	29 / 0.07	32 / 0.07	33 / 0.06	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	50 / 0.04
	101,500	55th	7 / 0.05	16 / 0.06	19 / 0.06	24 / 0.07	28 / 0.06	33 / 0.07	35 / 0.07	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.06	42 / 0.06	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.05	22 / 0.06	25 / 0.06	30 / 0.06	33 / 0.06	40 / 0.06	42 / 0.06	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.03	60 / 0.03	60 / 0.03
	122,500	65th	7 / 0.05	22 / 0.06	25 / 0.06	33 / 0.06	37 / 0.05	42 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.03	62 / 0.03	63 / 0.03	64 / 0.03	65 / 0.03	65 / 0.03
	132,400	70th	7 / 0.05	24 / 0.06	27 / 0.06	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.03	-	-	65 / 0.02	66 / 0.02	68 / 0.02	69 / 0.02	70 / 0.02	70 / 0.02
	142,700	75th	7 / 0.05	29 / 0.05	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.03	58 / 0.03	-	-	-	-	-	-	-	-	73 / 0.02	74 / 0.02	75 / 0.02	75 / 0.02
	160,200	80th	10 / 0.05	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.04	59 / 0.03	60 / 0.03	63 / 0.03	-	-	-	-	-	-	-	-	-	-	-	80 / 0.01	80 / 0.01	80 / 0.01
	182,500	85th	10 / 0.05	40 / 0.05	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.02	85 / 0.02
	214,800	90th	12 / 0.05	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.04	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 113. Percent Drought Prediction and MSE of Drought Scenario 8 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 8			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06
	15,300	5th	0 / 0.06	3 / 0.06	4 / 0.06	4 / 0.06	4 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06
	30,700	10th	3 / 0.06	5 / 0.05	6 / 0.06	6 / 0.06	7 / 0.06	8 / 0.06	8 / 0.06	8 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06
	40,400	15th	4 / 0.06	5 / 0.05	7 / 0.06	7 / 0.06	9 / 0.06	10 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	13 / 0.06	14 / 0.06	14 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06
	45,800	20th	4 / 0.06	6 / 0.05	7 / 0.06	9 / 0.06	11 / 0.06	13 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	17 / 0.06	17 / 0.06	18 / 0.06	19 / 0.06	19 / 0.06	19 / 0.06	19 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06
	52,900	25th	4 / 0.06	6 / 0.05	9 / 0.06	11 / 0.06	12 / 0.06	15 / 0.06	16 / 0.06	16 / 0.06	17 / 0.06	17 / 0.06	19 / 0.06	20 / 0.06	21 / 0.06	22 / 0.06	23 / 0.06	23 / 0.06	24 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06
	59,900	30th	4 / 0.06	7 / 0.05	10 / 0.06	12 / 0.06	15 / 0.06	18 / 0.07	19 / 0.06	20 / 0.06	20 / 0.06	21 / 0.06	23 / 0.06	23 / 0.06	25 / 0.06	26 / 0.06	26 / 0.06	27 / 0.06	28 / 0.06	29 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06
	65,100	35th	4 / 0.06	9 / 0.06	11 / 0.06	14 / 0.06	17 / 0.07	20 / 0.07	22 / 0.07	22 / 0.07	23 / 0.07	24 / 0.07	26 / 0.07	27 / 0.07	28 / 0.06	29 / 0.06	31 / 0.06	32 / 0.06	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.06	10 / 0.06	12 / 0.06	16 / 0.07	19 / 0.07	22 / 0.07	24 / 0.07	24 / 0.07	25 / 0.07	26 / 0.07	28 / 0.07	30 / 0.07	31 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.05	40 / 0.05	
	79,100	45th	4 / 0.06	14 / 0.07	17 / 0.06	21 / 0.08	23 / 0.07	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	
	89,100	50th	4 / 0.06	15 / 0.06	17 / 0.06	23 / 0.07	24 / 0.07	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	
	101,500	55th	7 / 0.05	16 / 0.06	19 / 0.06	24 / 0.07	28 / 0.07	33 / 0.07	35 / 0.07	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.06	42 / 0.06	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	
	110,000	60th	7 / 0.05	22 / 0.06	25 / 0.06	30 / 0.06	33 / 0.06	40 / 0.06	42 / 0.06	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.03	60 / 0.03	
	122,500	65th	7 / 0.05	22 / 0.06	25 / 0.06	33 / 0.06	37 / 0.05	42 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.03	62 / 0.03	63 / 0.03	64 / 0.03	65 / 0.03	
	132,400	70th	7 / 0.05	24 / 0.06	27 / 0.06	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.03	-	-	65 / 0.02	66 / 0.02	68 / 0.02	69 / 0.02	70 / 0.02	
	142,700	75th	7 / 0.05	29 / 0.05	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.03	58 / 0.03	-	-	-	-	-	-	-	-	73 / 0.02	74 / 0.02	75 / 0.02	
	160,200	80th	10 / 0.05	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.04	59 / 0.03	60 / 0.03	63 / 0.03	-	-	-	-	-	-	-	-	-	-	-	80 / 0.01	80 / 0.01	
	182,500	85th	10 / 0.05	40 / 0.05	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.02	
	214,800	90th	12 / 0.05	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.04	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 114. Percent Drought Prediction and MSE of Drought Scenario 9 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 9			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11
	15,300	5th	0 / 0.11	3 / 0.1	4 / 0.1	4 / 0.1	4 / 0.1	5 / 0.1	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11
	30,700	10th	3 / 0.1	5 / 0.1	6 / 0.1	6 / 0.1	7 / 0.1	8 / 0.1	8 / 0.1	8 / 0.1	9 / 0.1	9 / 0.1	9 / 0.1	9 / 0.1	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09
	40,400	15th	4 / 0.1	5 / 0.1	7 / 0.09	7 / 0.09	9 / 0.09	10 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	13 / 0.09	14 / 0.09	14 / 0.09	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08
	45,800	20th	4 / 0.1	6 / 0.1	7 / 0.09	9 / 0.09	11 / 0.09	13 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	17 / 0.08	17 / 0.08	18 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08
	52,900	25th	4 / 0.1	6 / 0.1	9 / 0.09	11 / 0.08	12 / 0.08	15 / 0.08	16 / 0.08	16 / 0.08	17 / 0.08	17 / 0.08	19 / 0.08	20 / 0.08	21 / 0.08	22 / 0.07	23 / 0.07	23 / 0.07	24 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07
	59,900	30th	4 / 0.1	7 / 0.09	10 / 0.08	12 / 0.08	15 / 0.08	18 / 0.08	19 / 0.08	20 / 0.08	20 / 0.07	21 / 0.07	23 / 0.07	23 / 0.07	25 / 0.07	26 / 0.07	26 / 0.07	27 / 0.06	28 / 0.06	29 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06
	65,100	35th	4 / 0.1	9 / 0.08	11 / 0.08	14 / 0.08	17 / 0.08	20 / 0.08	22 / 0.07	22 / 0.07	23 / 0.07	24 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.06	31 / 0.06	32 / 0.06	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.1	10 / 0.07	12 / 0.07	16 / 0.08	19 / 0.08	22 / 0.08	24 / 0.07	24 / 0.07	25 / 0.07	26 / 0.07	28 / 0.07	30 / 0.07	31 / 0.06	33 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.05	40 / 0.05	40 / 0.05	40 / 0.05
	79,100	45th	4 / 0.1	14 / 0.06	17 / 0.06	21 / 0.07	23 / 0.07	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.06	33 / 0.06	36 / 0.06	37 / 0.06	39 / 0.05	40 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.1	15 / 0.06	17 / 0.06	23 / 0.07	24 / 0.07	29 / 0.07	32 / 0.06	33 / 0.06	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	50 / 0.04
	101,500	55th	7 / 0.09	16 / 0.06	19 / 0.06	24 / 0.07	28 / 0.06	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.05	38 / 0.05	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.09	22 / 0.05	25 / 0.05	30 / 0.06	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.09	22 / 0.05	25 / 0.05	33 / 0.06	37 / 0.05	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.09	24 / 0.05	27 / 0.05	34 / 0.05	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.09	29 / 0.05	34 / 0.04	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.09	34 / 0.04	40 / 0.04	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.04	80 / 0.04	80 / 0.04
	182,500	85th	10 / 0.09	40 / 0.04	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.05	85 / 0.05
	214,800	90th	12 / 0.08	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.06	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 115. Percent Drought Prediction and MSE of Drought Scenario 10 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 10			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12
	15,300	5th	0 / 0.12	3 / 0.11	4 / 0.11	4 / 0.11	4 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12
	30,700	10th	3 / 0.11	5 / 0.11	6 / 0.11	6 / 0.11	7 / 0.11	8 / 0.11	8 / 0.11	8 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1
	40,400	15th	4 / 0.11	5 / 0.11	7 / 0.1	7 / 0.1	9 / 0.1	10 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	13 / 0.1	14 / 0.09	14 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09
	45,800	20th	4 / 0.11	6 / 0.11	7 / 0.1	9 / 0.1	11 / 0.1	13 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	17 / 0.09	17 / 0.09	18 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09
	52,900	25th	4 / 0.11	6 / 0.11	9 / 0.1	11 / 0.09	12 / 0.09	15 / 0.09	16 / 0.09	16 / 0.09	17 / 0.09	17 / 0.09	19 / 0.09	20 / 0.08	21 / 0.08	22 / 0.08	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.11	7 / 0.1	10 / 0.09	12 / 0.09	15 / 0.09	18 / 0.09	19 / 0.09	20 / 0.08	20 / 0.08	21 / 0.08	23 / 0.08	23 / 0.08	25 / 0.07	26 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	65,100	35th	4 / 0.11	9 / 0.09	11 / 0.09	14 / 0.09	17 / 0.08	20 / 0.09	22 / 0.08	22 / 0.08	23 / 0.08	24 / 0.08	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	31 / 0.07	32 / 0.07	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.11	10 / 0.08	12 / 0.08	16 / 0.08	19 / 0.08	22 / 0.08	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.07	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.11	14 / 0.07	17 / 0.07	21 / 0.08	23 / 0.08	26 / 0.08	28 / 0.08	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.11	15 / 0.07	17 / 0.07	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	50 / 0.04
	101,500	55th	7 / 0.1	16 / 0.07	19 / 0.07	24 / 0.08	28 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.1	22 / 0.06	25 / 0.06	30 / 0.07	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.1	22 / 0.06	25 / 0.06	33 / 0.06	37 / 0.06	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.1	24 / 0.06	27 / 0.05	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.1	29 / 0.05	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.1	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05	80 / 0.05	80 / 0.05
	182,500	85th	10 / 0.1	40 / 0.05	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06	85 / 0.06
	214,800	90th	12 / 0.09	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.06	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 116. Percent Drought Prediction and MSE of Drought Scenario 11 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 11			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12
	15,300	5th	0 / 0.12	3 / 0.11	4 / 0.11	4 / 0.12	4 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12
	30,700	10th	3 / 0.11	5 / 0.11	6 / 0.11	6 / 0.11	7 / 0.11	8 / 0.11	8 / 0.11	8 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1
	40,400	15th	4 / 0.11	5 / 0.11	7 / 0.1	7 / 0.1	9 / 0.1	10 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	13 / 0.1	14 / 0.09	14 / 0.1	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09
	45,800	20th	4 / 0.11	6 / 0.11	7 / 0.1	9 / 0.1	11 / 0.1	13 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	17 / 0.09	17 / 0.09	18 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09
	52,900	25th	4 / 0.11	6 / 0.11	9 / 0.1	11 / 0.09	12 / 0.09	15 / 0.09	16 / 0.09	16 / 0.09	17 / 0.09	17 / 0.09	19 / 0.09	20 / 0.08	21 / 0.08	22 / 0.08	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.11	7 / 0.1	10 / 0.09	12 / 0.09	15 / 0.09	18 / 0.09	19 / 0.09	20 / 0.08	20 / 0.08	21 / 0.08	23 / 0.08	23 / 0.08	25 / 0.07	26 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	65,100	35th	4 / 0.11	9 / 0.09	11 / 0.09	14 / 0.09	17 / 0.09	20 / 0.09	22 / 0.08	22 / 0.08	23 / 0.08	24 / 0.08	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	31 / 0.07	32 / 0.07	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.11	10 / 0.08	12 / 0.08	16 / 0.09	19 / 0.08	22 / 0.08	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.07	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.11	14 / 0.07	17 / 0.07	21 / 0.08	23 / 0.08	26 / 0.08	28 / 0.08	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.11	15 / 0.07	17 / 0.07	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	50 / 0.04
	101,500	55th	7 / 0.11	16 / 0.07	19 / 0.07	24 / 0.08	28 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.11	22 / 0.06	25 / 0.06	30 / 0.07	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.11	22 / 0.06	25 / 0.06	33 / 0.06	37 / 0.06	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.11	24 / 0.06	27 / 0.05	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.11	29 / 0.05	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.1	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05	80 / 0.05	80 / 0.05
	182,500	85th	10 / 0.1	40 / 0.05	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06	85 / 0.06
	214,800	90th	12 / 0.09	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.06	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 117. Percent Drought Prediction and MSE of Drought Scenario 12 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 12			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13
	15,300	5th	0 / 0.13	3 / 0.12	4 / 0.12	4 / 0.12	4 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12
	30,700	10th	3 / 0.12	5 / 0.12	6 / 0.11	6 / 0.11	7 / 0.11	8 / 0.11	8 / 0.12	8 / 0.12	9 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11
	40,400	15th	4 / 0.12	5 / 0.12	7 / 0.11	7 / 0.11	9 / 0.11	10 / 0.11	12 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	13 / 0.1	14 / 0.1	14 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1
	45,800	20th	4 / 0.12	6 / 0.11	7 / 0.11	9 / 0.11	11 / 0.1	13 / 0.11	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	17 / 0.1	17 / 0.1	18 / 0.1	19 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09
	52,900	25th	4 / 0.12	6 / 0.11	9 / 0.1	11 / 0.1	12 / 0.1	15 / 0.1	16 / 0.1	16 / 0.1	17 / 0.1	17 / 0.1	19 / 0.09	20 / 0.09	21 / 0.09	22 / 0.09	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.12	7 / 0.11	10 / 0.1	12 / 0.09	15 / 0.09	18 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	21 / 0.08	23 / 0.08	23 / 0.08	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.07	28 / 0.07	29 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	65,100	35th	4 / 0.12	9 / 0.09	11 / 0.09	14 / 0.09	17 / 0.09	20 / 0.09	22 / 0.09	22 / 0.09	23 / 0.08	24 / 0.08	26 / 0.08	27 / 0.08	28 / 0.07	29 / 0.07	31 / 0.07	32 / 0.07	33 / 0.07	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.12	10 / 0.09	12 / 0.09	16 / 0.09	19 / 0.09	22 / 0.09	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.12	14 / 0.08	17 / 0.07	21 / 0.08	23 / 0.08	26 / 0.08	28 / 0.08	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.12	15 / 0.08	17 / 0.07	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	50 / 0.04
	101,500	55th	7 / 0.11	16 / 0.07	19 / 0.07	24 / 0.08	28 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.11	22 / 0.07	25 / 0.06	30 / 0.07	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.11	22 / 0.06	25 / 0.06	33 / 0.06	37 / 0.06	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.11	24 / 0.06	27 / 0.06	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.11	29 / 0.05	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.05	74 / 0.05	75 / 0.05	75 / 0.05
	160,200	80th	10 / 0.1	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05	80 / 0.05	80 / 0.05
	182,500	85th	10 / 0.1	40 / 0.05	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06	85 / 0.06
	214,800	90th	12 / 0.1	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.06	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 118. Percent Drought Prediction and MSE of Drought Scenario 13 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 13			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14	0 / 0.14
	15,300	5th	0 / 0.14	3 / 0.13	4 / 0.13	4 / 0.13	4 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13
	30,700	10th	3 / 0.13	5 / 0.12	6 / 0.12	6 / 0.12	7 / 0.12	8 / 0.12	8 / 0.12	8 / 0.12	9 / 0.12	9 / 0.12	9 / 0.12	9 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12
	40,400	15th	4 / 0.13	5 / 0.12	7 / 0.12	7 / 0.12	9 / 0.11	10 / 0.11	12 / 0.11	12 / 0.11	12 / 0.11	12 / 0.11	13 / 0.11	14 / 0.11	14 / 0.11	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1
	45,800	20th	4 / 0.13	6 / 0.12	7 / 0.12	9 / 0.11	11 / 0.11	13 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	17 / 0.1	17 / 0.1	18 / 0.1	19 / 0.1	19 / 0.1	19 / 0.1	19 / 0.1	20 / 0.1	20 / 0.1	20 / 0.1	20 / 0.1	20 / 0.1
	52,900	25th	4 / 0.13	6 / 0.12	9 / 0.11	11 / 0.1	12 / 0.1	15 / 0.1	16 / 0.1	16 / 0.1	17 / 0.1	17 / 0.1	19 / 0.1	20 / 0.09	21 / 0.09	22 / 0.09	23 / 0.09	23 / 0.09	24 / 0.09	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.13	7 / 0.12	10 / 0.1	12 / 0.1	15 / 0.1	18 / 0.1	19 / 0.09	20 / 0.09	20 / 0.09	21 / 0.09	23 / 0.08	23 / 0.08	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	65,100	35th	4 / 0.13	9 / 0.1	11 / 0.1	14 / 0.1	17 / 0.09	20 / 0.09	22 / 0.09	22 / 0.09	23 / 0.08	24 / 0.08	26 / 0.08	27 / 0.08	28 / 0.07	29 / 0.07	31 / 0.07	32 / 0.07	33 / 0.07	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.13	10 / 0.1	12 / 0.09	16 / 0.09	19 / 0.09	22 / 0.09	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.13	14 / 0.08	17 / 0.08	21 / 0.09	23 / 0.08	26 / 0.08	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.13	15 / 0.08	17 / 0.08	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	50 / 0.04
	101,500	55th	7 / 0.12	16 / 0.08	19 / 0.08	24 / 0.08	28 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.05	38 / 0.05	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.04	52 / 0.04	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.12	22 / 0.07	25 / 0.07	30 / 0.07	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.12	22 / 0.07	25 / 0.07	33 / 0.06	37 / 0.06	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.04	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.12	24 / 0.06	27 / 0.06	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.04	51 / 0.04	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.12	29 / 0.06	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.05	74 / 0.05	75 / 0.05	75 / 0.05
	160,200	80th	10 / 0.11	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.06	80 / 0.06	80 / 0.06
	182,500	85th	10 / 0.11	40 / 0.05	49 / 0.04	56 / 0.04	65 / 0.04	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.07	85 / 0.07
	214,800	90th	12 / 0.11	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.07	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Mean Squared Error Results – Model Period E (1942-1960)

Table 119. Percent Drought Prediction and MSE of Drought Scenario 1 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 1			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	7,300	0th	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09
	18,100	5th	0 / 0.09	3 / 0.08	4 / 0.08	4 / 0.08	4 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08
	24,600	10th	3 / 0.08	5 / 0.09	6 / 0.09	6 / 0.09	7 / 0.08	8 / 0.08	8 / 0.08	8 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	9 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09
	28,600	15th	4 / 0.08	5 / 0.09	7 / 0.09	7 / 0.09	9 / 0.08	10 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	13 / 0.08	14 / 0.08	14 / 0.09	15 / 0.08	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09
	33,000	20th	4 / 0.08	6 / 0.09	7 / 0.09	9 / 0.09	11 / 0.09	13 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	17 / 0.08	17 / 0.08	18 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	20 / 0.08	20 / 0.09	20 / 0.09	20 / 0.09
	36,300	25th	4 / 0.08	6 / 0.09	9 / 0.08	11 / 0.09	12 / 0.09	15 / 0.08	16 / 0.08	16 / 0.08	17 / 0.08	17 / 0.08	19 / 0.08	20 / 0.08	21 / 0.08	22 / 0.08	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	39,700	30th	4 / 0.08	7 / 0.09	10 / 0.08	12 / 0.09	15 / 0.08	18 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	21 / 0.08	23 / 0.08	23 / 0.08	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.08	28 / 0.07	29 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	44,000	35th	4 / 0.08	9 / 0.08	11 / 0.08	14 / 0.08	17 / 0.08	20 / 0.08	22 / 0.08	22 / 0.08	23 / 0.08	24 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	31 / 0.07	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	48,500	40th	4 / 0.08	10 / 0.08	12 / 0.08	16 / 0.08	19 / 0.08	22 / 0.07	24 / 0.07	24 / 0.07	25 / 0.07	26 / 0.07	28 / 0.07	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06
	54,800	45th	4 / 0.08	14 / 0.08	17 / 0.08	21 / 0.08	23 / 0.08	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.07	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06
	58,200	50th	4 / 0.08	15 / 0.08	17 / 0.08	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.06	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05
	63,400	55th	7 / 0.1	16 / 0.09	19 / 0.09	24 / 0.08	28 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.06	42 / 0.06	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05
	67,800	60th	7 / 0.1	22 / 0.08	25 / 0.08	30 / 0.07	33 / 0.07	40 / 0.06	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	57 / 0.05	58 / 0.04	59 / 0.04	60 / 0.04
	72,200	65th	7 / 0.1	22 / 0.08	25 / 0.08	33 / 0.08	37 / 0.07	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.05	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04
	79,200	70th	7 / 0.1	24 / 0.08	27 / 0.07	34 / 0.07	40 / 0.06	45 / 0.06	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.05	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04
	85,500	75th	7 / 0.1	29 / 0.07	34 / 0.06	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.03
	96,200	80th	10 / 0.09	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.04	80 / 0.04
	107,800	85th	10 / 0.09	40 / 0.06	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06
	120,800	90th	12 / 0.08	47 / 0.05	56 / 0.06	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	171,000	95th	32 / 0.06	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	317,000	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 120. Percent Drought Prediction and MSE of Drought Scenario 3 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 3			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11
	15,300	5th	0 / 0.11	3 / 0.1	4 / 0.11	4 / 0.11	4 / 0.11	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1	5 / 0.1
	30,700	10th	3 / 0.1	5 / 0.11	6 / 0.11	6 / 0.11	7 / 0.1	8 / 0.1	8 / 0.1	8 / 0.1	9 / 0.1	9 / 0.1	9 / 0.1	9 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1
	40,400	15th	4 / 0.11	5 / 0.11	7 / 0.11	7 / 0.11	9 / 0.1	10 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	13 / 0.09	14 / 0.09	14 / 0.1	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09
	45,800	20th	4 / 0.11	6 / 0.11	7 / 0.11	9 / 0.1	11 / 0.1	13 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	17 / 0.09	17 / 0.09	18 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09
	52,900	25th	4 / 0.11	6 / 0.11	9 / 0.1	11 / 0.1	12 / 0.09	15 / 0.09	16 / 0.09	16 / 0.09	17 / 0.09	17 / 0.09	19 / 0.08	20 / 0.08	21 / 0.08	22 / 0.08	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.11	7 / 0.1	10 / 0.1	12 / 0.1	15 / 0.1	18 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	21 / 0.09	23 / 0.09	23 / 0.09	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08
	65,100	35th	4 / 0.11	9 / 0.1	11 / 0.1	14 / 0.09	17 / 0.09	20 / 0.09	22 / 0.09	22 / 0.09	23 / 0.09	24 / 0.09	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	31 / 0.08	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.11	10 / 0.1	12 / 0.1	16 / 0.09	19 / 0.09	22 / 0.08	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.08	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.07	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.11	14 / 0.1	17 / 0.1	21 / 0.09	23 / 0.09	26 / 0.08	28 / 0.08	29 / 0.08	29 / 0.08	30 / 0.08	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.07	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	45 / 0.06
	89,100	50th	4 / 0.11	15 / 0.1	17 / 0.1	23 / 0.09	24 / 0.09	29 / 0.08	32 / 0.08	33 / 0.07	35 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	39 / 0.06	41 / 0.06	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.13	16 / 0.11	19 / 0.1	24 / 0.09	28 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.06	42 / 0.06	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	55 / 0.05
	110,000	60th	7 / 0.13	22 / 0.1	25 / 0.09	30 / 0.08	33 / 0.07	40 / 0.06	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.05	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	57 / 0.05	58 / 0.05	59 / 0.05	60 / 0.05	60 / 0.05
	122,500	65th	7 / 0.13	22 / 0.1	25 / 0.09	33 / 0.07	37 / 0.07	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.05	58 / 0.05	61 / 0.05	62 / 0.05	63 / 0.05	64 / 0.05	65 / 0.05	65 / 0.05
	132,400	70th	7 / 0.13	24 / 0.09	27 / 0.09	34 / 0.07	40 / 0.06	45 / 0.06	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.05	-	-	65 / 0.05	66 / 0.05	68 / 0.05	69 / 0.05	70 / 0.05	70 / 0.05
	142,700	75th	7 / 0.13	29 / 0.08	34 / 0.07	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	-	73 / 0.05	74 / 0.05	75 / 0.05	75 / 0.05
	160,200	80th	10 / 0.13	34 / 0.08	40 / 0.06	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05	80 / 0.05	80 / 0.05
	182,500	85th	10 / 0.12	40 / 0.07	49 / 0.05	56 / 0.05	65 / 0.04	68 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06	85 / 0.06
	214,800	90th	12 / 0.11	47 / 0.06	56 / 0.05	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.07	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 121. Percent Drought Prediction and MSE of Drought Scenario 4 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 4			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1
	15,300	5th	0 / 0.1	3 / 0.09	4 / 0.09	4 / 0.09	4 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09
	30,700	10th	3 / 0.09	5 / 0.1	6 / 0.1	6 / 0.1	7 / 0.09	8 / 0.09	8 / 0.09	8 / 0.09	9 / 0.09	9 / 0.09	9 / 0.09	9 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1
	40,400	15th	4 / 0.09	5 / 0.1	7 / 0.1	7 / 0.1	9 / 0.09	10 / 0.1	12 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	13 / 0.09	14 / 0.09	14 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09
	45,800	20th	4 / 0.09	6 / 0.1	7 / 0.1	9 / 0.1	11 / 0.1	13 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	17 / 0.09	17 / 0.09	18 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09
	52,900	25th	4 / 0.09	6 / 0.1	9 / 0.09	11 / 0.1	12 / 0.09	15 / 0.09	16 / 0.09	16 / 0.09	17 / 0.09	17 / 0.09	19 / 0.08	20 / 0.09	21 / 0.09	22 / 0.09	23 / 0.09	23 / 0.09	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.09	7 / 0.09	10 / 0.09	12 / 0.1	15 / 0.1	18 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	21 / 0.09	23 / 0.09	23 / 0.09	25 / 0.09	26 / 0.08	26 / 0.09	27 / 0.08	28 / 0.08	29 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08
	65,100	35th	4 / 0.09	9 / 0.09	11 / 0.09	14 / 0.09	17 / 0.09	20 / 0.09	22 / 0.08	22 / 0.09	23 / 0.08	24 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	31 / 0.08	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.09	10 / 0.09	12 / 0.09	16 / 0.09	19 / 0.09	22 / 0.08	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.07	31 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.07	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.09	14 / 0.09	17 / 0.09	21 / 0.09	23 / 0.09	26 / 0.08	28 / 0.08	29 / 0.08	29 / 0.08	30 / 0.08	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	40 / 0.07	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06
	89,100	50th	4 / 0.09	15 / 0.09	17 / 0.09	23 / 0.09	24 / 0.09	29 / 0.08	32 / 0.08	33 / 0.07	35 / 0.08	35 / 0.08	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.07	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.12	16 / 0.1	19 / 0.1	24 / 0.09	28 / 0.09	33 / 0.08	35 / 0.07	36 / 0.07	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.07	42 / 0.07	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	55 / 0.05
	110,000	60th	7 / 0.12	22 / 0.09	25 / 0.08	30 / 0.08	33 / 0.08	40 / 0.07	42 / 0.07	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	57 / 0.05	58 / 0.05	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.12	22 / 0.09	25 / 0.08	33 / 0.08	37 / 0.08	42 / 0.07	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.12	24 / 0.09	27 / 0.08	34 / 0.08	40 / 0.07	45 / 0.06	48 / 0.06	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.12	29 / 0.08	34 / 0.07	41 / 0.07	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.05	75 / 0.05
	160,200	80th	10 / 0.1	34 / 0.06	40 / 0.06	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05	80 / 0.05	80 / 0.05
	182,500	85th	10 / 0.1	40 / 0.06	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06	85 / 0.06
	214,800	90th	12 / 0.09	47 / 0.05	56 / 0.06	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.06	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 122. Percent Drought Prediction and MSE of Drought Scenario 6 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 6			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15	0 / 0.15
	15,300	5th	0 / 0.15	3 / 0.14	4 / 0.14	4 / 0.14	4 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14	5 / 0.14
	30,700	10th	3 / 0.14	5 / 0.14	6 / 0.14	6 / 0.14	7 / 0.14	8 / 0.14	8 / 0.14	8 / 0.14	9 / 0.14	9 / 0.14	9 / 0.14	9 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13
	40,400	15th	4 / 0.14	5 / 0.15	7 / 0.14	7 / 0.14	9 / 0.14	10 / 0.14	12 / 0.13	12 / 0.13	12 / 0.13	12 / 0.13	13 / 0.13	14 / 0.13	14 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12
	45,800	20th	4 / 0.14	6 / 0.14	7 / 0.14	9 / 0.14	11 / 0.14	13 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	17 / 0.12	17 / 0.12	18 / 0.11	19 / 0.11	19 / 0.11	19 / 0.11	19 / 0.11	20 / 0.11	20 / 0.1	20 / 0.1	20 / 0.1
	52,900	25th	4 / 0.14	6 / 0.14	9 / 0.14	11 / 0.14	12 / 0.13	15 / 0.13	16 / 0.12	16 / 0.12	17 / 0.12	17 / 0.12	19 / 0.11	20 / 0.11	21 / 0.1	22 / 0.1	23 / 0.1	23 / 0.1	24 / 0.09	25 / 0.09	25 / 0.09	25 / 0.09	25 / 0.09
	59,900	30th	4 / 0.14	7 / 0.14	10 / 0.13	12 / 0.13	15 / 0.13	18 / 0.12	19 / 0.11	20 / 0.11	20 / 0.11	21 / 0.11	23 / 0.1	23 / 0.1	25 / 0.09	26 / 0.09	26 / 0.09	27 / 0.09	28 / 0.08	29 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08
	65,100	35th	4 / 0.14	9 / 0.13	11 / 0.13	14 / 0.13	17 / 0.12	20 / 0.11	22 / 0.1	22 / 0.1	23 / 0.1	24 / 0.1	26 / 0.09	27 / 0.09	28 / 0.09	29 / 0.08	31 / 0.08	32 / 0.08	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.14	10 / 0.13	12 / 0.13	16 / 0.12	19 / 0.11	22 / 0.11	24 / 0.1	24 / 0.1	25 / 0.1	26 / 0.09	28 / 0.09	30 / 0.08	31 / 0.08	33 / 0.08	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.07	39 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.14	14 / 0.12	17 / 0.12	21 / 0.11	23 / 0.11	26 / 0.1	28 / 0.09	29 / 0.09	29 / 0.09	30 / 0.09	32 / 0.08	33 / 0.08	36 / 0.07	37 / 0.07	39 / 0.07	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06
	89,100	50th	4 / 0.14	15 / 0.12	17 / 0.12	23 / 0.11	24 / 0.1	29 / 0.09	32 / 0.08	33 / 0.08	35 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.06	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05
	101,500	55th	7 / 0.15	16 / 0.13	19 / 0.12	24 / 0.11	28 / 0.1	33 / 0.09	35 / 0.08	36 / 0.08	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.06	42 / 0.06	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05
	110,000	60th	7 / 0.15	22 / 0.11	25 / 0.1	30 / 0.09	33 / 0.08	40 / 0.07	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.05	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	57 / 0.05	58 / 0.05	59 / 0.05	60 / 0.05
	122,500	65th	7 / 0.15	22 / 0.11	25 / 0.1	33 / 0.08	37 / 0.07	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.05	58 / 0.05	61 / 0.05	62 / 0.05	63 / 0.05	64 / 0.05	65 / 0.05
	132,400	70th	7 / 0.15	24 / 0.11	27 / 0.1	34 / 0.08	40 / 0.06	45 / 0.06	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.05	-	-	65 / 0.05	66 / 0.05	68 / 0.05	69 / 0.06	70 / 0.06
	142,700	75th	7 / 0.15	29 / 0.09	34 / 0.08	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	-	73 / 0.06	74 / 0.06	75 / 0.07
	160,200	80th	10 / 0.12	34 / 0.07	40 / 0.06	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.06	63 / 0.06	-	-	-	-	-	-	-	-	-	-	-	80 / 0.08	80 / 0.08
	182,500	85th	10 / 0.12	40 / 0.06	49 / 0.05	56 / 0.06	65 / 0.06	68 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.1
	214,800	90th	12 / 0.11	47 / 0.06	56 / 0.05	60 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.07	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 123. Percent Drought Prediction and MSE of Drought Scenario 7 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 7			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08
	15,300	5th	0 / 0.08	3 / 0.08	4 / 0.08	4 / 0.08	4 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08
	30,700	10th	3 / 0.08	5 / 0.08	6 / 0.08	6 / 0.08	7 / 0.08	8 / 0.08	8 / 0.08	8 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08
	40,400	15th	4 / 0.08	5 / 0.08	7 / 0.08	7 / 0.08	9 / 0.08	10 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	13 / 0.08	14 / 0.08	14 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08
	45,800	20th	4 / 0.08	6 / 0.08	7 / 0.08	9 / 0.09	11 / 0.08	13 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	17 / 0.08	17 / 0.08	18 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08
	52,900	25th	4 / 0.08	6 / 0.08	9 / 0.08	11 / 0.08	12 / 0.08	15 / 0.08	16 / 0.08	16 / 0.08	17 / 0.07	17 / 0.08	19 / 0.07	20 / 0.08	21 / 0.08	22 / 0.08	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.08	7 / 0.08	10 / 0.08	12 / 0.08	15 / 0.09	18 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	21 / 0.08	23 / 0.08	23 / 0.08	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	30 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	65,100	35th	4 / 0.08	9 / 0.08	11 / 0.08	14 / 0.08	17 / 0.08	20 / 0.08	22 / 0.08	22 / 0.08	23 / 0.08	24 / 0.08	26 / 0.07	27 / 0.07	28 / 0.08	29 / 0.08	31 / 0.07	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.08	10 / 0.08	12 / 0.07	16 / 0.08	19 / 0.08	22 / 0.07	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.07	28 / 0.07	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.08	14 / 0.08	17 / 0.08	21 / 0.08	23 / 0.08	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06
	89,100	50th	4 / 0.08	15 / 0.08	17 / 0.08	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.07	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.1	16 / 0.09	19 / 0.09	24 / 0.09	28 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.07	42 / 0.07	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	55 / 0.05
	110,000	60th	7 / 0.1	22 / 0.08	25 / 0.08	30 / 0.08	33 / 0.07	40 / 0.07	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.1	22 / 0.08	25 / 0.08	33 / 0.08	37 / 0.07	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.1	24 / 0.08	27 / 0.07	34 / 0.08	40 / 0.07	45 / 0.06	48 / 0.06	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.1	29 / 0.07	34 / 0.06	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.07	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.04	80 / 0.04	80 / 0.04
	182,500	85th	10 / 0.07	40 / 0.05	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.05	85 / 0.05
	214,800	90th	12 / 0.06	47 / 0.05	56 / 0.06	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.05	56 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 124. Percent Drought Prediction and MSE of Drought Scenario 8 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 8			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08
	15,300	5th	0 / 0.08	3 / 0.08	4 / 0.08	4 / 0.08	4 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08
	30,700	10th	3 / 0.08	5 / 0.08	6 / 0.08	6 / 0.08	7 / 0.08	8 / 0.08	8 / 0.08	8 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08
	40,400	15th	4 / 0.08	5 / 0.08	7 / 0.08	7 / 0.08	9 / 0.08	10 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	13 / 0.08	14 / 0.08	14 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08
	45,800	20th	4 / 0.08	6 / 0.08	7 / 0.08	9 / 0.09	11 / 0.08	13 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	17 / 0.08	17 / 0.08	18 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08
	52,900	25th	4 / 0.08	6 / 0.08	9 / 0.08	11 / 0.08	12 / 0.08	15 / 0.08	16 / 0.08	16 / 0.08	17 / 0.07	17 / 0.08	19 / 0.07	20 / 0.08	21 / 0.08	22 / 0.08	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.08	7 / 0.08	10 / 0.08	12 / 0.08	15 / 0.09	18 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	21 / 0.08	23 / 0.08	23 / 0.08	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	30 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	65,100	35th	4 / 0.08	9 / 0.08	11 / 0.08	14 / 0.08	17 / 0.08	20 / 0.08	22 / 0.08	22 / 0.08	23 / 0.08	24 / 0.08	26 / 0.07	27 / 0.07	28 / 0.08	29 / 0.08	31 / 0.07	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.08	10 / 0.08	12 / 0.07	16 / 0.08	19 / 0.08	22 / 0.07	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.07	28 / 0.07	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.08	14 / 0.08	17 / 0.08	21 / 0.08	23 / 0.08	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06
	89,100	50th	4 / 0.08	15 / 0.08	17 / 0.08	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.07	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.1	16 / 0.09	19 / 0.09	24 / 0.09	28 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.07	42 / 0.07	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	55 / 0.05
	110,000	60th	7 / 0.1	22 / 0.08	25 / 0.08	30 / 0.08	33 / 0.07	40 / 0.07	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.1	22 / 0.08	25 / 0.08	33 / 0.08	37 / 0.07	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	64 / 0.04	65 / 0.04
	132,400	70th	7 / 0.1	24 / 0.08	27 / 0.07	34 / 0.08	40 / 0.07	45 / 0.06	48 / 0.06	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.1	29 / 0.07	34 / 0.06	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.07	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.04	80 / 0.04	80 / 0.04
	182,500	85th	10 / 0.07	40 / 0.05	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.05	85 / 0.05
	214,800	90th	12 / 0.06	47 / 0.05	56 / 0.06	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.05	56 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 125. Percent Drought Prediction and MSE of Drought Scenario 9 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 9			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09
	15,300	5th	0 / 0.09	3 / 0.08	4 / 0.08	4 / 0.08	4 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08
	30,700	10th	3 / 0.08	5 / 0.08	6 / 0.08	6 / 0.08	7 / 0.08	8 / 0.08	8 / 0.08	8 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08
	40,400	15th	4 / 0.08	5 / 0.09	7 / 0.08	7 / 0.08	9 / 0.08	10 / 0.09	12 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	13 / 0.08	14 / 0.08	14 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08
	45,800	20th	4 / 0.08	6 / 0.08	7 / 0.08	9 / 0.09	11 / 0.09	13 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	17 / 0.08	17 / 0.08	18 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08
	52,900	25th	4 / 0.08	6 / 0.08	9 / 0.08	11 / 0.09	12 / 0.08	15 / 0.08	16 / 0.08	16 / 0.08	17 / 0.08	17 / 0.08	19 / 0.08	20 / 0.08	21 / 0.08	22 / 0.08	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.08	7 / 0.08	10 / 0.08	12 / 0.09	15 / 0.09	18 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	21 / 0.08	23 / 0.08	23 / 0.08	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08
	65,100	35th	4 / 0.08	9 / 0.08	11 / 0.08	14 / 0.08	17 / 0.08	20 / 0.08	22 / 0.08	22 / 0.08	23 / 0.08	24 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	31 / 0.07	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.08	10 / 0.08	12 / 0.08	16 / 0.08	19 / 0.08	22 / 0.08	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.07	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.07	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.08	14 / 0.08	17 / 0.08	21 / 0.08	23 / 0.08	26 / 0.08	28 / 0.08	29 / 0.08	29 / 0.08	30 / 0.08	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	40 / 0.07	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	45 / 0.06
	89,100	50th	4 / 0.08	15 / 0.08	17 / 0.08	23 / 0.08	24 / 0.08	29 / 0.08	32 / 0.07	33 / 0.07	35 / 0.07	35 / 0.08	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.07	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.11	16 / 0.09	19 / 0.09	24 / 0.09	28 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.07	42 / 0.07	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	55 / 0.05
	110,000	60th	7 / 0.11	22 / 0.08	25 / 0.08	30 / 0.08	33 / 0.07	40 / 0.07	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.11	22 / 0.08	25 / 0.08	33 / 0.08	37 / 0.07	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.04	58 / 0.05	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.11	24 / 0.08	27 / 0.08	34 / 0.08	40 / 0.07	45 / 0.06	48 / 0.06	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.11	29 / 0.07	34 / 0.06	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.08	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05	80 / 0.05	80 / 0.05
	182,500	85th	10 / 0.08	40 / 0.05	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.05	85 / 0.05
	214,800	90th	12 / 0.06	47 / 0.05	56 / 0.06	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.05	56 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 126. Percent Drought Prediction and MSE of Drought Scenario 10 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 10			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09
	15,300	5th	0 / 0.09	3 / 0.08	4 / 0.08	4 / 0.08	4 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08
	30,700	10th	3 / 0.08	5 / 0.09	6 / 0.09	6 / 0.09	7 / 0.08	8 / 0.08	8 / 0.08	8 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	9 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09
	40,400	15th	4 / 0.08	5 / 0.09	7 / 0.09	7 / 0.09	9 / 0.08	10 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	13 / 0.08	14 / 0.08	14 / 0.09	15 / 0.08	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09
	45,800	20th	4 / 0.08	6 / 0.09	7 / 0.09	9 / 0.09	11 / 0.09	13 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	17 / 0.08	17 / 0.08	18 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08
	52,900	25th	4 / 0.08	6 / 0.09	9 / 0.08	11 / 0.09	12 / 0.09	15 / 0.08	16 / 0.08	16 / 0.08	17 / 0.08	17 / 0.08	19 / 0.08	20 / 0.08	21 / 0.08	22 / 0.08	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.08	7 / 0.09	10 / 0.08	12 / 0.09	15 / 0.09	18 / 0.08	19 / 0.09	20 / 0.08	20 / 0.08	21 / 0.08	23 / 0.08	23 / 0.08	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08
	65,100	35th	4 / 0.08	9 / 0.08	11 / 0.08	14 / 0.08	17 / 0.09	20 / 0.08	22 / 0.08	22 / 0.08	23 / 0.08	24 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	31 / 0.08	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.08	10 / 0.08	12 / 0.08	16 / 0.08	19 / 0.08	22 / 0.08	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.07	39 / 0.07	40 / 0.06	40 / 0.06	
	79,100	45th	4 / 0.08	14 / 0.09	17 / 0.08	21 / 0.08	23 / 0.08	26 / 0.08	28 / 0.08	29 / 0.08	29 / 0.08	30 / 0.08	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	40 / 0.07	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	
	89,100	50th	4 / 0.08	15 / 0.09	17 / 0.08	23 / 0.09	24 / 0.08	29 / 0.08	32 / 0.08	33 / 0.07	35 / 0.08	35 / 0.08	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.07	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	
	101,500	55th	7 / 0.11	16 / 0.09	19 / 0.09	24 / 0.09	28 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.07	42 / 0.07	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	
	110,000	60th	7 / 0.11	22 / 0.08	25 / 0.08	30 / 0.08	33 / 0.07	40 / 0.07	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	57 / 0.05	58 / 0.04	59 / 0.04	60 / 0.04	
	122,500	65th	7 / 0.11	22 / 0.08	25 / 0.08	33 / 0.08	37 / 0.07	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.04	58 / 0.05	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	
	132,400	70th	7 / 0.11	24 / 0.08	27 / 0.08	34 / 0.08	40 / 0.06	45 / 0.06	48 / 0.06	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	
	142,700	75th	7 / 0.11	29 / 0.07	34 / 0.07	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	
	160,200	80th	10 / 0.08	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05	80 / 0.05	
	182,500	85th	10 / 0.08	40 / 0.05	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06	
	214,800	90th	12 / 0.07	47 / 0.05	56 / 0.06	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.05	56 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 127. Percent Drought Prediction and MSE of Drought Scenario 11 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 11			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1	0 / 0.1
	15,300	5th	0 / 0.1	3 / 0.09	4 / 0.1	4 / 0.1	4 / 0.1	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09
	30,700	10th	3 / 0.09	5 / 0.1	6 / 0.1	6 / 0.1	7 / 0.09	8 / 0.09	8 / 0.09	8 / 0.09	9 / 0.09	9 / 0.09	9 / 0.09	9 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1
	40,400	15th	4 / 0.1	5 / 0.1	7 / 0.1	7 / 0.1	9 / 0.09	10 / 0.1	12 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	13 / 0.09	14 / 0.09	14 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09
	45,800	20th	4 / 0.1	6 / 0.1	7 / 0.1	9 / 0.1	11 / 0.1	13 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	17 / 0.09	17 / 0.09	18 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09
	52,900	25th	4 / 0.1	6 / 0.1	9 / 0.09	11 / 0.1	12 / 0.1	15 / 0.09	16 / 0.09	16 / 0.09	17 / 0.09	17 / 0.09	19 / 0.09	20 / 0.09	21 / 0.09	22 / 0.09	23 / 0.09	23 / 0.09	24 / 0.09	25 / 0.08	25 / 0.09	25 / 0.09	25 / 0.09	25 / 0.09
	59,900	30th	4 / 0.1	7 / 0.1	10 / 0.09	12 / 0.1	15 / 0.1	18 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	21 / 0.09	23 / 0.09	23 / 0.09	25 / 0.09	26 / 0.09	26 / 0.09	27 / 0.09	28 / 0.08	29 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08
	65,100	35th	4 / 0.1	9 / 0.09	11 / 0.09	14 / 0.09	17 / 0.09	20 / 0.09	22 / 0.09	22 / 0.09	23 / 0.09	24 / 0.09	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	31 / 0.08	32 / 0.08	33 / 0.08	34 / 0.08	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.1	10 / 0.09	12 / 0.09	16 / 0.09	19 / 0.09	22 / 0.09	24 / 0.09	24 / 0.09	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.08	31 / 0.08	33 / 0.08	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.07	39 / 0.07	40 / 0.07	40 / 0.07	40 / 0.07
	79,100	45th	4 / 0.1	14 / 0.09	17 / 0.09	21 / 0.09	23 / 0.09	26 / 0.08	28 / 0.08	29 / 0.08	29 / 0.08	30 / 0.08	32 / 0.08	33 / 0.08	36 / 0.07	37 / 0.07	39 / 0.07	40 / 0.07	41 / 0.07	43 / 0.06	44 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06
	89,100	50th	4 / 0.1	15 / 0.09	17 / 0.09	23 / 0.09	24 / 0.08	29 / 0.08	32 / 0.08	33 / 0.07	35 / 0.08	35 / 0.08	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.07	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.06	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.11	16 / 0.1	19 / 0.09	24 / 0.09	28 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.07	42 / 0.06	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	55 / 0.05
	110,000	60th	7 / 0.11	22 / 0.09	25 / 0.08	30 / 0.08	33 / 0.07	40 / 0.07	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.06	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	57 / 0.05	58 / 0.05	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.11	22 / 0.09	25 / 0.08	33 / 0.08	37 / 0.07	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.05	58 / 0.05	61 / 0.05	62 / 0.04	63 / 0.04	64 / 0.04	64 / 0.04	65 / 0.04
	132,400	70th	7 / 0.11	24 / 0.08	27 / 0.08	34 / 0.07	40 / 0.06	45 / 0.06	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.05	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.11	29 / 0.07	34 / 0.07	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.08	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05	80 / 0.05	80 / 0.05
	182,500	85th	10 / 0.08	40 / 0.06	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06	85 / 0.06
	214,800	90th	12 / 0.07	47 / 0.05	56 / 0.05	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.05	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 128. Percent Drought Prediction and MSE of Drought Scenario 12 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 12			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12
	15,300	5th	0 / 0.12	3 / 0.11	4 / 0.11	4 / 0.11	4 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11
	30,700	10th	3 / 0.11	5 / 0.11	6 / 0.11	6 / 0.11	7 / 0.11	8 / 0.11	8 / 0.11	8 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11
	40,400	15th	4 / 0.11	5 / 0.11	7 / 0.11	7 / 0.11	9 / 0.11	10 / 0.11	12 / 0.11	12 / 0.11	12 / 0.11	12 / 0.11	13 / 0.1	14 / 0.1	14 / 0.11	15 / 0.1	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11
	45,800	20th	4 / 0.11	6 / 0.11	7 / 0.11	9 / 0.11	11 / 0.11	13 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	17 / 0.1	17 / 0.1	18 / 0.1	19 / 0.1	19 / 0.1	19 / 0.1	19 / 0.1	20 / 0.1	20 / 0.1	20 / 0.1	20 / 0.1	20 / 0.1
	52,900	25th	4 / 0.11	6 / 0.11	9 / 0.11	11 / 0.11	12 / 0.11	15 / 0.1	16 / 0.1	16 / 0.1	17 / 0.1	17 / 0.1	19 / 0.09	20 / 0.1	21 / 0.1	22 / 0.1	23 / 0.1	23 / 0.1	24 / 0.09	25 / 0.09	25 / 0.09	25 / 0.09	25 / 0.09
	59,900	30th	4 / 0.11	7 / 0.11	10 / 0.1	12 / 0.11	15 / 0.1	18 / 0.1	19 / 0.1	20 / 0.1	20 / 0.1	21 / 0.1	23 / 0.09	23 / 0.09	25 / 0.09	26 / 0.09	26 / 0.09	27 / 0.09	28 / 0.09	29 / 0.09	30 / 0.09	30 / 0.09	30 / 0.09
	65,100	35th	4 / 0.11	9 / 0.1	11 / 0.1	14 / 0.1	17 / 0.1	20 / 0.09	22 / 0.09	22 / 0.09	23 / 0.09	24 / 0.09	26 / 0.09	27 / 0.09	28 / 0.09	29 / 0.08	31 / 0.08	32 / 0.08	33 / 0.08	34 / 0.08	35 / 0.08	35 / 0.08	35 / 0.08
	70,700	40th	4 / 0.11	10 / 0.1	12 / 0.1	16 / 0.1	19 / 0.09	22 / 0.09	24 / 0.09	24 / 0.09	25 / 0.09	26 / 0.09	28 / 0.08	30 / 0.08	31 / 0.08	33 / 0.08	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.07	39 / 0.07	40 / 0.07	40 / 0.07
	79,100	45th	4 / 0.11	14 / 0.09	17 / 0.09	21 / 0.09	23 / 0.08	26 / 0.08	28 / 0.08	29 / 0.07	29 / 0.08	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06
	89,100	50th	4 / 0.11	15 / 0.09	17 / 0.09	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.06	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.05	49 / 0.05	50 / 0.05
	101,500	55th	7 / 0.11	16 / 0.09	19 / 0.09	24 / 0.08	28 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	38 / 0.07	38 / 0.07	39 / 0.07	41 / 0.06	42 / 0.06	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05
	110,000	60th	7 / 0.11	22 / 0.08	25 / 0.08	30 / 0.07	33 / 0.07	40 / 0.06	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.05	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	57 / 0.05	58 / 0.05	59 / 0.05	60 / 0.05
	122,500	65th	7 / 0.11	22 / 0.08	25 / 0.08	33 / 0.07	37 / 0.07	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.05	58 / 0.05	61 / 0.05	62 / 0.05	63 / 0.05	64 / 0.05	65 / 0.05
	132,400	70th	7 / 0.11	24 / 0.08	27 / 0.08	34 / 0.07	40 / 0.06	45 / 0.06	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.05	-	-	65 / 0.05	66 / 0.05	68 / 0.05	69 / 0.05	70 / 0.05
	142,700	75th	7 / 0.11	29 / 0.07	34 / 0.07	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	-	73 / 0.05	74 / 0.05	75 / 0.05
	160,200	80th	10 / 0.08	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.06	80 / 0.06
	182,500	85th	10 / 0.08	40 / 0.05	49 / 0.05	56 / 0.05	65 / 0.06	68 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.07
	214,800	90th	12 / 0.07	47 / 0.05	56 / 0.06	60 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.05	56 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 129. Percent Drought Prediction and MSE of Drought Scenario 13 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 13			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12
	15,300	5th	0 / 0.12	3 / 0.12	4 / 0.12	4 / 0.12	4 / 0.12	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11
	30,700	10th	3 / 0.12	5 / 0.12	6 / 0.12	6 / 0.12	7 / 0.11	8 / 0.11	8 / 0.11	8 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11
	40,400	15th	4 / 0.12	5 / 0.12	7 / 0.12	7 / 0.12	9 / 0.11	10 / 0.12	12 / 0.11	12 / 0.11	12 / 0.11	12 / 0.11	13 / 0.11	14 / 0.11	14 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11
	45,800	20th	4 / 0.12	6 / 0.12	7 / 0.12	9 / 0.12	11 / 0.11	13 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	17 / 0.1	17 / 0.1	18 / 0.11	19 / 0.11	19 / 0.11	19 / 0.11	19 / 0.11	20 / 0.1	20 / 0.1	20 / 0.1	20 / 0.1	
	52,900	25th	4 / 0.12	6 / 0.12	9 / 0.11	11 / 0.11	12 / 0.11	15 / 0.11	16 / 0.1	16 / 0.1	17 / 0.1	17 / 0.1	19 / 0.1	20 / 0.1	21 / 0.1	22 / 0.1	23 / 0.1	23 / 0.1	24 / 0.1	25 / 0.1	25 / 0.1	25 / 0.1	25 / 0.1	
	59,900	30th	4 / 0.12	7 / 0.11	10 / 0.11	12 / 0.11	15 / 0.11	18 / 0.1	19 / 0.1	20 / 0.1	20 / 0.1	21 / 0.1	23 / 0.09	23 / 0.09	25 / 0.09	26 / 0.09	26 / 0.09	27 / 0.09	28 / 0.09	29 / 0.09	30 / 0.08	30 / 0.08	30 / 0.08	
	65,100	35th	4 / 0.12	9 / 0.11	11 / 0.11	14 / 0.11	17 / 0.1	20 / 0.1	22 / 0.09	22 / 0.09	23 / 0.09	24 / 0.09	26 / 0.09	27 / 0.08	28 / 0.09	29 / 0.08	31 / 0.08	32 / 0.08	33 / 0.08	34 / 0.08	35 / 0.07	35 / 0.07	35 / 0.07	
	70,700	40th	4 / 0.12	10 / 0.11	12 / 0.1	16 / 0.1	19 / 0.1	22 / 0.09	24 / 0.09	24 / 0.09	25 / 0.09	26 / 0.09	28 / 0.08	30 / 0.08	31 / 0.08	33 / 0.08	35 / 0.07	36 / 0.07	37 / 0.07	38 / 0.07	39 / 0.07	40 / 0.07	40 / 0.07	
	79,100	45th	4 / 0.12	14 / 0.1	17 / 0.09	21 / 0.09	23 / 0.09	26 / 0.08	28 / 0.08	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	
	89,100	50th	4 / 0.12	15 / 0.1	17 / 0.09	23 / 0.09	24 / 0.08	29 / 0.08	32 / 0.07	33 / 0.07	35 / 0.07	35 / 0.07	36 / 0.07	37 / 0.07	39 / 0.07	41 / 0.06	43 / 0.06	44 / 0.06	45 / 0.06	47 / 0.06	48 / 0.05	49 / 0.05	50 / 0.05	
	101,500	55th	7 / 0.11	16 / 0.1	19 / 0.09	24 / 0.08	28 / 0.08	33 / 0.07	35 / 0.07	36 / 0.06	38 / 0.07	38 / 0.07	39 / 0.06	41 / 0.06	42 / 0.06	44 / 0.06	47 / 0.06	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	
	110,000	60th	7 / 0.11	22 / 0.08	25 / 0.08	30 / 0.07	33 / 0.07	40 / 0.06	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.06	46 / 0.06	47 / 0.06	48 / 0.05	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	57 / 0.05	58 / 0.05	59 / 0.05	60 / 0.05	
	122,500	65th	7 / 0.11	22 / 0.08	25 / 0.08	33 / 0.07	37 / 0.06	42 / 0.06	45 / 0.06	46 / 0.06	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.05	58 / 0.05	61 / 0.05	62 / 0.05	63 / 0.05	64 / 0.05	65 / 0.05	
	132,400	70th	7 / 0.11	24 / 0.08	27 / 0.08	34 / 0.07	40 / 0.06	45 / 0.06	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.05	-	-	65 / 0.05	66 / 0.05	68 / 0.05	69 / 0.05	70 / 0.05	
	142,700	75th	7 / 0.11	29 / 0.07	34 / 0.07	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	-	73 / 0.05	74 / 0.05	75 / 0.05	
	160,200	80th	10 / 0.08	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.06	-	-	-	-	-	-	-	-	-	-	-	80 / 0.07	80 / 0.07	
	182,500	85th	10 / 0.08	40 / 0.05	49 / 0.05	56 / 0.05	65 / 0.06	68 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.08	
	214,800	90th	12 / 0.07	47 / 0.05	56 / 0.06	60 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.05	56 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Mean Squared Error Results – Model Period F (1960-1987)

Table 130. Percent Drought Prediction and MSE of Drought Scenario 1 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 1			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	7,300	0th	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12
	18,100	5th	0 / 0.12	3 / 0.12	4 / 0.12	4 / 0.12	4 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12
	24,600	10th	3 / 0.12	5 / 0.12	6 / 0.12	6 / 0.11	7 / 0.12	8 / 0.11	8 / 0.12	8 / 0.12	9 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	10 / 0.11	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12
	28,600	15th	4 / 0.11	5 / 0.12	7 / 0.12	7 / 0.12	9 / 0.12	10 / 0.12	12 / 0.11	12 / 0.12	12 / 0.12	12 / 0.12	13 / 0.12	14 / 0.12	14 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12
	33,000	20th	4 / 0.11	6 / 0.12	7 / 0.12	9 / 0.12	11 / 0.12	13 / 0.13	15 / 0.12	15 / 0.13	15 / 0.13	15 / 0.13	17 / 0.12	17 / 0.12	18 / 0.12	19 / 0.12	19 / 0.12	19 / 0.13	19 / 0.13	20 / 0.12	20 / 0.12	20 / 0.12	20 / 0.12
	36,300	25th	4 / 0.11	6 / 0.12	9 / 0.12	11 / 0.12	12 / 0.12	15 / 0.13	16 / 0.13	16 / 0.13	17 / 0.12	17 / 0.13	19 / 0.13	20 / 0.13	21 / 0.12	22 / 0.12	23 / 0.12	23 / 0.12	24 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12
	39,700	30th	4 / 0.11	7 / 0.12	10 / 0.12	12 / 0.12	15 / 0.12	18 / 0.12	19 / 0.12	20 / 0.12	20 / 0.12	21 / 0.12	23 / 0.12	23 / 0.12	25 / 0.11	26 / 0.11	26 / 0.11	27 / 0.12	28 / 0.12	29 / 0.11	30 / 0.11	30 / 0.11	30 / 0.11
	44,000	35th	4 / 0.11	9 / 0.12	11 / 0.12	14 / 0.11	17 / 0.11	20 / 0.11	22 / 0.11	22 / 0.11	23 / 0.11	24 / 0.11	26 / 0.11	27 / 0.11	28 / 0.11	29 / 0.11	31 / 0.11	32 / 0.11	33 / 0.1	34 / 0.1	35 / 0.1	35 / 0.1	35 / 0.1
	48,500	40th	4 / 0.11	10 / 0.12	12 / 0.11	16 / 0.11	19 / 0.11	22 / 0.11	24 / 0.11	24 / 0.11	25 / 0.11	26 / 0.11	28 / 0.11	30 / 0.1	31 / 0.1	33 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	38 / 0.1	39 / 0.1	40 / 0.09	40 / 0.09
	54,800	45th	4 / 0.11	14 / 0.11	17 / 0.1	21 / 0.1	23 / 0.1	26 / 0.1	28 / 0.1	29 / 0.1	29 / 0.1	30 / 0.1	32 / 0.1	33 / 0.1	36 / 0.09	37 / 0.09	39 / 0.09	40 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09
	58,200	50th	4 / 0.11	15 / 0.1	17 / 0.1	23 / 0.09	24 / 0.1	29 / 0.1	32 / 0.1	33 / 0.1	35 / 0.09	35 / 0.1	36 / 0.09	37 / 0.09	39 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	45 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08
	63,400	55th	7 / 0.11	16 / 0.1	19 / 0.1	24 / 0.09	28 / 0.1	33 / 0.1	35 / 0.09	36 / 0.09	38 / 0.09	38 / 0.09	39 / 0.09	41 / 0.09	42 / 0.09	44 / 0.08	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.07	54 / 0.07	55 / 0.07
	67,800	60th	7 / 0.11	22 / 0.09	25 / 0.09	30 / 0.08	33 / 0.09	40 / 0.09	42 / 0.09	44 / 0.08	44 / 0.08	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.06	60 / 0.06
	72,200	65th	7 / 0.11	22 / 0.09	25 / 0.09	33 / 0.08	37 / 0.09	42 / 0.08	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.07	57 / 0.07	58 / 0.07	61 / 0.06	62 / 0.06	63 / 0.06	64 / 0.06	65 / 0.06
	79,200	70th	7 / 0.11	24 / 0.09	27 / 0.09	34 / 0.08	40 / 0.08	45 / 0.08	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.08	53 / 0.08	54 / 0.08	56 / 0.07	59 / 0.07	-	-	65 / 0.06	66 / 0.06	68 / 0.06	69 / 0.06	70 / 0.06
	85,500	75th	7 / 0.11	29 / 0.1	34 / 0.09	41 / 0.09	49 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	58 / 0.07	58 / 0.07	-	-	-	-	-	-	-	-	73 / 0.06	74 / 0.06	75 / 0.06
	96,200	80th	10 / 0.1	34 / 0.1	40 / 0.09	48 / 0.08	55 / 0.07	59 / 0.07	60 / 0.07	63 / 0.06	-	-	-	-	-	-	-	-	-	-	-	80 / 0.06	80 / 0.06
	107,800	85th	10 / 0.1	40 / 0.09	49 / 0.08	56 / 0.07	65 / 0.06	68 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.07
	120,800	90th	12 / 0.09	47 / 0.08	56 / 0.08	60 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	171,000	95th	32 / 0.09	56 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	317,000	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 131. Percent Drought Prediction and MSE of Drought Scenario 3 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 3			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13
	15,300	5th	0 / 0.13	3 / 0.13	4 / 0.13	4 / 0.13	4 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13
	30,700	10th	3 / 0.13	5 / 0.13	6 / 0.13	6 / 0.13	7 / 0.13	8 / 0.13	8 / 0.13	8 / 0.13	9 / 0.13	9 / 0.13	9 / 0.13	9 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13
	40,400	15th	4 / 0.12	5 / 0.13	7 / 0.13	7 / 0.13	9 / 0.13	10 / 0.13	12 / 0.13	12 / 0.13	12 / 0.13	12 / 0.13	13 / 0.13	14 / 0.13	14 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13
	45,800	20th	4 / 0.12	6 / 0.13	7 / 0.13	9 / 0.13	11 / 0.13	13 / 0.14	15 / 0.14	15 / 0.14	15 / 0.14	15 / 0.14	17 / 0.13	17 / 0.13	18 / 0.13	19 / 0.13	19 / 0.13	19 / 0.13	19 / 0.13	20 / 0.13	20 / 0.13	20 / 0.13	20 / 0.13	20 / 0.13
	52,900	25th	4 / 0.12	6 / 0.14	9 / 0.13	11 / 0.13	12 / 0.14	15 / 0.14	16 / 0.14	16 / 0.14	17 / 0.14	17 / 0.14	19 / 0.14	20 / 0.13	21 / 0.13	22 / 0.13	23 / 0.12	23 / 0.13	24 / 0.13	25 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12
	59,900	30th	4 / 0.12	7 / 0.13	10 / 0.14	12 / 0.14	15 / 0.13	18 / 0.14	19 / 0.13	20 / 0.13	20 / 0.13	21 / 0.13	23 / 0.13	23 / 0.13	25 / 0.12	26 / 0.12	26 / 0.12	27 / 0.12	28 / 0.12	29 / 0.12	30 / 0.12	30 / 0.12	30 / 0.12	30 / 0.12
	65,100	35th	4 / 0.12	9 / 0.12	11 / 0.13	14 / 0.13	17 / 0.13	20 / 0.13	22 / 0.12	22 / 0.13	23 / 0.12	24 / 0.12	26 / 0.12	27 / 0.12	28 / 0.11	29 / 0.11	31 / 0.11	32 / 0.11	33 / 0.11	34 / 0.11	35 / 0.11	35 / 0.11	35 / 0.11	35 / 0.11
	70,700	40th	4 / 0.12	10 / 0.12	12 / 0.12	16 / 0.12	19 / 0.12	22 / 0.12	24 / 0.12	24 / 0.12	25 / 0.12	26 / 0.11	28 / 0.11	30 / 0.11	31 / 0.11	33 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	38 / 0.1	39 / 0.1	40 / 0.09	40 / 0.09	40 / 0.09
	79,100	45th	4 / 0.12	14 / 0.11	17 / 0.11	21 / 0.11	23 / 0.11	26 / 0.11	28 / 0.11	29 / 0.11	29 / 0.11	30 / 0.1	32 / 0.1	33 / 0.1	36 / 0.1	37 / 0.09	39 / 0.09	40 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	45 / 0.09
	89,100	50th	4 / 0.12	15 / 0.11	17 / 0.11	23 / 0.1	24 / 0.11	29 / 0.11	32 / 0.11	33 / 0.1	35 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	39 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	45 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	50 / 0.08
	101,500	55th	7 / 0.12	16 / 0.1	19 / 0.11	24 / 0.1	28 / 0.11	33 / 0.1	35 / 0.1	36 / 0.1	38 / 0.09	38 / 0.09	39 / 0.09	41 / 0.09	42 / 0.09	44 / 0.08	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.08	54 / 0.07	55 / 0.07	55 / 0.07
	110,000	60th	7 / 0.12	22 / 0.11	25 / 0.11	30 / 0.1	33 / 0.1	40 / 0.09	42 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.07	60 / 0.07	60 / 0.07
	122,500	65th	7 / 0.12	22 / 0.11	25 / 0.11	33 / 0.1	37 / 0.1	42 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.07	57 / 0.07	58 / 0.07	61 / 0.06	62 / 0.06	63 / 0.06	64 / 0.06	65 / 0.06	65 / 0.06
	132,400	70th	7 / 0.12	24 / 0.11	27 / 0.11	34 / 0.1	40 / 0.09	45 / 0.09	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.07	53 / 0.07	54 / 0.07	56 / 0.07	59 / 0.07	-	-	65 / 0.06	66 / 0.06	68 / 0.06	69 / 0.06	70 / 0.06	70 / 0.06
	142,700	75th	7 / 0.12	29 / 0.11	34 / 0.12	41 / 0.1	49 / 0.08	53 / 0.07	54 / 0.07	56 / 0.06	58 / 0.06	58 / 0.06	-	-	-	-	-	-	-	-	73 / 0.06	74 / 0.06	75 / 0.06	75 / 0.06
	160,200	80th	10 / 0.11	34 / 0.1	40 / 0.1	48 / 0.08	55 / 0.07	59 / 0.06	60 / 0.06	63 / 0.06	-	-	-	-	-	-	-	-	-	-	-	80 / 0.07	80 / 0.07	80 / 0.07
	182,500	85th	10 / 0.11	40 / 0.09	49 / 0.08	56 / 0.07	65 / 0.06	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.07	85 / 0.07
	214,800	90th	12 / 0.09	47 / 0.08	56 / 0.07	60 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.09	56 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 132. Percent Drought Prediction and MSE of Drought Scenario 4 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 4			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09
	15,300	5th	0 / 0.09	3 / 0.09	4 / 0.09	4 / 0.09	4 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09
	30,700	10th	3 / 0.08	5 / 0.09	6 / 0.09	6 / 0.09	7 / 0.09	8 / 0.09	8 / 0.09	8 / 0.09	9 / 0.09	9 / 0.09	9 / 0.09	9 / 0.09	10 / 0.09	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1	10 / 0.1
	40,400	15th	4 / 0.08	5 / 0.09	7 / 0.09	7 / 0.09	9 / 0.1	10 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	13 / 0.1	14 / 0.1	14 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1
	45,800	20th	4 / 0.08	6 / 0.09	7 / 0.1	9 / 0.1	11 / 0.1	13 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	17 / 0.11	17 / 0.11	18 / 0.11	19 / 0.11	19 / 0.11	19 / 0.11	19 / 0.11	20 / 0.11	20 / 0.11	20 / 0.11	20 / 0.11	20 / 0.11
	52,900	25th	4 / 0.08	6 / 0.1	9 / 0.1	11 / 0.1	12 / 0.11	15 / 0.11	16 / 0.11	16 / 0.11	17 / 0.11	17 / 0.11	19 / 0.12	20 / 0.11	21 / 0.11	22 / 0.11	23 / 0.11	23 / 0.11	24 / 0.11	25 / 0.11	25 / 0.11	25 / 0.11	25 / 0.11	25 / 0.11
	59,900	30th	4 / 0.08	7 / 0.1	10 / 0.11	12 / 0.11	15 / 0.11	18 / 0.11	19 / 0.11	20 / 0.11	20 / 0.11	21 / 0.11	23 / 0.11	23 / 0.11	25 / 0.11	26 / 0.11	26 / 0.11	27 / 0.11	28 / 0.11	29 / 0.11	30 / 0.11	30 / 0.11	30 / 0.11	30 / 0.11
	65,100	35th	4 / 0.08	9 / 0.1	11 / 0.1	14 / 0.1	17 / 0.1	20 / 0.11	22 / 0.1	22 / 0.11	23 / 0.1	24 / 0.1	26 / 0.1	27 / 0.1	28 / 0.1	29 / 0.1	31 / 0.1	32 / 0.1	33 / 0.1	34 / 0.1	35 / 0.1	35 / 0.1	35 / 0.1	35 / 0.1
	70,700	40th	4 / 0.08	10 / 0.1	12 / 0.1	16 / 0.1	19 / 0.1	22 / 0.1	24 / 0.1	24 / 0.1	25 / 0.1	26 / 0.1	28 / 0.1	30 / 0.1	31 / 0.1	33 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	38 / 0.09	39 / 0.09	40 / 0.09	40 / 0.09	40 / 0.09
	79,100	45th	4 / 0.08	14 / 0.09	17 / 0.09	21 / 0.09	23 / 0.09	26 / 0.1	28 / 0.1	29 / 0.1	29 / 0.1	30 / 0.1	32 / 0.1	33 / 0.1	36 / 0.09	37 / 0.09	39 / 0.09	40 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	44 / 0.09	45 / 0.08	45 / 0.08
	89,100	50th	4 / 0.08	15 / 0.09	17 / 0.1	23 / 0.09	24 / 0.09	29 / 0.1	32 / 0.1	33 / 0.1	35 / 0.09	35 / 0.09	36 / 0.09	37 / 0.09	39 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	45 / 0.09	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	50 / 0.08
	101,500	55th	7 / 0.08	16 / 0.09	19 / 0.09	24 / 0.09	28 / 0.1	33 / 0.1	35 / 0.09	36 / 0.09	38 / 0.09	38 / 0.09	39 / 0.09	41 / 0.09	42 / 0.09	44 / 0.08	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.07	54 / 0.07	55 / 0.07	55 / 0.07
	110,000	60th	7 / 0.08	22 / 0.1	25 / 0.1	30 / 0.09	33 / 0.1	40 / 0.09	42 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.06	59 / 0.06	60 / 0.06	60 / 0.06
	122,500	65th	7 / 0.08	22 / 0.1	25 / 0.1	33 / 0.09	37 / 0.1	42 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.07	54 / 0.07	57 / 0.07	58 / 0.06	61 / 0.06	62 / 0.06	63 / 0.06	64 / 0.06	65 / 0.05	65 / 0.05
	132,400	70th	7 / 0.08	24 / 0.1	27 / 0.1	34 / 0.09	40 / 0.09	45 / 0.09	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.07	53 / 0.07	54 / 0.07	56 / 0.07	59 / 0.07	-	-	65 / 0.05	66 / 0.05	68 / 0.05	69 / 0.05	70 / 0.05	70 / 0.05
	142,700	75th	7 / 0.08	29 / 0.1	34 / 0.1	41 / 0.09	49 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	58 / 0.06	58 / 0.06	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.07	34 / 0.1	40 / 0.1	48 / 0.08	55 / 0.07	59 / 0.06	60 / 0.06	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.04	80 / 0.04	80 / 0.04
	182,500	85th	10 / 0.07	40 / 0.09	49 / 0.08	56 / 0.07	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.04	85 / 0.04
	214,800	90th	12 / 0.06	47 / 0.08	56 / 0.07	60 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.1	56 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 133. Percent Drought Prediction and MSE of Drought Scenario 6 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 6			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08
	15,300	5th	0 / 0.08	3 / 0.08	4 / 0.08	4 / 0.08	4 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08
	30,700	10th	3 / 0.07	5 / 0.08	6 / 0.08	6 / 0.07	7 / 0.07	8 / 0.07	8 / 0.07	8 / 0.07	9 / 0.07	9 / 0.07	9 / 0.07	9 / 0.07	10 / 0.07	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08
	40,400	15th	4 / 0.07	5 / 0.08	7 / 0.08	7 / 0.08	9 / 0.08	10 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	13 / 0.08	14 / 0.08	14 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08
	45,800	20th	4 / 0.07	6 / 0.08	7 / 0.08	9 / 0.08	11 / 0.08	13 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	17 / 0.09	17 / 0.09	18 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09
	52,900	25th	4 / 0.07	6 / 0.08	9 / 0.08	11 / 0.08	12 / 0.08	15 / 0.09	16 / 0.09	16 / 0.09	17 / 0.09	17 / 0.09	19 / 0.1	20 / 0.1	21 / 0.1	22 / 0.1	23 / 0.1	23 / 0.1	24 / 0.1	25 / 0.09	25 / 0.09	25 / 0.09	25 / 0.09	25 / 0.09
	59,900	30th	4 / 0.07	7 / 0.08	10 / 0.09	12 / 0.08	15 / 0.08	18 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	21 / 0.09	23 / 0.09	23 / 0.1	25 / 0.09	26 / 0.1	26 / 0.1	27 / 0.1	28 / 0.09	29 / 0.09	30 / 0.09	30 / 0.09	30 / 0.09	30 / 0.09
	65,100	35th	4 / 0.07	9 / 0.08	11 / 0.09	14 / 0.09	17 / 0.09	20 / 0.09	22 / 0.09	22 / 0.09	23 / 0.09	24 / 0.09	26 / 0.09	27 / 0.09	28 / 0.09	29 / 0.09	31 / 0.09	32 / 0.09	33 / 0.09	34 / 0.09	35 / 0.09	35 / 0.09	35 / 0.09	35 / 0.09
	70,700	40th	4 / 0.07	10 / 0.09	12 / 0.09	16 / 0.09	19 / 0.09	22 / 0.09	24 / 0.09	24 / 0.09	25 / 0.09	26 / 0.09	28 / 0.09	30 / 0.09	31 / 0.09	33 / 0.09	35 / 0.09	36 / 0.09	37 / 0.09	38 / 0.09	39 / 0.09	40 / 0.08	40 / 0.08	
	79,100	45th	4 / 0.07	14 / 0.08	17 / 0.09	21 / 0.08	23 / 0.08	26 / 0.09	28 / 0.09	29 / 0.09	29 / 0.09	30 / 0.09	32 / 0.09	33 / 0.09	36 / 0.09	37 / 0.09	39 / 0.09	40 / 0.09	41 / 0.08	43 / 0.08	44 / 0.08	44 / 0.08	45 / 0.08	
	89,100	50th	4 / 0.07	15 / 0.08	17 / 0.09	23 / 0.08	24 / 0.08	29 / 0.09	32 / 0.09	33 / 0.09	35 / 0.09	35 / 0.09	36 / 0.09	37 / 0.09	39 / 0.09	41 / 0.08	43 / 0.08	44 / 0.08	45 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	
	101,500	55th	7 / 0.07	16 / 0.08	19 / 0.09	24 / 0.08	28 / 0.09	33 / 0.09	35 / 0.09	36 / 0.09	38 / 0.09	38 / 0.09	39 / 0.09	41 / 0.08	42 / 0.08	44 / 0.08	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.08	54 / 0.07	55 / 0.07	
	110,000	60th	7 / 0.07	22 / 0.06	25 / 0.07	30 / 0.07	33 / 0.08	40 / 0.08	42 / 0.08	44 / 0.08	44 / 0.08	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.08	54 / 0.08	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.07	60 / 0.07	
	122,500	65th	7 / 0.07	22 / 0.06	25 / 0.07	33 / 0.07	37 / 0.08	42 / 0.08	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.08	57 / 0.07	58 / 0.07	61 / 0.07	62 / 0.07	63 / 0.07	64 / 0.07	65 / 0.07	
	132,400	70th	7 / 0.07	24 / 0.06	27 / 0.07	34 / 0.07	40 / 0.08	45 / 0.08	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.08	53 / 0.08	54 / 0.08	56 / 0.08	59 / 0.07	-	-	65 / 0.07	66 / 0.07	68 / 0.07	69 / 0.07	70 / 0.07	
	142,700	75th	7 / 0.07	29 / 0.07	34 / 0.08	41 / 0.08	49 / 0.08	53 / 0.08	54 / 0.08	56 / 0.08	58 / 0.08	58 / 0.08	-	-	-	-	-	-	-	-	73 / 0.07	74 / 0.07	75 / 0.07	
	160,200	80th	10 / 0.07	34 / 0.08	40 / 0.08	48 / 0.08	55 / 0.08	59 / 0.07	60 / 0.07	63 / 0.07	-	-	-	-	-	-	-	-	-	-	-	80 / 0.06	80 / 0.06	
	182,500	85th	10 / 0.06	40 / 0.08	49 / 0.08	56 / 0.08	65 / 0.07	68 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06	
	214,800	90th	12 / 0.06	47 / 0.08	56 / 0.08	60 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.1	56 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 134. Percent Drought Prediction and MSE of Drought Scenario 7 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 7			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13	0 / 0.13
	15,300	5th	0 / 0.13	3 / 0.13	4 / 0.13	4 / 0.13	4 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13
	30,700	10th	3 / 0.12	5 / 0.13	6 / 0.13	6 / 0.13	7 / 0.13	8 / 0.13	8 / 0.13	8 / 0.13	9 / 0.13	9 / 0.13	9 / 0.13	9 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13
	40,400	15th	4 / 0.12	5 / 0.13	7 / 0.13	7 / 0.13	9 / 0.13	10 / 0.13	12 / 0.13	12 / 0.13	12 / 0.13	12 / 0.13	13 / 0.13	14 / 0.13	14 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13	15 / 0.13
	45,800	20th	4 / 0.12	6 / 0.13	7 / 0.12	9 / 0.12	11 / 0.12	13 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.13	17 / 0.12	17 / 0.12	18 / 0.12	19 / 0.12	19 / 0.12	19 / 0.12	19 / 0.12	20 / 0.12	20 / 0.12	20 / 0.12	20 / 0.12	20 / 0.12
	52,900	25th	4 / 0.12	6 / 0.13	9 / 0.12	11 / 0.12	12 / 0.12	15 / 0.12	16 / 0.12	16 / 0.12	17 / 0.12	17 / 0.12	19 / 0.12	20 / 0.12	21 / 0.12	22 / 0.12	23 / 0.11	23 / 0.12	24 / 0.11	25 / 0.11	25 / 0.11	25 / 0.11	25 / 0.11	25 / 0.11
	59,900	30th	4 / 0.12	7 / 0.13	10 / 0.12	12 / 0.11	15 / 0.11	18 / 0.11	19 / 0.11	20 / 0.11	20 / 0.11	21 / 0.11	23 / 0.11	23 / 0.11	25 / 0.11	26 / 0.11	26 / 0.11	27 / 0.11	28 / 0.11	29 / 0.11	30 / 0.1	30 / 0.11	30 / 0.11	30 / 0.11
	65,100	35th	4 / 0.12	9 / 0.13	11 / 0.12	14 / 0.11	17 / 0.11	20 / 0.11	22 / 0.11	22 / 0.11	23 / 0.11	24 / 0.11	26 / 0.11	27 / 0.1	28 / 0.1	29 / 0.1	31 / 0.1	32 / 0.1	33 / 0.1	34 / 0.1	35 / 0.1	35 / 0.1	35 / 0.1	35 / 0.1
	70,700	40th	4 / 0.12	10 / 0.13	12 / 0.11	16 / 0.11	19 / 0.11	22 / 0.11	24 / 0.1	24 / 0.1	25 / 0.1	26 / 0.1	28 / 0.1	30 / 0.1	31 / 0.1	33 / 0.09	35 / 0.09	36 / 0.09	37 / 0.09	38 / 0.09	39 / 0.09	40 / 0.09	40 / 0.09	40 / 0.09
	79,100	45th	4 / 0.12	14 / 0.12	17 / 0.1	21 / 0.1	23 / 0.1	26 / 0.1	28 / 0.1	29 / 0.1	29 / 0.1	30 / 0.1	32 / 0.1	33 / 0.1	36 / 0.09	37 / 0.09	39 / 0.09	40 / 0.09	41 / 0.09	43 / 0.09	44 / 0.08	44 / 0.08	45 / 0.08	45 / 0.08
	89,100	50th	4 / 0.12	15 / 0.12	17 / 0.1	23 / 0.1	24 / 0.1	29 / 0.1	32 / 0.1	33 / 0.1	35 / 0.09	35 / 0.09	36 / 0.09	37 / 0.09	39 / 0.09	41 / 0.09	43 / 0.08	44 / 0.08	45 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	50 / 0.08
	101,500	55th	7 / 0.12	16 / 0.11	19 / 0.1	24 / 0.09	28 / 0.1	33 / 0.1	35 / 0.09	36 / 0.09	38 / 0.09	38 / 0.09	39 / 0.09	41 / 0.09	42 / 0.09	44 / 0.08	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.08	54 / 0.07	55 / 0.07	55 / 0.07
	110,000	60th	7 / 0.12	22 / 0.11	25 / 0.1	30 / 0.09	33 / 0.1	40 / 0.09	42 / 0.09	44 / 0.09	44 / 0.09	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.07	60 / 0.07	60 / 0.07
	122,500	65th	7 / 0.12	22 / 0.11	25 / 0.1	33 / 0.09	37 / 0.09	42 / 0.09	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.07	57 / 0.07	58 / 0.07	61 / 0.07	62 / 0.07	63 / 0.07	64 / 0.06	65 / 0.06	65 / 0.06
	132,400	70th	7 / 0.12	24 / 0.11	27 / 0.1	34 / 0.09	40 / 0.09	45 / 0.08	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	59 / 0.07	-	-	65 / 0.06	66 / 0.06	68 / 0.06	69 / 0.06	70 / 0.06	70 / 0.06
	142,700	75th	7 / 0.12	29 / 0.12	34 / 0.1	41 / 0.09	49 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	58 / 0.07	58 / 0.07	-	-	-	-	-	-	-	-	73 / 0.06	74 / 0.06	75 / 0.06	75 / 0.06
	160,200	80th	10 / 0.11	34 / 0.12	40 / 0.09	48 / 0.08	55 / 0.07	59 / 0.06	60 / 0.06	63 / 0.06	-	-	-	-	-	-	-	-	-	-	-	80 / 0.06	80 / 0.06	80 / 0.06
	182,500	85th	10 / 0.11	40 / 0.1	49 / 0.08	56 / 0.07	65 / 0.06	68 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.07	85 / 0.07
	214,800	90th	12 / 0.09	47 / 0.08	56 / 0.07	60 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.07	56 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 135. Percent Drought Prediction and MSE of Drought Scenario 8 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 8			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16
	15,300	5th	0 / 0.16	3 / 0.15	4 / 0.15	4 / 0.15	4 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15
	30,700	10th	3 / 0.15	5 / 0.15	6 / 0.15	6 / 0.15	7 / 0.15	8 / 0.15	8 / 0.15	8 / 0.15	9 / 0.15	9 / 0.15	9 / 0.15	9 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15
	40,400	15th	4 / 0.14	5 / 0.15	7 / 0.15	7 / 0.15	9 / 0.15	10 / 0.15	12 / 0.15	12 / 0.15	12 / 0.15	12 / 0.15	13 / 0.15	14 / 0.15	14 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15
	45,800	20th	4 / 0.14	6 / 0.15	7 / 0.14	9 / 0.14	11 / 0.14	13 / 0.14	15 / 0.14	15 / 0.14	15 / 0.14	15 / 0.14	17 / 0.14	17 / 0.14	18 / 0.14	19 / 0.14	19 / 0.14	19 / 0.13	19 / 0.13	20 / 0.13	20 / 0.13	20 / 0.13	20 / 0.13	20 / 0.13
	52,900	25th	4 / 0.14	6 / 0.15	9 / 0.14	11 / 0.14	12 / 0.14	15 / 0.14	16 / 0.14	16 / 0.14	17 / 0.13	17 / 0.14	19 / 0.14	20 / 0.13	21 / 0.13	22 / 0.13	23 / 0.12	23 / 0.12	24 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12
	59,900	30th	4 / 0.14	7 / 0.15	10 / 0.14	12 / 0.13	15 / 0.13	18 / 0.13	19 / 0.13	20 / 0.13	20 / 0.13	21 / 0.13	23 / 0.13	23 / 0.12	25 / 0.12	26 / 0.11	26 / 0.12	27 / 0.11	28 / 0.11	29 / 0.11	30 / 0.11	30 / 0.11	30 / 0.11	30 / 0.11
	65,100	35th	4 / 0.14	9 / 0.15	11 / 0.14	14 / 0.13	17 / 0.13	20 / 0.12	22 / 0.12	22 / 0.12	23 / 0.12	24 / 0.12	26 / 0.12	27 / 0.12	28 / 0.11	29 / 0.11	31 / 0.1	32 / 0.1	33 / 0.1	34 / 0.1	35 / 0.1	35 / 0.1	35 / 0.1	
	70,700	40th	4 / 0.14	10 / 0.15	12 / 0.13	16 / 0.12	19 / 0.12	22 / 0.12	24 / 0.12	24 / 0.12	25 / 0.11	26 / 0.11	28 / 0.11	30 / 0.11	31 / 0.1	33 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	38 / 0.09	39 / 0.09	40 / 0.09	40 / 0.09	
	79,100	45th	4 / 0.14	14 / 0.13	17 / 0.12	21 / 0.11	23 / 0.11	26 / 0.11	28 / 0.11	29 / 0.11	29 / 0.11	30 / 0.11	32 / 0.1	33 / 0.1	36 / 0.1	37 / 0.09	39 / 0.09	40 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	44 / 0.09	45 / 0.08	
	89,100	50th	4 / 0.14	15 / 0.13	17 / 0.12	23 / 0.11	24 / 0.11	29 / 0.11	32 / 0.1	33 / 0.1	35 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	39 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	45 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	
	101,500	55th	7 / 0.14	16 / 0.13	19 / 0.11	24 / 0.11	28 / 0.11	33 / 0.1	35 / 0.1	36 / 0.1	38 / 0.1	38 / 0.1	39 / 0.09	41 / 0.09	42 / 0.09	44 / 0.09	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.08	54 / 0.07	55 / 0.07	
	110,000	60th	7 / 0.14	22 / 0.12	25 / 0.11	30 / 0.1	33 / 0.11	40 / 0.09	42 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.07	60 / 0.07	
	122,500	65th	7 / 0.14	22 / 0.12	25 / 0.11	33 / 0.09	37 / 0.1	42 / 0.09	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.07	57 / 0.07	58 / 0.07	61 / 0.07	62 / 0.07	63 / 0.07	64 / 0.07	65 / 0.07	
	132,400	70th	7 / 0.14	24 / 0.12	27 / 0.11	34 / 0.09	40 / 0.09	45 / 0.08	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.07	53 / 0.07	54 / 0.07	56 / 0.07	59 / 0.07	-	-	65 / 0.07	66 / 0.07	68 / 0.07	69 / 0.07	70 / 0.07	
	142,700	75th	7 / 0.14	29 / 0.11	34 / 0.09	41 / 0.08	49 / 0.08	53 / 0.08	54 / 0.07	56 / 0.07	58 / 0.07	58 / 0.07	-	-	-	-	-	-	-	-	73 / 0.07	74 / 0.07	75 / 0.07	
	160,200	80th	10 / 0.13	34 / 0.11	40 / 0.09	48 / 0.08	55 / 0.07	59 / 0.07	60 / 0.07	63 / 0.07	-	-	-	-	-	-	-	-	-	-	-	80 / 0.08	80 / 0.08	
	182,500	85th	10 / 0.13	40 / 0.09	49 / 0.08	56 / 0.07	65 / 0.07	68 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.09	
	214,800	90th	12 / 0.11	47 / 0.08	56 / 0.08	60 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.06	56 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 136. Percent Drought Prediction and MSE of Drought Scenario 9 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 9			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16	0 / 0.16
	15,300	5th	0 / 0.16	3 / 0.15	4 / 0.15	4 / 0.15	4 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15	5 / 0.15
	30,700	10th	3 / 0.15	5 / 0.15	6 / 0.15	6 / 0.15	7 / 0.15	8 / 0.15	8 / 0.15	8 / 0.15	9 / 0.15	9 / 0.15	9 / 0.15	9 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15	10 / 0.15
	40,400	15th	4 / 0.15	5 / 0.15	7 / 0.15	7 / 0.15	9 / 0.15	10 / 0.15	12 / 0.15	12 / 0.15	12 / 0.15	12 / 0.15	13 / 0.15	14 / 0.15	14 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15
	45,800	20th	4 / 0.15	6 / 0.15	7 / 0.14	9 / 0.14	11 / 0.14	13 / 0.14	15 / 0.14	15 / 0.14	15 / 0.14	15 / 0.14	17 / 0.14	17 / 0.14	18 / 0.14	19 / 0.14	19 / 0.14	19 / 0.14	19 / 0.14	20 / 0.13	20 / 0.13	20 / 0.13	20 / 0.13	20 / 0.13
	52,900	25th	4 / 0.15	6 / 0.16	9 / 0.14	11 / 0.14	12 / 0.14	15 / 0.14	16 / 0.14	16 / 0.14	17 / 0.14	17 / 0.14	19 / 0.14	20 / 0.13	21 / 0.13	22 / 0.13	23 / 0.12	23 / 0.12	24 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12	25 / 0.12
	59,900	30th	4 / 0.15	7 / 0.15	10 / 0.14	12 / 0.13	15 / 0.13	18 / 0.13	19 / 0.13	20 / 0.13	20 / 0.13	21 / 0.13	23 / 0.13	23 / 0.13	25 / 0.12	26 / 0.12	26 / 0.12	27 / 0.11	28 / 0.11	29 / 0.11	30 / 0.11	30 / 0.11	30 / 0.11	30 / 0.11
	65,100	35th	4 / 0.15	9 / 0.15	11 / 0.14	14 / 0.13	17 / 0.13	20 / 0.13	22 / 0.12	22 / 0.12	23 / 0.12	24 / 0.12	26 / 0.12	27 / 0.12	28 / 0.11	29 / 0.11	31 / 0.1	32 / 0.1	33 / 0.1	34 / 0.1	35 / 0.1	35 / 0.1	35 / 0.1	35 / 0.1
	70,700	40th	4 / 0.15	10 / 0.15	12 / 0.13	16 / 0.12	19 / 0.12	22 / 0.12	24 / 0.12	24 / 0.12	25 / 0.11	26 / 0.11	28 / 0.11	30 / 0.11	31 / 0.1	33 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	38 / 0.09	39 / 0.09	40 / 0.09	40 / 0.09	40 / 0.09
	79,100	45th	4 / 0.15	14 / 0.14	17 / 0.12	21 / 0.11	23 / 0.11	26 / 0.11	28 / 0.11	29 / 0.11	29 / 0.11	30 / 0.11	32 / 0.11	33 / 0.1	36 / 0.1	37 / 0.09	39 / 0.09	40 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	44 / 0.09	45 / 0.08	45 / 0.08
	89,100	50th	4 / 0.15	15 / 0.13	17 / 0.12	23 / 0.11	24 / 0.11	29 / 0.11	32 / 0.11	33 / 0.1	35 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	39 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	45 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	50 / 0.08
	101,500	55th	7 / 0.14	16 / 0.13	19 / 0.12	24 / 0.11	28 / 0.11	33 / 0.1	35 / 0.1	36 / 0.1	38 / 0.1	38 / 0.1	39 / 0.09	41 / 0.09	42 / 0.09	44 / 0.09	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.08	54 / 0.07	55 / 0.07	55 / 0.07
	110,000	60th	7 / 0.14	22 / 0.12	25 / 0.11	30 / 0.1	33 / 0.11	40 / 0.09	42 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.07	60 / 0.07	60 / 0.07
	122,500	65th	7 / 0.14	22 / 0.12	25 / 0.11	33 / 0.09	37 / 0.1	42 / 0.09	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.07	57 / 0.07	58 / 0.07	61 / 0.07	62 / 0.07	63 / 0.07	64 / 0.07	65 / 0.07	65 / 0.07
	132,400	70th	7 / 0.14	24 / 0.12	27 / 0.1	34 / 0.09	40 / 0.09	45 / 0.08	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	59 / 0.07	-	-	65 / 0.07	66 / 0.07	68 / 0.07	69 / 0.07	70 / 0.07	70 / 0.07
	142,700	75th	7 / 0.14	29 / 0.11	34 / 0.09	41 / 0.08	49 / 0.08	53 / 0.08	54 / 0.07	56 / 0.07	58 / 0.07	58 / 0.07	-	-	-	-	-	-	-	-	73 / 0.07	74 / 0.07	75 / 0.07	75 / 0.07
	160,200	80th	10 / 0.13	34 / 0.11	40 / 0.09	48 / 0.08	55 / 0.07	59 / 0.07	60 / 0.07	63 / 0.07	-	-	-	-	-	-	-	-	-	-	-	80 / 0.08	80 / 0.08	80 / 0.08
	182,500	85th	10 / 0.13	40 / 0.09	49 / 0.08	56 / 0.07	65 / 0.07	68 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.09	85 / 0.09
	214,800	90th	12 / 0.11	47 / 0.08	56 / 0.08	60 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.06	56 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 137. Percent Drought Prediction and MSE of Drought Scenario 10 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 10			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17
	15,300	5th	0 / 0.17	3 / 0.16	4 / 0.16	4 / 0.16	4 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16	5 / 0.16
	30,700	10th	3 / 0.16	5 / 0.16	6 / 0.16	6 / 0.16	7 / 0.16	8 / 0.16	8 / 0.16	8 / 0.16	9 / 0.16	9 / 0.16	9 / 0.16	9 / 0.16	10 / 0.16	10 / 0.16	10 / 0.16	10 / 0.16	10 / 0.16	10 / 0.16	10 / 0.16	10 / 0.16	10 / 0.16
	40,400	15th	4 / 0.16	5 / 0.16	7 / 0.16	7 / 0.16	9 / 0.16	10 / 0.16	12 / 0.16	12 / 0.16	12 / 0.16	12 / 0.16	13 / 0.16	14 / 0.16	14 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16
	45,800	20th	4 / 0.16	6 / 0.16	7 / 0.16	9 / 0.15	11 / 0.15	13 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	17 / 0.15	17 / 0.15	18 / 0.14	19 / 0.14	19 / 0.14	19 / 0.14	19 / 0.14	20 / 0.14	20 / 0.14	20 / 0.14	20 / 0.14
	52,900	25th	4 / 0.16	6 / 0.17	9 / 0.15	11 / 0.15	12 / 0.15	15 / 0.15	16 / 0.15	16 / 0.15	17 / 0.14	17 / 0.15	19 / 0.14	20 / 0.14	21 / 0.14	22 / 0.13	23 / 0.13	23 / 0.13	24 / 0.13	25 / 0.13	25 / 0.13	25 / 0.13	25 / 0.13
	59,900	30th	4 / 0.16	7 / 0.16	10 / 0.15	12 / 0.14	15 / 0.14	18 / 0.13	19 / 0.14	20 / 0.13	20 / 0.13	21 / 0.13	23 / 0.13	23 / 0.13	25 / 0.12	26 / 0.12	26 / 0.12	27 / 0.12	28 / 0.12	29 / 0.12	30 / 0.11	30 / 0.11	30 / 0.11
	65,100	35th	4 / 0.16	9 / 0.16	11 / 0.15	14 / 0.14	17 / 0.14	20 / 0.13	22 / 0.13	22 / 0.13	23 / 0.13	24 / 0.13	26 / 0.12	27 / 0.12	28 / 0.12	29 / 0.11	31 / 0.11	32 / 0.11	33 / 0.11	34 / 0.1	35 / 0.1	35 / 0.1	35 / 0.1
	70,700	40th	4 / 0.16	10 / 0.16	12 / 0.14	16 / 0.13	19 / 0.13	22 / 0.13	24 / 0.12	24 / 0.12	25 / 0.12	26 / 0.12	28 / 0.12	30 / 0.11	31 / 0.11	33 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	38 / 0.1	39 / 0.09	40 / 0.09	40 / 0.09
	79,100	45th	4 / 0.16	14 / 0.14	17 / 0.13	21 / 0.12	23 / 0.12	26 / 0.12	28 / 0.11	29 / 0.11	29 / 0.11	30 / 0.11	32 / 0.11	33 / 0.11	36 / 0.1	37 / 0.1	39 / 0.09	40 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09
	89,100	50th	4 / 0.16	15 / 0.14	17 / 0.13	23 / 0.12	24 / 0.12	29 / 0.12	32 / 0.11	33 / 0.11	35 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	39 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	45 / 0.09	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08
	101,500	55th	7 / 0.15	16 / 0.14	19 / 0.12	24 / 0.11	28 / 0.12	33 / 0.11	35 / 0.1	36 / 0.1	38 / 0.1	38 / 0.1	39 / 0.1	41 / 0.09	42 / 0.09	44 / 0.09	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.08	54 / 0.07	55 / 0.07
	110,000	60th	7 / 0.15	22 / 0.13	25 / 0.12	30 / 0.11	33 / 0.11	40 / 0.1	42 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.07	60 / 0.07
	122,500	65th	7 / 0.15	22 / 0.13	25 / 0.11	33 / 0.1	37 / 0.1	42 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.07	57 / 0.07	58 / 0.07	61 / 0.07	62 / 0.07	63 / 0.07	64 / 0.07	65 / 0.07
	132,400	70th	7 / 0.15	24 / 0.13	27 / 0.11	34 / 0.1	40 / 0.09	45 / 0.09	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.07	53 / 0.07	54 / 0.07	56 / 0.07	59 / 0.07	-	-	65 / 0.07	66 / 0.07	68 / 0.07	69 / 0.07	70 / 0.07
	142,700	75th	7 / 0.15	29 / 0.12	34 / 0.09	41 / 0.09	49 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	58 / 0.07	58 / 0.07	-	-	-	-	-	-	-	-	73 / 0.07	74 / 0.08	75 / 0.08
	160,200	80th	10 / 0.14	34 / 0.11	40 / 0.09	48 / 0.08	55 / 0.07	59 / 0.07	60 / 0.07	63 / 0.06	-	-	-	-	-	-	-	-	-	-	-	80 / 0.09	80 / 0.09
	182,500	85th	10 / 0.14	40 / 0.1	49 / 0.08	56 / 0.07	65 / 0.06	68 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.1
	214,800	90th	12 / 0.12	47 / 0.08	56 / 0.08	60 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.07	56 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 138. Percent Drought Prediction and MSE of Drought Scenario 11 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 11			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17	0 / 0.17
	15,300	5th	0 / 0.17	3 / 0.17	4 / 0.17	4 / 0.17	4 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17	5 / 0.17
	30,700	10th	3 / 0.16	5 / 0.16	6 / 0.16	6 / 0.17	7 / 0.17	8 / 0.16	8 / 0.17	8 / 0.17	9 / 0.16	9 / 0.16	9 / 0.16	9 / 0.16	10 / 0.16	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17	10 / 0.17
	40,400	15th	4 / 0.16	5 / 0.17	7 / 0.16	7 / 0.17	9 / 0.17	10 / 0.16	12 / 0.16	12 / 0.16	12 / 0.16	12 / 0.16	13 / 0.16	14 / 0.16	14 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.16
	45,800	20th	4 / 0.16	6 / 0.16	7 / 0.16	9 / 0.15	11 / 0.16	13 / 0.15	15 / 0.15	15 / 0.15	15 / 0.15	15 / 0.16	17 / 0.15	17 / 0.15	18 / 0.15	19 / 0.15	19 / 0.15	19 / 0.15	19 / 0.15	20 / 0.14	20 / 0.14	20 / 0.14	20 / 0.14	20 / 0.14
	52,900	25th	4 / 0.16	6 / 0.17	9 / 0.16	11 / 0.15	12 / 0.16	15 / 0.15	16 / 0.15	16 / 0.15	17 / 0.15	17 / 0.15	19 / 0.15	20 / 0.14	21 / 0.14	22 / 0.14	23 / 0.13	23 / 0.13	24 / 0.13	25 / 0.13	25 / 0.13	25 / 0.13	25 / 0.13	25 / 0.13
	59,900	30th	4 / 0.16	7 / 0.17	10 / 0.15	12 / 0.15	15 / 0.14	18 / 0.14	19 / 0.14	20 / 0.14	20 / 0.14	21 / 0.14	23 / 0.14	23 / 0.13	25 / 0.13	26 / 0.12	26 / 0.12	27 / 0.12	28 / 0.12	29 / 0.12	30 / 0.12	30 / 0.12	30 / 0.12	30 / 0.12
	65,100	35th	4 / 0.16	9 / 0.16	11 / 0.15	14 / 0.14	17 / 0.14	20 / 0.14	22 / 0.13	22 / 0.13	23 / 0.13	24 / 0.13	26 / 0.13	27 / 0.12	28 / 0.12	29 / 0.12	31 / 0.11	32 / 0.11	33 / 0.11	34 / 0.11	35 / 0.1	35 / 0.1	35 / 0.1	
	70,700	40th	4 / 0.16	10 / 0.16	12 / 0.14	16 / 0.13	19 / 0.13	22 / 0.13	24 / 0.12	24 / 0.12	25 / 0.12	26 / 0.12	28 / 0.12	30 / 0.11	31 / 0.11	33 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	38 / 0.1	39 / 0.1	40 / 0.09	40 / 0.09	
	79,100	45th	4 / 0.16	14 / 0.14	17 / 0.13	21 / 0.12	23 / 0.12	26 / 0.12	28 / 0.11	29 / 0.11	29 / 0.11	30 / 0.11	32 / 0.11	33 / 0.11	36 / 0.1	37 / 0.1	39 / 0.09	40 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	
	89,100	50th	4 / 0.16	15 / 0.14	17 / 0.13	23 / 0.11	24 / 0.12	29 / 0.11	32 / 0.11	33 / 0.11	35 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	39 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	45 / 0.09	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	
	101,500	55th	7 / 0.15	16 / 0.14	19 / 0.12	24 / 0.11	28 / 0.12	33 / 0.11	35 / 0.1	36 / 0.1	38 / 0.1	38 / 0.1	39 / 0.1	41 / 0.09	42 / 0.09	44 / 0.09	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.08	54 / 0.07	55 / 0.07	
	110,000	60th	7 / 0.15	22 / 0.13	25 / 0.11	30 / 0.1	33 / 0.11	40 / 0.1	42 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.07	60 / 0.07	
	122,500	65th	7 / 0.15	22 / 0.13	25 / 0.11	33 / 0.1	37 / 0.1	42 / 0.09	45 / 0.09	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.07	57 / 0.07	58 / 0.07	61 / 0.07	62 / 0.07	63 / 0.07	64 / 0.07	65 / 0.07	
	132,400	70th	7 / 0.15	24 / 0.12	27 / 0.11	34 / 0.1	40 / 0.09	45 / 0.09	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.07	53 / 0.07	54 / 0.07	56 / 0.07	59 / 0.07	-	-	65 / 0.07	66 / 0.07	68 / 0.07	69 / 0.07	70 / 0.07	
	142,700	75th	7 / 0.15	29 / 0.11	34 / 0.09	41 / 0.08	49 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	58 / 0.07	58 / 0.07	-	-	-	-	-	-	-	-	73 / 0.08	74 / 0.08	75 / 0.08	
	160,200	80th	10 / 0.14	34 / 0.11	40 / 0.09	48 / 0.08	55 / 0.07	59 / 0.07	60 / 0.07	63 / 0.07	-	-	-	-	-	-	-	-	-	-	-	80 / 0.09	80 / 0.09	
	182,500	85th	10 / 0.14	40 / 0.1	49 / 0.08	56 / 0.07	65 / 0.06	68 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.1	
	214,800	90th	12 / 0.13	47 / 0.08	56 / 0.08	60 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.07	56 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 139. Percent Drought Prediction and MSE of Drought Scenario 12 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 12			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19	0 / 0.19
	15,300	5th	0 / 0.19	3 / 0.18	4 / 0.18	4 / 0.18	4 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18	5 / 0.18
	30,700	10th	3 / 0.18	5 / 0.18	6 / 0.18	6 / 0.18	7 / 0.18	8 / 0.18	8 / 0.18	8 / 0.18	9 / 0.17	9 / 0.18	9 / 0.18	9 / 0.18	10 / 0.17	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18	10 / 0.18
	40,400	15th	4 / 0.17	5 / 0.18	7 / 0.18	7 / 0.18	9 / 0.18	10 / 0.17	12 / 0.17	12 / 0.17	12 / 0.17	12 / 0.17	13 / 0.17	14 / 0.17	14 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17	15 / 0.17
	45,800	20th	4 / 0.17	6 / 0.18	7 / 0.17	9 / 0.17	11 / 0.17	13 / 0.17	15 / 0.16	15 / 0.16	15 / 0.16	15 / 0.17	17 / 0.16	17 / 0.16	18 / 0.16	19 / 0.16	19 / 0.16	19 / 0.16	19 / 0.16	20 / 0.15	20 / 0.15	20 / 0.15	20 / 0.15	
	52,900	25th	4 / 0.17	6 / 0.18	9 / 0.17	11 / 0.16	12 / 0.17	15 / 0.16	16 / 0.16	16 / 0.16	17 / 0.16	17 / 0.16	19 / 0.16	20 / 0.15	21 / 0.15	22 / 0.14	23 / 0.14	23 / 0.14	24 / 0.14	25 / 0.14	25 / 0.14	25 / 0.14	25 / 0.14	
	59,900	30th	4 / 0.17	7 / 0.18	10 / 0.16	12 / 0.16	15 / 0.15	18 / 0.15	19 / 0.15	20 / 0.15	20 / 0.15	21 / 0.14	23 / 0.14	23 / 0.14	25 / 0.13	26 / 0.13	26 / 0.13	27 / 0.13	28 / 0.13	29 / 0.12	30 / 0.12	30 / 0.12	30 / 0.12	
	65,100	35th	4 / 0.17	9 / 0.18	11 / 0.16	14 / 0.15	17 / 0.15	20 / 0.14	22 / 0.14	22 / 0.14	23 / 0.14	24 / 0.14	26 / 0.13	27 / 0.13	28 / 0.13	29 / 0.12	31 / 0.12	32 / 0.12	33 / 0.11	34 / 0.11	35 / 0.11	35 / 0.11	35 / 0.11	
	70,700	40th	4 / 0.17	10 / 0.17	12 / 0.15	16 / 0.14	19 / 0.14	22 / 0.14	24 / 0.13	24 / 0.13	25 / 0.13	26 / 0.13	28 / 0.13	30 / 0.12	31 / 0.11	33 / 0.11	35 / 0.11	36 / 0.1	37 / 0.1	38 / 0.1	39 / 0.1	40 / 0.1	40 / 0.1	
	79,100	45th	4 / 0.17	14 / 0.15	17 / 0.14	21 / 0.13	23 / 0.13	26 / 0.12	28 / 0.12	29 / 0.12	29 / 0.12	30 / 0.12	32 / 0.11	33 / 0.11	36 / 0.1	37 / 0.1	39 / 0.1	40 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	
	89,100	50th	4 / 0.17	15 / 0.15	17 / 0.14	23 / 0.12	24 / 0.12	29 / 0.12	32 / 0.11	33 / 0.11	35 / 0.1	35 / 0.1	36 / 0.1	37 / 0.1	39 / 0.09	41 / 0.09	43 / 0.09	44 / 0.09	45 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	
	101,500	55th	7 / 0.16	16 / 0.15	19 / 0.13	24 / 0.12	28 / 0.11	33 / 0.1	35 / 0.1	36 / 0.1	38 / 0.1	38 / 0.1	39 / 0.09	41 / 0.09	42 / 0.09	44 / 0.08	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.08	54 / 0.07	55 / 0.07	
	110,000	60th	7 / 0.16	22 / 0.13	25 / 0.12	30 / 0.11	33 / 0.1	40 / 0.09	42 / 0.09	44 / 0.09	44 / 0.09	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.07	60 / 0.07	
	122,500	65th	7 / 0.16	22 / 0.13	25 / 0.11	33 / 0.1	37 / 0.09	42 / 0.09	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.07	57 / 0.07	58 / 0.07	61 / 0.07	62 / 0.07	63 / 0.07	64 / 0.07	65 / 0.07	
	132,400	70th	7 / 0.16	24 / 0.13	27 / 0.11	34 / 0.1	40 / 0.09	45 / 0.08	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.08	53 / 0.08	54 / 0.07	56 / 0.07	59 / 0.08	-	-	65 / 0.08	66 / 0.08	68 / 0.08	69 / 0.08	70 / 0.08	
	142,700	75th	7 / 0.16	29 / 0.12	34 / 0.1	41 / 0.09	49 / 0.08	53 / 0.08	54 / 0.08	56 / 0.07	58 / 0.07	58 / 0.07	-	-	-	-	-	-	-	-	73 / 0.08	74 / 0.09	75 / 0.09	
	160,200	80th	10 / 0.15	34 / 0.11	40 / 0.09	48 / 0.08	55 / 0.07	59 / 0.07	60 / 0.07	63 / 0.07	-	-	-	-	-	-	-	-	-	-	-	80 / 0.1	80 / 0.1	
	182,500	85th	10 / 0.15	40 / 0.1	49 / 0.08	56 / 0.07	65 / 0.07	68 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.11	
	214,800	90th	12 / 0.14	47 / 0.08	56 / 0.08	60 / 0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.07	56 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 140. Percent Drought Prediction and MSE of Drought Scenario 13 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 13			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21	0 / 0.21
	15,300	5th	0 / 0.21	3 / 0.2	4 / 0.2	4 / 0.2	4 / 0.21	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2	5 / 0.2
	30,700	10th	3 / 0.2	5 / 0.2	6 / 0.2	6 / 0.2	7 / 0.2	8 / 0.2	8 / 0.2	8 / 0.2	9 / 0.2	9 / 0.2	9 / 0.2	9 / 0.2	10 / 0.19	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2	10 / 0.2
	40,400	15th	4 / 0.2	5 / 0.2	7 / 0.2	7 / 0.2	9 / 0.2	10 / 0.19	12 / 0.19	12 / 0.19	12 / 0.19	12 / 0.19	13 / 0.19	14 / 0.19	14 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19	15 / 0.19
	45,800	20th	4 / 0.2	6 / 0.2	7 / 0.19	9 / 0.19	11 / 0.19	13 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	15 / 0.18	17 / 0.18	17 / 0.18	18 / 0.17	19 / 0.17	19 / 0.17	19 / 0.17	19 / 0.17	20 / 0.17	20 / 0.17	20 / 0.17	20 / 0.17	20 / 0.17
	52,900	25th	4 / 0.2	6 / 0.21	9 / 0.19	11 / 0.18	12 / 0.19	15 / 0.18	16 / 0.17	16 / 0.18	17 / 0.17	17 / 0.17	19 / 0.17	20 / 0.17	21 / 0.16	22 / 0.16	23 / 0.15	23 / 0.15	24 / 0.15	25 / 0.15	25 / 0.15	25 / 0.15	25 / 0.15	25 / 0.15
	59,900	30th	4 / 0.2	7 / 0.2	10 / 0.18	12 / 0.17	15 / 0.17	18 / 0.16	19 / 0.16	20 / 0.16	20 / 0.16	21 / 0.15	23 / 0.15	23 / 0.15	25 / 0.14	26 / 0.14	26 / 0.14	27 / 0.14	28 / 0.13	29 / 0.13	30 / 0.13	30 / 0.13	30 / 0.13	30 / 0.13
	65,100	35th	4 / 0.2	9 / 0.19	11 / 0.17	14 / 0.17	17 / 0.16	20 / 0.15	22 / 0.15	22 / 0.15	23 / 0.15	24 / 0.14	26 / 0.14	27 / 0.14	28 / 0.13	29 / 0.13	31 / 0.12	32 / 0.12	33 / 0.12	34 / 0.11	35 / 0.11	35 / 0.11	35 / 0.11	35 / 0.11
	70,700	40th	4 / 0.2	10 / 0.18	12 / 0.17	16 / 0.15	19 / 0.15	22 / 0.14	24 / 0.14	24 / 0.14	25 / 0.14	26 / 0.14	28 / 0.13	30 / 0.13	31 / 0.12	33 / 0.11	35 / 0.11	36 / 0.11	37 / 0.11	38 / 0.1	39 / 0.1	40 / 0.1	40 / 0.1	40 / 0.1
	79,100	45th	4 / 0.2	14 / 0.17	17 / 0.15	21 / 0.14	23 / 0.14	26 / 0.13	28 / 0.13	29 / 0.12	29 / 0.12	30 / 0.12	32 / 0.12	33 / 0.12	36 / 0.1	37 / 0.1	39 / 0.1	40 / 0.1	41 / 0.1	43 / 0.09	44 / 0.09	44 / 0.09	45 / 0.09	45 / 0.09
	89,100	50th	4 / 0.2	15 / 0.16	17 / 0.15	23 / 0.13	24 / 0.13	29 / 0.12	32 / 0.12	33 / 0.11	35 / 0.11	35 / 0.11	36 / 0.11	37 / 0.1	39 / 0.1	41 / 0.09	43 / 0.09	44 / 0.09	45 / 0.09	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	50 / 0.08
	101,500	55th	7 / 0.19	16 / 0.16	19 / 0.14	24 / 0.13	28 / 0.12	33 / 0.11	35 / 0.1	36 / 0.1	38 / 0.1	38 / 0.1	39 / 0.1	41 / 0.09	42 / 0.09	44 / 0.09	47 / 0.08	49 / 0.08	49 / 0.08	51 / 0.08	52 / 0.08	54 / 0.07	55 / 0.07	55 / 0.07
	110,000	60th	7 / 0.19	22 / 0.13	25 / 0.12	30 / 0.11	33 / 0.1	40 / 0.09	42 / 0.09	44 / 0.09	44 / 0.09	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	50 / 0.08	53 / 0.07	54 / 0.07	56 / 0.07	57 / 0.07	58 / 0.07	59 / 0.07	60 / 0.07	60 / 0.07
	122,500	65th	7 / 0.19	22 / 0.13	25 / 0.11	33 / 0.1	37 / 0.09	42 / 0.09	45 / 0.08	46 / 0.08	47 / 0.08	48 / 0.08	49 / 0.08	50 / 0.08	52 / 0.08	54 / 0.07	57 / 0.07	58 / 0.07	61 / 0.08	62 / 0.08	63 / 0.08	64 / 0.08	65 / 0.08	65 / 0.08
	132,400	70th	7 / 0.19	24 / 0.12	27 / 0.1	34 / 0.09	40 / 0.09	45 / 0.08	48 / 0.08	50 / 0.08	51 / 0.08	52 / 0.08	53 / 0.08	54 / 0.08	56 / 0.08	59 / 0.08	-	-	65 / 0.08	66 / 0.08	68 / 0.08	69 / 0.09	70 / 0.09	70 / 0.09
	142,700	75th	7 / 0.19	29 / 0.11	34 / 0.09	41 / 0.08	49 / 0.08	53 / 0.08	54 / 0.08	56 / 0.08	58 / 0.08	58 / 0.08	-	-	-	-	-	-	-	-	73 / 0.1	74 / 0.1	75 / 0.1	75 / 0.1
	160,200	80th	10 / 0.17	34 / 0.1	40 / 0.09	48 / 0.08	55 / 0.08	59 / 0.08	60 / 0.08	63 / 0.08	-	-	-	-	-	-	-	-	-	-	-	80 / 0.11	80 / 0.11	80 / 0.11
	182,500	85th	10 / 0.17	40 / 0.09	49 / 0.08	56 / 0.08	65 / 0.08	68 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.13	85 / 0.13
	214,800	90th	12 / 0.16	47 / 0.08	56 / 0.08	60 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.07	56 / 0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Mean Squared Error Results – Model Period G (2000-2016)

Table 141. Percent Drought Prediction and MSE of Drought Scenario 1 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 1			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	7,300	0th	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04	0 / 0.04
	18,100	5th	0 / 0.04	3 / 0.06	4 / 0.06	4 / 0.06	4 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06	5 / 0.06
	24,600	10th	3 / 0.07	5 / 0.06	6 / 0.06	6 / 0.06	7 / 0.06	8 / 0.06	8 / 0.06	8 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06
	28,600	15th	4 / 0.06	5 / 0.06	7 / 0.06	7 / 0.06	9 / 0.06	10 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	13 / 0.07	14 / 0.06	14 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06
	33,000	20th	4 / 0.06	6 / 0.06	7 / 0.06	9 / 0.06	11 / 0.06	13 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	17 / 0.06	17 / 0.06	18 / 0.06	19 / 0.06	19 / 0.06	19 / 0.06	19 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06
	36,300	25th	4 / 0.06	6 / 0.06	9 / 0.06	11 / 0.06	12 / 0.06	15 / 0.05	16 / 0.06	16 / 0.06	17 / 0.06	17 / 0.06	19 / 0.06	20 / 0.06	21 / 0.06	22 / 0.06	23 / 0.06	23 / 0.06	24 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06
	39,700	30th	4 / 0.06	7 / 0.06	10 / 0.06	12 / 0.06	15 / 0.05	18 / 0.05	19 / 0.05	20 / 0.06	20 / 0.06	21 / 0.06	23 / 0.06	23 / 0.06	25 / 0.06	26 / 0.06	26 / 0.06	27 / 0.06	28 / 0.06	29 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06
	44,000	35th	4 / 0.06	9 / 0.06	11 / 0.06	14 / 0.06	17 / 0.06	20 / 0.05	22 / 0.05	22 / 0.06	23 / 0.06	24 / 0.06	26 / 0.06	27 / 0.06	28 / 0.06	29 / 0.06	31 / 0.06	32 / 0.06	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	48,500	40th	4 / 0.06	10 / 0.06	12 / 0.06	16 / 0.06	19 / 0.06	22 / 0.05	24 / 0.06	24 / 0.06	25 / 0.06	26 / 0.06	28 / 0.06	30 / 0.06	31 / 0.06	33 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.05	40 / 0.05	40 / 0.05	40 / 0.05
	54,800	45th	4 / 0.06	14 / 0.07	17 / 0.07	21 / 0.06	23 / 0.06	26 / 0.06	28 / 0.06	29 / 0.06	29 / 0.06	30 / 0.06	32 / 0.06	33 / 0.06	36 / 0.06	37 / 0.05	39 / 0.05	40 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	58,200	50th	4 / 0.06	15 / 0.07	17 / 0.07	23 / 0.06	24 / 0.06	29 / 0.05	32 / 0.06	33 / 0.06	35 / 0.05	35 / 0.05	36 / 0.06	37 / 0.06	39 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	63,400	55th	7 / 0.06	16 / 0.07	19 / 0.06	24 / 0.06	28 / 0.06	33 / 0.05	35 / 0.05	36 / 0.05	38 / 0.05	38 / 0.05	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.04	55 / 0.04	55 / 0.04
	67,800	60th	7 / 0.06	22 / 0.07	25 / 0.07	30 / 0.06	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	72,200	65th	7 / 0.06	22 / 0.07	25 / 0.07	33 / 0.06	37 / 0.06	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.03	65 / 0.03	65 / 0.03
	79,200	70th	7 / 0.06	24 / 0.07	27 / 0.06	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.03	69 / 0.03	70 / 0.03	70 / 0.03
	85,500	75th	7 / 0.06	29 / 0.06	34 / 0.06	41 / 0.05	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.03	74 / 0.03	75 / 0.03	75 / 0.03
	96,200	80th	10 / 0.06	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.03	80 / 0.03	80 / 0.03
	107,800	85th	10 / 0.06	40 / 0.06	49 / 0.05	56 / 0.04	65 / 0.04	68 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.03	85 / 0.03
	120,800	90th	12 / 0.05	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	171,000	95th	32 / 0.05	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	317,000	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 142. Percent Drought Prediction and MSE of Drought Scenario 3 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 3			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03
	15,300	5th	0 / 0.03	3 / 0.06	4 / 0.06	4 / 0.06	4 / 0.06	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05
	30,700	10th	3 / 0.06	5 / 0.06	6 / 0.06	6 / 0.06	7 / 0.06	8 / 0.06	8 / 0.06	8 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06
	40,400	15th	4 / 0.06	5 / 0.06	7 / 0.06	7 / 0.06	9 / 0.06	10 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	13 / 0.06	14 / 0.06	14 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06
	45,800	20th	4 / 0.06	6 / 0.06	7 / 0.06	9 / 0.06	11 / 0.06	13 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	17 / 0.06	17 / 0.06	18 / 0.06	19 / 0.05	19 / 0.05	19 / 0.05	19 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05
	52,900	25th	4 / 0.06	6 / 0.06	9 / 0.06	11 / 0.06	12 / 0.05	15 / 0.05	16 / 0.06	16 / 0.06	17 / 0.05	17 / 0.06	19 / 0.05	20 / 0.05	21 / 0.05	22 / 0.05	23 / 0.05	23 / 0.05	24 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05
	59,900	30th	4 / 0.06	7 / 0.06	10 / 0.06	12 / 0.05	15 / 0.05	18 / 0.05	19 / 0.05	20 / 0.05	20 / 0.05	21 / 0.05	23 / 0.05	23 / 0.05	25 / 0.05	26 / 0.05	26 / 0.05	27 / 0.05	28 / 0.05	29 / 0.05	30 / 0.05	30 / 0.05	30 / 0.05	30 / 0.05
	65,100	35th	4 / 0.06	9 / 0.06	11 / 0.06	14 / 0.06	17 / 0.05	20 / 0.05	22 / 0.05	22 / 0.05	23 / 0.05	24 / 0.05	26 / 0.05	27 / 0.05	28 / 0.05	29 / 0.05	31 / 0.05	32 / 0.05	33 / 0.05	34 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05
	70,700	40th	4 / 0.06	10 / 0.06	12 / 0.06	16 / 0.06	19 / 0.05	22 / 0.05	24 / 0.05	24 / 0.05	25 / 0.05	26 / 0.05	28 / 0.05	30 / 0.05	31 / 0.05	33 / 0.05	35 / 0.05	36 / 0.05	37 / 0.05	38 / 0.05	39 / 0.05	40 / 0.05	40 / 0.05	40 / 0.05
	79,100	45th	4 / 0.06	14 / 0.06	17 / 0.06	21 / 0.06	23 / 0.06	26 / 0.06	28 / 0.06	29 / 0.06	29 / 0.06	30 / 0.06	32 / 0.05	33 / 0.05	36 / 0.05	37 / 0.05	39 / 0.05	40 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05
	89,100	50th	4 / 0.06	15 / 0.06	17 / 0.06	23 / 0.06	24 / 0.06	29 / 0.05	32 / 0.06	33 / 0.05	35 / 0.05	35 / 0.05	36 / 0.05	37 / 0.05	39 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.06	16 / 0.06	19 / 0.06	24 / 0.06	28 / 0.06	33 / 0.05	35 / 0.05	36 / 0.05	38 / 0.05	38 / 0.05	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.06	22 / 0.07	25 / 0.07	30 / 0.06	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.05	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.06	22 / 0.07	25 / 0.07	33 / 0.06	37 / 0.06	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.06	24 / 0.07	27 / 0.07	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.06	29 / 0.06	34 / 0.06	41 / 0.05	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.06	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.05	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.04	80 / 0.04	80 / 0.04
	182,500	85th	10 / 0.06	40 / 0.06	49 / 0.05	56 / 0.04	65 / 0.04	68 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.03	85 / 0.03
	214,800	90th	12 / 0.06	47 / 0.05	56 / 0.04	60 / 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.05	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 143. Percent Drought Prediction and MSE of Drought Scenario 4 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 4			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03	0 / 0.03
	15,300	5th	0 / 0.03	3 / 0.06	4 / 0.06	4 / 0.06	4 / 0.06	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05
	30,700	10th	3 / 0.06	5 / 0.06	6 / 0.06	6 / 0.06	7 / 0.06	8 / 0.06	8 / 0.06	8 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	9 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06	10 / 0.06
	40,400	15th	4 / 0.06	5 / 0.06	7 / 0.06	7 / 0.06	9 / 0.06	10 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	12 / 0.06	13 / 0.06	14 / 0.06	14 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06
	45,800	20th	4 / 0.06	6 / 0.06	7 / 0.06	9 / 0.06	11 / 0.06	13 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	17 / 0.06	17 / 0.06	18 / 0.06	19 / 0.06	19 / 0.06	19 / 0.06	19 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06	20 / 0.06
	52,900	25th	4 / 0.06	6 / 0.06	9 / 0.06	11 / 0.06	12 / 0.05	15 / 0.05	16 / 0.06	16 / 0.06	17 / 0.06	17 / 0.06	19 / 0.06	20 / 0.06	21 / 0.06	22 / 0.06	23 / 0.06	23 / 0.06	24 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06	25 / 0.06
	59,900	30th	4 / 0.06	7 / 0.06	10 / 0.06	12 / 0.05	15 / 0.05	18 / 0.05	19 / 0.05	20 / 0.06	20 / 0.06	21 / 0.06	23 / 0.06	23 / 0.06	25 / 0.06	26 / 0.06	26 / 0.06	27 / 0.06	28 / 0.06	29 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06
	65,100	35th	4 / 0.06	9 / 0.06	11 / 0.06	14 / 0.06	17 / 0.05	20 / 0.05	22 / 0.06	22 / 0.06	23 / 0.06	24 / 0.06	26 / 0.06	27 / 0.06	28 / 0.06	29 / 0.06	31 / 0.06	32 / 0.06	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.06	10 / 0.06	12 / 0.06	16 / 0.06	19 / 0.05	22 / 0.05	24 / 0.06	24 / 0.06	25 / 0.06	26 / 0.06	28 / 0.06	30 / 0.06	31 / 0.06	33 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.05	40 / 0.05	
	79,100	45th	4 / 0.06	14 / 0.06	17 / 0.06	21 / 0.06	23 / 0.06	26 / 0.06	28 / 0.06	29 / 0.06	29 / 0.06	30 / 0.06	32 / 0.06	33 / 0.06	36 / 0.06	37 / 0.06	39 / 0.05	40 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	
	89,100	50th	4 / 0.06	15 / 0.06	17 / 0.06	23 / 0.06	24 / 0.06	29 / 0.06	32 / 0.06	33 / 0.06	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	
	101,500	55th	7 / 0.06	16 / 0.06	19 / 0.06	24 / 0.06	28 / 0.06	33 / 0.05	35 / 0.06	36 / 0.06	38 / 0.05	38 / 0.05	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.04	55 / 0.04	
	110,000	60th	7 / 0.06	22 / 0.07	25 / 0.07	30 / 0.06	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	
	122,500	65th	7 / 0.06	22 / 0.07	25 / 0.07	33 / 0.06	37 / 0.06	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	
	132,400	70th	7 / 0.06	24 / 0.07	27 / 0.07	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.03	66 / 0.03	68 / 0.03	69 / 0.03	70 / 0.04	
	142,700	75th	7 / 0.06	29 / 0.06	34 / 0.06	41 / 0.05	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.03	74 / 0.03	75 / 0.03	
	160,200	80th	10 / 0.06	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.03	80 / 0.03	
	182,500	85th	10 / 0.06	40 / 0.06	49 / 0.05	56 / 0.04	65 / 0.03	68 / 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.03	
	214,800	90th	12 / 0.06	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	256,200	95th	32 / 0.04	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 144. Percent Drought Prediction and MSE of Drought Scenario 6 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 6			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08	0 / 0.08
	15,300	5th	0 / 0.08	3 / 0.09	4 / 0.09	4 / 0.09	4 / 0.09	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08
	30,700	10th	3 / 0.09	5 / 0.09	6 / 0.09	6 / 0.09	7 / 0.09	8 / 0.09	8 / 0.09	8 / 0.09	9 / 0.09	9 / 0.09	9 / 0.09	9 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09
	40,400	15th	4 / 0.09	5 / 0.09	7 / 0.09	7 / 0.09	9 / 0.08	10 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	13 / 0.08	14 / 0.08	14 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08
	45,800	20th	4 / 0.09	6 / 0.09	7 / 0.09	9 / 0.08	11 / 0.08	13 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	17 / 0.08	17 / 0.08	18 / 0.07	19 / 0.07	19 / 0.07	19 / 0.07	19 / 0.07	20 / 0.07	20 / 0.07	20 / 0.07	20 / 0.07	20 / 0.07
	52,900	25th	4 / 0.09	6 / 0.09	9 / 0.08	11 / 0.08	12 / 0.08	15 / 0.07	16 / 0.07	16 / 0.08	17 / 0.07	17 / 0.08	19 / 0.07	20 / 0.07	21 / 0.07	22 / 0.07	23 / 0.07	23 / 0.07	24 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07
	59,900	30th	4 / 0.09	7 / 0.08	10 / 0.08	12 / 0.08	15 / 0.07	18 / 0.07	19 / 0.07	20 / 0.07	20 / 0.07	21 / 0.07	23 / 0.07	23 / 0.07	25 / 0.07	26 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	30 / 0.06	30 / 0.06	30 / 0.06	30 / 0.06
	65,100	35th	4 / 0.09	9 / 0.08	11 / 0.08	14 / 0.08	17 / 0.07	20 / 0.07	22 / 0.07	22 / 0.07	23 / 0.07	24 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	31 / 0.06	32 / 0.07	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.09	10 / 0.08	12 / 0.08	16 / 0.08	19 / 0.07	22 / 0.07	24 / 0.07	24 / 0.07	25 / 0.07	26 / 0.07	28 / 0.07	30 / 0.07	31 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.09	14 / 0.09	17 / 0.08	21 / 0.08	23 / 0.07	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.09	15 / 0.09	17 / 0.08	23 / 0.08	24 / 0.07	29 / 0.07	32 / 0.06	33 / 0.06	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.08	16 / 0.08	19 / 0.08	24 / 0.07	28 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.06	42 / 0.06	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.08	22 / 0.08	25 / 0.08	30 / 0.07	33 / 0.07	40 / 0.06	42 / 0.06	44 / 0.05	44 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.08	22 / 0.08	25 / 0.08	33 / 0.07	37 / 0.06	42 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.08	24 / 0.08	27 / 0.07	34 / 0.06	40 / 0.06	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.03	66 / 0.03	68 / 0.04	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.08	29 / 0.07	34 / 0.06	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.03	74 / 0.03	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.08	34 / 0.06	40 / 0.06	48 / 0.05	55 / 0.05	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.04	80 / 0.04	80 / 0.04
	182,500	85th	10 / 0.08	40 / 0.06	49 / 0.05	56 / 0.04	65 / 0.04	68 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.05	85 / 0.05
	214,800	90th	12 / 0.07	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.05	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 145. Percent Drought Prediction and MSE of Drought Scenario 7 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 7			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02
	15,300	5th	0 / 0.02	3 / 0.05	4 / 0.05	4 / 0.05	4 / 0.05	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04	5 / 0.04
	30,700	10th	3 / 0.05	5 / 0.05	6 / 0.05	6 / 0.05	7 / 0.05	8 / 0.05	8 / 0.05	8 / 0.05	9 / 0.05	9 / 0.05	9 / 0.05	9 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05
	40,400	15th	4 / 0.05	5 / 0.05	7 / 0.05	7 / 0.05	9 / 0.05	10 / 0.05	12 / 0.05	12 / 0.05	12 / 0.05	12 / 0.05	13 / 0.06	14 / 0.05	14 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.06	15 / 0.06	15 / 0.06
	45,800	20th	4 / 0.05	6 / 0.05	7 / 0.05	9 / 0.05	11 / 0.05	13 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	17 / 0.05	17 / 0.05	18 / 0.05	19 / 0.05	19 / 0.05	19 / 0.05	19 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05
	52,900	25th	4 / 0.05	6 / 0.05	9 / 0.05	11 / 0.05	12 / 0.05	15 / 0.05	16 / 0.05	16 / 0.05	17 / 0.05	17 / 0.05	19 / 0.05	20 / 0.05	21 / 0.05	22 / 0.05	23 / 0.05	23 / 0.05	24 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05
	59,900	30th	4 / 0.05	7 / 0.05	10 / 0.05	12 / 0.05	15 / 0.04	18 / 0.04	19 / 0.05	20 / 0.05	20 / 0.05	21 / 0.05	23 / 0.05	23 / 0.05	25 / 0.05	26 / 0.05	26 / 0.05	27 / 0.05	28 / 0.05	29 / 0.05	30 / 0.05	30 / 0.05	30 / 0.05	30 / 0.05
	65,100	35th	4 / 0.05	9 / 0.05	11 / 0.05	14 / 0.05	17 / 0.05	20 / 0.05	22 / 0.05	22 / 0.05	23 / 0.05	24 / 0.05	26 / 0.05	27 / 0.05	28 / 0.05	29 / 0.05	31 / 0.05	32 / 0.05	33 / 0.05	34 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05
	70,700	40th	4 / 0.05	10 / 0.05	12 / 0.05	16 / 0.05	19 / 0.05	22 / 0.05	24 / 0.05	24 / 0.05	25 / 0.05	26 / 0.05	28 / 0.05	30 / 0.06	31 / 0.06	33 / 0.05	35 / 0.05	36 / 0.05	37 / 0.05	38 / 0.05	39 / 0.05	40 / 0.05	40 / 0.05	40 / 0.05
	79,100	45th	4 / 0.05	14 / 0.06	17 / 0.06	21 / 0.05	23 / 0.05	26 / 0.05	28 / 0.05	29 / 0.05	29 / 0.05	30 / 0.05	32 / 0.05	33 / 0.05	36 / 0.05	37 / 0.05	39 / 0.05	40 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05
	89,100	50th	4 / 0.05	15 / 0.06	17 / 0.06	23 / 0.05	24 / 0.05	29 / 0.05	32 / 0.05	33 / 0.05	35 / 0.05	35 / 0.05	36 / 0.05	37 / 0.05	39 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.05	16 / 0.06	19 / 0.06	24 / 0.05	28 / 0.05	33 / 0.05	35 / 0.05	36 / 0.05	38 / 0.05	38 / 0.05	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.05	22 / 0.07	25 / 0.06	30 / 0.06	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.05	22 / 0.07	25 / 0.06	33 / 0.06	37 / 0.05	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.03	63 / 0.03	64 / 0.03	65 / 0.03	65 / 0.03
	132,400	70th	7 / 0.05	24 / 0.06	27 / 0.06	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.03	66 / 0.03	68 / 0.03	69 / 0.03	70 / 0.03	70 / 0.03
	142,700	75th	7 / 0.05	29 / 0.06	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.05	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.03	74 / 0.03	75 / 0.02	75 / 0.02
	160,200	80th	10 / 0.04	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.02	80 / 0.02	80 / 0.02
	182,500	85th	10 / 0.04	40 / 0.06	49 / 0.05	56 / 0.04	65 / 0.03	68 / 0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.01	85 / 0.01
	214,800	90th	12 / 0.04	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.03	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 146. Percent Drought Prediction and MSE of Drought Scenario 8 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 8			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02	0 / 0.02
	15,300	5th	0 / 0.02	3 / 0.05	4 / 0.05	4 / 0.05	4 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05	5 / 0.05
	30,700	10th	3 / 0.05	5 / 0.05	6 / 0.05	6 / 0.05	7 / 0.05	8 / 0.05	8 / 0.05	8 / 0.05	9 / 0.05	9 / 0.05	9 / 0.05	9 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05	10 / 0.05
	40,400	15th	4 / 0.05	5 / 0.05	7 / 0.05	7 / 0.05	9 / 0.05	10 / 0.05	12 / 0.05	12 / 0.05	12 / 0.05	12 / 0.05	13 / 0.06	14 / 0.06	14 / 0.06	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06	15 / 0.06
	45,800	20th	4 / 0.05	6 / 0.05	7 / 0.05	9 / 0.05	11 / 0.05	13 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	15 / 0.05	17 / 0.05	17 / 0.05	18 / 0.05	19 / 0.05	19 / 0.05	19 / 0.05	19 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05	20 / 0.05
	52,900	25th	4 / 0.05	6 / 0.05	9 / 0.05	11 / 0.05	12 / 0.05	15 / 0.05	16 / 0.05	16 / 0.05	17 / 0.05	17 / 0.05	19 / 0.05	20 / 0.05	21 / 0.05	22 / 0.05	23 / 0.05	23 / 0.05	24 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05	25 / 0.05
	59,900	30th	4 / 0.05	7 / 0.05	10 / 0.05	12 / 0.05	15 / 0.05	18 / 0.05	19 / 0.05	20 / 0.05	20 / 0.05	21 / 0.05	23 / 0.05	23 / 0.05	25 / 0.05	26 / 0.05	26 / 0.05	27 / 0.05	28 / 0.05	29 / 0.05	30 / 0.05	30 / 0.05	30 / 0.05	30 / 0.05
	65,100	35th	4 / 0.05	9 / 0.05	11 / 0.05	14 / 0.05	17 / 0.05	20 / 0.05	22 / 0.05	22 / 0.05	23 / 0.05	24 / 0.05	26 / 0.05	27 / 0.05	28 / 0.05	29 / 0.05	31 / 0.05	32 / 0.05	33 / 0.05	34 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05	35 / 0.05
	70,700	40th	4 / 0.05	10 / 0.05	12 / 0.05	16 / 0.05	19 / 0.05	22 / 0.05	24 / 0.05	24 / 0.05	25 / 0.05	26 / 0.05	28 / 0.05	30 / 0.06	31 / 0.06	33 / 0.05	35 / 0.05	36 / 0.05	37 / 0.05	38 / 0.05	39 / 0.05	40 / 0.05	40 / 0.05	40 / 0.05
	79,100	45th	4 / 0.05	14 / 0.06	17 / 0.06	21 / 0.05	23 / 0.05	26 / 0.05	28 / 0.05	29 / 0.05	29 / 0.05	30 / 0.05	32 / 0.05	33 / 0.06	36 / 0.05	37 / 0.05	39 / 0.05	40 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05
	89,100	50th	4 / 0.05	15 / 0.06	17 / 0.06	23 / 0.05	24 / 0.05	29 / 0.05	32 / 0.05	33 / 0.05	35 / 0.05	35 / 0.05	36 / 0.05	37 / 0.05	39 / 0.05	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.05	16 / 0.06	19 / 0.06	24 / 0.05	28 / 0.05	33 / 0.05	35 / 0.05	36 / 0.05	38 / 0.05	38 / 0.05	39 / 0.05	41 / 0.05	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.05	22 / 0.07	25 / 0.06	30 / 0.06	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.05	22 / 0.07	25 / 0.06	33 / 0.06	37 / 0.05	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.03	63 / 0.04	64 / 0.03	65 / 0.03	65 / 0.03
	132,400	70th	7 / 0.05	24 / 0.06	27 / 0.06	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.03	66 / 0.03	68 / 0.03	69 / 0.03	70 / 0.03	70 / 0.03
	142,700	75th	7 / 0.05	29 / 0.06	34 / 0.05	41 / 0.05	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.03	74 / 0.03	75 / 0.02	75 / 0.02
	160,200	80th	10 / 0.05	34 / 0.05	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.02	80 / 0.02	80 / 0.02
	182,500	85th	10 / 0.04	40 / 0.06	49 / 0.05	56 / 0.04	65 / 0.03	68 / 0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.01	85 / 0.01
	214,800	90th	12 / 0.04	47 / 0.05	56 / 0.04	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.03	56 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 147. Percent Drought Prediction and MSE of Drought Scenario 9 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 9			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06	0 / 0.06
	15,300	5th	0 / 0.06	3 / 0.08	4 / 0.08	4 / 0.08	4 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08	5 / 0.08
	30,700	10th	3 / 0.08	5 / 0.08	6 / 0.08	6 / 0.08	7 / 0.08	8 / 0.08	8 / 0.08	8 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	9 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08	10 / 0.08
	40,400	15th	4 / 0.08	5 / 0.08	7 / 0.08	7 / 0.08	9 / 0.08	10 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	12 / 0.08	13 / 0.08	14 / 0.08	14 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08	15 / 0.08
	45,800	20th	4 / 0.08	6 / 0.08	7 / 0.08	9 / 0.08	11 / 0.07	13 / 0.07	15 / 0.07	15 / 0.08	15 / 0.08	15 / 0.08	17 / 0.08	17 / 0.08	18 / 0.08	19 / 0.07	19 / 0.07	19 / 0.07	19 / 0.07	20 / 0.07	20 / 0.07	20 / 0.07	20 / 0.07	20 / 0.07
	52,900	25th	4 / 0.08	6 / 0.08	9 / 0.08	11 / 0.07	12 / 0.07	15 / 0.07	16 / 0.07	16 / 0.07	17 / 0.07	17 / 0.07	19 / 0.07	20 / 0.07	21 / 0.07	22 / 0.07	23 / 0.07	23 / 0.07	24 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07	25 / 0.07
	59,900	30th	4 / 0.08	7 / 0.08	10 / 0.08	12 / 0.07	15 / 0.07	18 / 0.07	19 / 0.07	20 / 0.07	20 / 0.07	21 / 0.07	23 / 0.07	23 / 0.07	25 / 0.07	26 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	65,100	35th	4 / 0.08	9 / 0.08	11 / 0.08	14 / 0.07	17 / 0.07	20 / 0.07	22 / 0.07	22 / 0.07	23 / 0.07	24 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	31 / 0.07	32 / 0.07	33 / 0.06	34 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06	35 / 0.06
	70,700	40th	4 / 0.08	10 / 0.08	12 / 0.08	16 / 0.07	19 / 0.07	22 / 0.07	24 / 0.07	24 / 0.07	25 / 0.07	26 / 0.07	28 / 0.07	30 / 0.07	31 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.08	14 / 0.08	17 / 0.08	21 / 0.07	23 / 0.07	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.08	15 / 0.08	17 / 0.08	23 / 0.07	24 / 0.07	29 / 0.07	32 / 0.07	33 / 0.06	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.08	16 / 0.08	19 / 0.08	24 / 0.07	28 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.06	42 / 0.06	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.08	22 / 0.08	25 / 0.08	30 / 0.07	33 / 0.07	40 / 0.06	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.08	22 / 0.08	25 / 0.08	33 / 0.07	37 / 0.06	42 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.03	62 / 0.03	63 / 0.03	64 / 0.03	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.08	24 / 0.08	27 / 0.08	34 / 0.07	40 / 0.06	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.03	66 / 0.03	68 / 0.03	69 / 0.03	70 / 0.03	70 / 0.03
	142,700	75th	7 / 0.08	29 / 0.07	34 / 0.07	41 / 0.06	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.03	74 / 0.03	75 / 0.03	75 / 0.03
	160,200	80th	10 / 0.07	34 / 0.06	40 / 0.06	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.03	-	-	-	-	-	-	-	-	-	-	-	80 / 0.03	80 / 0.03	80 / 0.03
	182,500	85th	10 / 0.07	40 / 0.05	49 / 0.05	56 / 0.04	65 / 0.04	68 / 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.04	85 / 0.04
	214,800	90th	12 / 0.06	47 / 0.05	56 / 0.05	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.04	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 148. Percent Drought Prediction and MSE of Drought Scenario 10 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 10			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07	0 / 0.07
	15,300	5th	0 / 0.07	3 / 0.09	4 / 0.09	4 / 0.09	4 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09	5 / 0.09
	30,700	10th	3 / 0.1	5 / 0.09	6 / 0.09	6 / 0.09	7 / 0.09	8 / 0.09	8 / 0.09	8 / 0.09	9 / 0.09	9 / 0.09	9 / 0.09	9 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09	10 / 0.09
	40,400	15th	4 / 0.1	5 / 0.09	7 / 0.09	7 / 0.09	9 / 0.09	10 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	12 / 0.09	13 / 0.09	14 / 0.09	14 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09	15 / 0.09
	45,800	20th	4 / 0.1	6 / 0.09	7 / 0.09	9 / 0.09	11 / 0.09	13 / 0.08	15 / 0.08	15 / 0.09	15 / 0.09	15 / 0.09	17 / 0.09	17 / 0.09	18 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08	20 / 0.08
	52,900	25th	4 / 0.1	6 / 0.09	9 / 0.09	11 / 0.09	12 / 0.08	15 / 0.08	16 / 0.08	16 / 0.08	17 / 0.08	17 / 0.08	19 / 0.08	20 / 0.08	21 / 0.08	22 / 0.08	23 / 0.08	23 / 0.08	24 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.1	7 / 0.09	10 / 0.09	12 / 0.08	15 / 0.08	18 / 0.08	19 / 0.08	20 / 0.08	20 / 0.08	21 / 0.08	23 / 0.08	23 / 0.08	25 / 0.08	26 / 0.07	26 / 0.07	27 / 0.07	28 / 0.07	29 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07	30 / 0.07
	65,100	35th	4 / 0.1	9 / 0.09	11 / 0.09	14 / 0.08	17 / 0.08	20 / 0.08	22 / 0.08	22 / 0.08	23 / 0.08	24 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.07	31 / 0.07	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.1	10 / 0.09	12 / 0.09	16 / 0.08	19 / 0.08	22 / 0.08	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.08	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.1	14 / 0.09	17 / 0.09	21 / 0.08	23 / 0.08	26 / 0.08	28 / 0.08	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.1	15 / 0.09	17 / 0.09	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.06	35 / 0.07	36 / 0.07	37 / 0.06	39 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.09	16 / 0.09	19 / 0.09	24 / 0.08	28 / 0.07	33 / 0.07	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.06	42 / 0.06	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.04	55 / 0.04	55 / 0.04
	110,000	60th	7 / 0.09	22 / 0.09	25 / 0.08	30 / 0.08	33 / 0.07	40 / 0.06	42 / 0.06	44 / 0.06	44 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.09	22 / 0.09	25 / 0.08	33 / 0.07	37 / 0.06	42 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.04	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.09	24 / 0.08	27 / 0.08	34 / 0.07	40 / 0.06	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.04	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.03	66 / 0.03	68 / 0.03	69 / 0.04	70 / 0.04	70 / 0.04
	142,700	75th	7 / 0.09	29 / 0.07	34 / 0.07	41 / 0.06	49 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.03	74 / 0.03	75 / 0.04	75 / 0.04
	160,200	80th	10 / 0.08	34 / 0.07	40 / 0.06	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.03	-	-	-	-	-	-	-	-	-	-	-	80 / 0.04	80 / 0.04	80 / 0.04
	182,500	85th	10 / 0.08	40 / 0.05	49 / 0.05	56 / 0.04	65 / 0.04	68 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.05	85 / 0.05
	214,800	90th	12 / 0.08	47 / 0.05	56 / 0.05	60 / 0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.05	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 149. Percent Drought Prediction and MSE of Drought Scenario 11 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 11			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09	0 / 0.09
	15,300	5th	0 / 0.09	3 / 0.11	4 / 0.11	4 / 0.11	4 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11	5 / 0.11
	30,700	10th	3 / 0.12	5 / 0.11	6 / 0.11	6 / 0.11	7 / 0.11	8 / 0.11	8 / 0.11	8 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	9 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11	10 / 0.11
	40,400	15th	4 / 0.11	5 / 0.11	7 / 0.11	7 / 0.11	9 / 0.1	10 / 0.1	12 / 0.1	12 / 0.1	12 / 0.1	12 / 0.11	13 / 0.11	14 / 0.1	14 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1
	45,800	20th	4 / 0.11	6 / 0.11	7 / 0.11	9 / 0.1	11 / 0.1	13 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	15 / 0.1	17 / 0.1	17 / 0.1	18 / 0.1	19 / 0.09	19 / 0.09	19 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09	20 / 0.09
	52,900	25th	4 / 0.11	6 / 0.11	9 / 0.1	11 / 0.1	12 / 0.1	15 / 0.09	16 / 0.1	16 / 0.1	17 / 0.1	17 / 0.1	19 / 0.1	20 / 0.09	21 / 0.09	22 / 0.09	23 / 0.09	23 / 0.09	24 / 0.09	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08	25 / 0.08
	59,900	30th	4 / 0.11	7 / 0.11	10 / 0.1	12 / 0.1	15 / 0.09	18 / 0.09	19 / 0.09	20 / 0.09	20 / 0.09	21 / 0.09	23 / 0.09	23 / 0.09	25 / 0.08	26 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08
	65,100	35th	4 / 0.11	9 / 0.1	11 / 0.1	14 / 0.1	17 / 0.09	20 / 0.09	22 / 0.09	22 / 0.09	23 / 0.09	24 / 0.08	26 / 0.08	27 / 0.08	28 / 0.08	29 / 0.08	31 / 0.07	32 / 0.07	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.11	10 / 0.1	12 / 0.1	16 / 0.09	19 / 0.09	22 / 0.08	24 / 0.08	24 / 0.08	25 / 0.08	26 / 0.08	28 / 0.08	30 / 0.07	31 / 0.07	33 / 0.07	35 / 0.06	36 / 0.06	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.11	14 / 0.08	17 / 0.08	21 / 0.07	23 / 0.07	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.11	15 / 0.08	17 / 0.08	23 / 0.07	24 / 0.07	29 / 0.06	32 / 0.06	33 / 0.06	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.05	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.11	16 / 0.08	19 / 0.08	24 / 0.07	28 / 0.06	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.06	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	55 / 0.05
	110,000	60th	7 / 0.11	22 / 0.08	25 / 0.07	30 / 0.07	33 / 0.06	40 / 0.06	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.04	60 / 0.04	60 / 0.04
	122,500	65th	7 / 0.11	22 / 0.08	25 / 0.07	33 / 0.06	37 / 0.06	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.04	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.04	64 / 0.04	65 / 0.04	65 / 0.04
	132,400	70th	7 / 0.11	24 / 0.07	27 / 0.07	34 / 0.06	40 / 0.06	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.04	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.04	69 / 0.04	70 / 0.05	70 / 0.05
	142,700	75th	7 / 0.11	29 / 0.07	34 / 0.06	41 / 0.05	49 / 0.05	53 / 0.05	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.04	74 / 0.04	75 / 0.05	75 / 0.05
	160,200	80th	10 / 0.1	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.05	80 / 0.05	80 / 0.05
	182,500	85th	10 / 0.1	40 / 0.05	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.06	85 / 0.06
	214,800	90th	12 / 0.09	47 / 0.05	56 / 0.05	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.06	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 150. Percent Drought Prediction and MSE of Drought Scenario 12 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 12			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11	0 / 0.11
	15,300	5th	0 / 0.11	3 / 0.13	4 / 0.12	4 / 0.12	4 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12	5 / 0.12
	30,700	10th	3 / 0.13	5 / 0.13	6 / 0.12	6 / 0.13	7 / 0.12	8 / 0.12	8 / 0.12	8 / 0.12	9 / 0.12	9 / 0.12	9 / 0.12	9 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12	10 / 0.12
	40,400	15th	4 / 0.13	5 / 0.13	7 / 0.12	7 / 0.12	9 / 0.12	10 / 0.12	12 / 0.12	12 / 0.12	12 / 0.12	12 / 0.12	13 / 0.12	14 / 0.12	14 / 0.12	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11
	45,800	20th	4 / 0.13	6 / 0.12	7 / 0.12	9 / 0.12	11 / 0.11	13 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	15 / 0.11	17 / 0.11	17 / 0.11	18 / 0.11	19 / 0.1	19 / 0.1	19 / 0.1	19 / 0.1	20 / 0.1	20 / 0.1	20 / 0.1	20 / 0.1
	52,900	25th	4 / 0.13	6 / 0.12	9 / 0.12	11 / 0.11	12 / 0.11	15 / 0.1	16 / 0.11	16 / 0.11	17 / 0.11	17 / 0.11	19 / 0.1	20 / 0.1	21 / 0.1	22 / 0.1	23 / 0.09	23 / 0.09	24 / 0.09	25 / 0.09	25 / 0.09	25 / 0.09	25 / 0.09
	59,900	30th	4 / 0.13	7 / 0.12	10 / 0.11	12 / 0.11	15 / 0.1	18 / 0.1	19 / 0.1	20 / 0.1	20 / 0.1	21 / 0.1	23 / 0.1	23 / 0.1	25 / 0.09	26 / 0.09	26 / 0.09	27 / 0.09	28 / 0.09	29 / 0.08	30 / 0.08	30 / 0.08	30 / 0.08
	65,100	35th	4 / 0.13	9 / 0.11	11 / 0.11	14 / 0.11	17 / 0.1	20 / 0.1	22 / 0.09	22 / 0.1	23 / 0.09	24 / 0.09	26 / 0.09	27 / 0.09	28 / 0.08	29 / 0.08	31 / 0.08	32 / 0.08	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.13	10 / 0.11	12 / 0.11	16 / 0.1	19 / 0.09	22 / 0.09	24 / 0.09	24 / 0.09	25 / 0.09	26 / 0.08	28 / 0.08	30 / 0.08	31 / 0.07	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.13	14 / 0.09	17 / 0.09	21 / 0.08	23 / 0.08	26 / 0.07	28 / 0.07	29 / 0.07	29 / 0.07	30 / 0.07	32 / 0.07	33 / 0.07	36 / 0.06	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.06	44 / 0.05	44 / 0.05	45 / 0.05
	89,100	50th	4 / 0.13	15 / 0.09	17 / 0.09	23 / 0.08	24 / 0.07	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.06	35 / 0.06	36 / 0.06	37 / 0.06	39 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05
	101,500	55th	7 / 0.12	16 / 0.09	19 / 0.08	24 / 0.07	28 / 0.07	33 / 0.06	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.06	42 / 0.05	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05
	110,000	60th	7 / 0.12	22 / 0.08	25 / 0.08	30 / 0.07	33 / 0.07	40 / 0.06	42 / 0.06	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.04	57 / 0.04	58 / 0.04	59 / 0.05	60 / 0.05
	122,500	65th	7 / 0.12	22 / 0.08	25 / 0.08	33 / 0.07	37 / 0.06	42 / 0.06	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.04	58 / 0.04	61 / 0.04	62 / 0.04	63 / 0.05	64 / 0.05	65 / 0.05
	132,400	70th	7 / 0.12	24 / 0.08	27 / 0.07	34 / 0.06	40 / 0.06	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.04	56 / 0.04	59 / 0.04	-	-	65 / 0.04	66 / 0.04	68 / 0.05	69 / 0.05	70 / 0.05
	142,700	75th	7 / 0.12	29 / 0.07	34 / 0.06	41 / 0.06	49 / 0.05	53 / 0.05	54 / 0.04	56 / 0.04	58 / 0.04	58 / 0.04	-	-	-	-	-	-	-	-	73 / 0.05	74 / 0.05	75 / 0.05
	160,200	80th	10 / 0.11	34 / 0.06	40 / 0.06	48 / 0.05	55 / 0.04	59 / 0.04	60 / 0.04	63 / 0.04	-	-	-	-	-	-	-	-	-	-	-	80 / 0.06	80 / 0.06
	182,500	85th	10 / 0.11	40 / 0.05	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.07
	214,800	90th	12 / 0.1	47 / 0.05	56 / 0.05	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.06	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 151. Percent Drought Prediction and MSE of Drought Scenario 13 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

Percent Drought Prediction of Thresholds / MSE of Drought Scenario 13			12-month SPI Thresholds																					
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12	0 / 0.12
	15,300	5th	0 / 0.12	3 / 0.14	4 / 0.14	4 / 0.14	4 / 0.14	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13	5 / 0.13
	30,700	10th	3 / 0.14	5 / 0.14	6 / 0.14	6 / 0.14	7 / 0.13	8 / 0.13	8 / 0.13	8 / 0.13	9 / 0.13	9 / 0.13	9 / 0.13	9 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13	10 / 0.13
	40,400	15th	4 / 0.14	5 / 0.14	7 / 0.13	7 / 0.13	9 / 0.13	10 / 0.13	12 / 0.13	12 / 0.13	12 / 0.13	12 / 0.13	13 / 0.13	14 / 0.13	14 / 0.13	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12
	45,800	20th	4 / 0.14	6 / 0.13	7 / 0.13	9 / 0.13	11 / 0.12	13 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	15 / 0.12	17 / 0.12	17 / 0.12	18 / 0.12	19 / 0.11	19 / 0.11	19 / 0.11	19 / 0.11	20 / 0.11	20 / 0.11	20 / 0.11	20 / 0.11	20 / 0.11
	52,900	25th	4 / 0.14	6 / 0.13	9 / 0.13	11 / 0.12	12 / 0.12	15 / 0.11	16 / 0.12	16 / 0.12	17 / 0.11	17 / 0.12	19 / 0.11	20 / 0.11	21 / 0.11	22 / 0.1	23 / 0.1	23 / 0.1	24 / 0.1	25 / 0.1	25 / 0.1	25 / 0.1	25 / 0.1	25 / 0.1
	59,900	30th	4 / 0.14	7 / 0.13	10 / 0.13	12 / 0.12	15 / 0.11	18 / 0.11	19 / 0.11	20 / 0.11	20 / 0.11	21 / 0.11	23 / 0.1	23 / 0.1	25 / 0.1	26 / 0.09	26 / 0.09	27 / 0.09	28 / 0.09	29 / 0.09	30 / 0.09	30 / 0.09	30 / 0.09	30 / 0.09
	65,100	35th	4 / 0.14	9 / 0.13	11 / 0.12	14 / 0.11	17 / 0.11	20 / 0.1	22 / 0.1	22 / 0.1	23 / 0.1	24 / 0.1	26 / 0.09	27 / 0.09	28 / 0.09	29 / 0.08	31 / 0.08	32 / 0.08	33 / 0.07	34 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07	35 / 0.07
	70,700	40th	4 / 0.14	10 / 0.12	12 / 0.12	16 / 0.11	19 / 0.1	22 / 0.09	24 / 0.09	24 / 0.09	25 / 0.09	26 / 0.09	28 / 0.09	30 / 0.08	31 / 0.08	33 / 0.07	35 / 0.07	36 / 0.07	37 / 0.06	38 / 0.06	39 / 0.06	40 / 0.06	40 / 0.06	40 / 0.06
	79,100	45th	4 / 0.14	14 / 0.1	17 / 0.09	21 / 0.09	23 / 0.08	26 / 0.08	28 / 0.08	29 / 0.08	29 / 0.08	30 / 0.08	32 / 0.07	33 / 0.07	36 / 0.07	37 / 0.06	39 / 0.06	40 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	45 / 0.05
	89,100	50th	4 / 0.14	15 / 0.1	17 / 0.09	23 / 0.08	24 / 0.08	29 / 0.07	32 / 0.07	33 / 0.07	35 / 0.07	35 / 0.07	36 / 0.07	37 / 0.06	39 / 0.06	41 / 0.06	43 / 0.05	44 / 0.05	45 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	50 / 0.05
	101,500	55th	7 / 0.13	16 / 0.09	19 / 0.09	24 / 0.08	28 / 0.07	33 / 0.07	35 / 0.06	36 / 0.06	38 / 0.06	38 / 0.06	39 / 0.06	41 / 0.06	42 / 0.06	44 / 0.05	47 / 0.05	49 / 0.05	49 / 0.05	51 / 0.05	52 / 0.05	54 / 0.05	55 / 0.05	55 / 0.05
	110,000	60th	7 / 0.13	22 / 0.08	25 / 0.07	30 / 0.07	33 / 0.06	40 / 0.05	42 / 0.05	44 / 0.05	44 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	50 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	57 / 0.05	58 / 0.05	59 / 0.05	60 / 0.05	60 / 0.05
	122,500	65th	7 / 0.13	22 / 0.08	25 / 0.07	33 / 0.06	37 / 0.06	42 / 0.05	45 / 0.05	46 / 0.05	47 / 0.05	48 / 0.05	49 / 0.05	50 / 0.05	52 / 0.05	54 / 0.05	57 / 0.05	58 / 0.05	61 / 0.05	62 / 0.05	63 / 0.05	64 / 0.05	65 / 0.05	65 / 0.05
	132,400	70th	7 / 0.13	24 / 0.07	27 / 0.07	34 / 0.06	40 / 0.05	45 / 0.05	48 / 0.05	50 / 0.05	51 / 0.05	52 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	59 / 0.05	-	-	65 / 0.05	66 / 0.05	68 / 0.05	69 / 0.05	70 / 0.06	70 / 0.06
	142,700	75th	7 / 0.13	29 / 0.07	34 / 0.06	41 / 0.05	49 / 0.05	53 / 0.05	54 / 0.05	56 / 0.05	58 / 0.05	58 / 0.05	-	-	-	-	-	-	-	-	73 / 0.06	74 / 0.06	75 / 0.06	75 / 0.06
	160,200	80th	10 / 0.12	34 / 0.06	40 / 0.05	48 / 0.05	55 / 0.05	59 / 0.05	60 / 0.04	63 / 0.05	-	-	-	-	-	-	-	-	-	-	-	80 / 0.07	80 / 0.07	80 / 0.07
	182,500	85th	10 / 0.12	40 / 0.05	49 / 0.05	56 / 0.05	65 / 0.05	68 / 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85 / 0.08	85 / 0.08
	214,800	90th	12 / 0.11	47 / 0.05	56 / 0.05	60 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 0.07	56 / 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Conditional Probably Results

Table 152. Probability of Detection and Success Ratio of Drought Scenario 1 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 1			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	5 / 91	5 / 87	6 / 86	7 / 87	7 / 88	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89
	30,700	10th	5 / 0	7 / 90	9 / 87	9 / 83	11 / 85	11 / 85	12 / 86	12 / 87	13 / 87	13 / 87	13 / 87	14 / 88	15 / 89	15 / 89	15 / 89	15 / 89	15 / 89	15 / 89	15 / 89	15 / 89	15 / 89
	40,400	15th	5 / 0	8 / 91	10 / 89	11 / 85	13 / 86	15 / 86	17 / 86	18 / 87	18 / 87	18 / 87	20 / 87	21 / 87	22 / 88	22 / 88	22 / 88	23 / 88	23 / 88	23 / 88	23 / 88	23 / 88	23 / 88
	45,800	20th	5 / 0	9 / 92	12 / 90	14 / 88	16 / 89	20 / 89	23 / 89	23 / 89	23 / 89	24 / 89	25 / 89	26 / 89	28 / 89	29 / 90	29 / 90	30 / 90	30 / 90	30 / 90	31 / 90	31 / 90	31 / 90
	52,900	25th	5 / 89	10 / 90	13 / 89	16 / 87	18 / 88	22 / 87	25 / 88	25 / 88	25 / 88	26 / 88	29 / 88	30 / 87	32 / 87	34 / 87	34 / 87	36 / 88	37 / 88	38 / 88	38 / 89	39 / 89	39 / 89
	59,900	30th	5 / 89	11 / 89	15 / 85	17 / 84	22 / 85	26 / 85	28 / 84	29 / 85	29 / 84	31 / 85	33 / 85	34 / 85	36 / 85	38 / 85	39 / 86	41 / 86	42 / 87	44 / 87	45 / 87	45 / 87	45 / 87
	65,100	35th	5 / 89	14 / 87	16 / 83	20 / 83	24 / 83	29 / 83	32 / 84	33 / 84	33 / 84	34 / 84	38 / 85	39 / 85	41 / 85	43 / 85	46 / 86	48 / 86	49 / 86	51 / 87	52 / 87	52 / 87	53 / 87
	70,700	40th	5 / 89	15 / 86	18 / 83	22 / 83	27 / 84	32 / 84	35 / 84	36 / 84	37 / 84	39 / 85	42 / 85	44 / 86	46 / 86	48 / 86	52 / 87	54 / 87	56 / 87	57 / 87	59 / 87	60 / 87	61 / 88
	79,100	45th	5 / 89	20 / 82	23 / 80	30 / 82	32 / 82	37 / 83	40 / 83	41 / 83	42 / 83	43 / 84	46 / 84	48 / 84	52 / 84	54 / 84	57 / 85	59 / 85	61 / 85	63 / 85	65 / 86	66 / 86	67 / 86
	89,100	50th	5 / 89	21 / 81	23 / 78	32 / 80	34 / 81	42 / 83	45 / 82	47 / 83	50 / 84	51 / 84	52 / 84	54 / 83	56 / 83	59 / 84	63 / 85	65 / 85	66 / 85	69 / 85	70 / 85	73 / 85	74 / 86
	101,500	55th	11 / 89	24 / 83	26 / 79	34 / 81	40 / 83	48 / 84	51 / 84	52 / 84	55 / 85	57 / 85	58 / 85	60 / 84	62 / 84	65 / 84	69 / 85	72 / 85	73 / 85	75 / 85	77 / 85	80 / 85	82 / 86
	110,000	60th	11 / 89	30 / 79	32 / 76	41 / 79	46 / 80	58 / 83	60 / 83	63 / 83	64 / 84	65 / 83	65 / 83	67 / 83	69 / 83	72 / 82	76 / 83	77 / 83	79 / 83	81 / 83	83 / 83	85 / 83	87 / 84
	122,500	65th	11 / 89	30 / 78	33 / 75	44 / 78	51 / 79	59 / 81	62 / 79	64 / 80	65 / 80	67 / 80	67 / 79	69 / 79	71 / 79	74 / 80	79 / 80	81 / 80	84 / 80	85 / 80	88 / 80	89 / 80	90 / 80
	132,400	70th	11 / 88	30 / 74	34 / 72	45 / 76	53 / 76	61 / 78	63 / 76	67 / 77	68 / 77	69 / 76	70 / 75	71 / 75	73 / 75	78 / 76	-	-	86 / 76	87 / 76	90 / 76	92 / 77	93 / 77
	142,700	75th	11 / 87	38 / 75	43 / 73	55 / 76	63 / 73	68 / 75	71 / 75	74 / 76	75 / 75	76 / 75	-	-	-	-	-	-	-	-	93 / 73	94 / 74	96 / 73
	160,200	80th	13 / 73	43 / 73	49 / 70	60 / 73	68 / 71	75 / 73	77 / 73	80 / 74	-	-	-	-	-	-	-	-	-	-	-	97 / 70	97 / 70
	182,500	85th	13 / 71	52 / 74	59 / 70	70 / 72	80 / 70	85 / 72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98 / 67
	214,800	90th	13 / 60	58 / 71	65 / 67	71 / 68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	36 / 65	67 / 69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 153. Probability of Detection and Success Ratio of Drought Scenario 3 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 3			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	6 / 100	7 / 95	8 / 93	9 / 94	9 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94	10 / 94
	30,700	10th	7 / 0	9 / 100	12 / 95	13 / 94	14 / 95	15 / 94	16 / 94	16 / 94	17 / 95	17 / 95	17 / 95	18 / 95	19 / 95	20 / 95	20 / 95	20 / 95	20 / 95	20 / 95	20 / 95	20 / 95	20 / 95
	40,400	15th	7 / 0	11 / 100	14 / 96	15 / 95	17 / 95	19 / 89	22 / 90	22 / 89	22 / 89	23 / 89	24 / 86	25 / 86	26 / 86	26 / 87	27 / 86	27 / 86	27 / 86	27 / 86	27 / 86	27 / 86	27 / 86
	45,800	20th	7 / 0	11 / 98	15 / 95	17 / 89	20 / 89	23 / 85	27 / 87	27 / 86	27 / 86	27 / 84	29 / 83	29 / 82	31 / 82	32 / 80	32 / 80	32 / 80	32 / 80	33 / 80	33 / 79	33 / 79	33 / 79
	52,900	25th	7 / 100	13 / 97	17 / 94	20 / 89	22 / 89	26 / 86	29 / 86	29 / 85	30 / 85	30 / 84	33 / 83	34 / 82	36 / 81	37 / 80	38 / 79	39 / 80	40 / 80	41 / 79	41 / 79	41 / 79	41 / 79
	59,900	30th	7 / 100	14 / 95	20 / 94	22 / 89	28 / 91	32 / 86	35 / 86	36 / 86	36 / 85	37 / 84	39 / 83	40 / 82	42 / 81	43 / 80	43 / 79	46 / 80	47 / 80	49 / 80	49 / 79	50 / 79	50 / 79
	65,100	35th	7 / 100	17 / 90	21 / 89	24 / 84	30 / 86	34 / 81	37 / 82	38 / 82	39 / 82	40 / 80	43 / 80	45 / 80	47 / 79	47 / 78	50 / 77	53 / 78	53 / 78	55 / 78	56 / 77	56 / 77	57 / 77
	70,700	40th	7 / 100	18 / 85	22 / 86	27 / 82	33 / 84	36 / 80	40 / 80	41 / 80	42 / 80	43 / 79	47 / 79	49 / 79	50 / 76	51 / 75	54 / 75	57 / 76	59 / 76	60 / 76	61 / 75	62 / 75	63 / 75
	79,100	45th	7 / 100	25 / 84	29 / 84	37 / 83	39 / 83	43 / 79	47 / 79	47 / 79	48 / 79	48 / 78	51 / 77	53 / 77	55 / 74	56 / 72	59 / 73	62 / 73	63 / 73	66 / 73	66 / 73	68 / 73	69 / 73
	89,100	50th	7 / 100	26 / 84	30 / 84	39 / 82	41 / 82	49 / 80	53 / 80	54 / 79	56 / 78	57 / 77	57 / 76	59 / 75	59 / 73	62 / 72	65 / 72	67 / 73	68 / 72	71 / 72	72 / 72	74 / 72	76 / 73
	101,500	55th	14 / 100	29 / 85	34 / 85	41 / 82	47 / 81	52 / 75	55 / 75	56 / 75	59 / 74	59 / 73	60 / 73	62 / 72	62 / 70	65 / 70	68 / 69	71 / 70	72 / 70	75 / 69	76 / 69	79 / 70	81 / 70
	110,000	60th	14 / 100	40 / 86	44 / 86	52 / 83	57 / 82	64 / 76	66 / 75	69 / 75	70 / 76	70 / 74	70 / 73	70 / 72	71 / 70	73 / 69	77 / 69	77 / 68	79 / 68	80 / 68	81 / 67	84 / 67	85 / 68
	122,500	65th	14 / 100	40 / 85	45 / 85	55 / 81	61 / 78	65 / 74	67 / 71	70 / 72	71 / 72	71 / 70	71 / 69	71 / 67	72 / 66	74 / 66	78 / 66	80 / 65	83 / 65	83 / 64	85 / 64	86 / 64	87 / 64
	132,400	70th	15 / 100	42 / 84	48 / 85	58 / 80	64 / 75	67 / 71	70 / 69	72 / 69	73 / 69	73 / 67	73 / 66	74 / 65	74 / 64	80 / 64	-	-	86 / 63	86 / 62	88 / 62	89 / 61	91 / 62
	142,700	75th	15 / 100	52 / 85	61 / 86	71 / 82	76 / 73	77 / 70	79 / 70	82 / 69	83 / 69	83 / 68	-	-	-	-	-	-	-	-	91 / 59	91 / 59	93 / 59
	160,200	80th	18 / 89	56 / 79	65 / 77	75 / 75	80 / 69	83 / 67	84 / 67	87 / 66	-	-	-	-	-	-	-	-	-	-	-	95 / 57	95 / 57
	182,500	85th	19 / 88	68 / 81	80 / 78	90 / 76	95 / 69	96 / 67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98 / 55
	214,800	90th	20 / 78	74 / 75	86 / 74	91 / 72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	45 / 68	85 / 72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 154. Probability of Detection and Success Ratio of Drought Scenario 4 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 4			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	5 / 100	6 / 95	6 / 90	6 / 87	6 / 84	6 / 81	6 / 81	6 / 81	6 / 81	6 / 81	6 / 81	6 / 81	7 / 81	7 / 81	7 / 81	7 / 81	7 / 81	7 / 81	7 / 81	7 / 81
	30,700	10th	5 / 0	7 / 100	9 / 95	10 / 93	11 / 91	11 / 89	11 / 88	12 / 88	12 / 88	13 / 88	13 / 88	13 / 89	14 / 90	14 / 90	14 / 90	14 / 90	14 / 90	14 / 90	14 / 90	14 / 90	14 / 90
	40,400	15th	6 / 0	8 / 100	10 / 96	11 / 94	13 / 91	15 / 90	17 / 90	17 / 90	17 / 90	18 / 90	19 / 90	20 / 90	21 / 90	21 / 90	21 / 91	22 / 91	22 / 91	22 / 91	22 / 91	22 / 91	22 / 91
	45,800	20th	6 / 0	9 / 100	11 / 96	14 / 95	16 / 93	19 / 92	22 / 92	22 / 92	22 / 92	23 / 92	24 / 92	25 / 91	26 / 91	28 / 91	28 / 91	28 / 91	28 / 90	28 / 90	29 / 89	29 / 89	29 / 89
	52,900	25th	6 / 100	10 / 100	14 / 97	17 / 96	18 / 94	22 / 93	24 / 91	24 / 92	24 / 92	25 / 92	28 / 92	29 / 91	31 / 90	32 / 90	33 / 89	34 / 89	35 / 89	35 / 88	35 / 87	35 / 87	35 / 87
	59,900	30th	6 / 100	11 / 100	16 / 97	19 / 96	22 / 91	26 / 92	28 / 91	29 / 91	29 / 91	31 / 91	33 / 91	34 / 90	35 / 90	37 / 89	38 / 89	39 / 89	40 / 89	41 / 87	41 / 86	42 / 86	42 / 86
	65,100	35th	6 / 100	14 / 95	17 / 93	21 / 93	24 / 89	29 / 90	31 / 90	32 / 90	33 / 90	34 / 90	37 / 90	38 / 89	40 / 88	41 / 88	44 / 88	46 / 88	46 / 88	47 / 86	47 / 85	48 / 85	48 / 85
	70,700	40th	6 / 100	15 / 94	18 / 92	23 / 93	27 / 89	32 / 90	34 / 89	35 / 90	36 / 89	38 / 89	40 / 89	42 / 89	45 / 89	46 / 88	50 / 89	52 / 89	53 / 88	53 / 87	53 / 86	54 / 84	54 / 84
	79,100	45th	6 / 100	22 / 95	25 / 94	31 / 90	33 / 89	38 / 90	40 / 89	41 / 89	42 / 89	43 / 89	45 / 89	48 / 89	51 / 89	53 / 89	56 / 89	58 / 89	59 / 89	59 / 86	60 / 85	60 / 85	60 / 83
	89,100	50th	6 / 100	22 / 94	26 / 93	33 / 89	35 / 89	43 / 91	46 / 90	47 / 90	50 / 90	51 / 91	52 / 90	54 / 90	56 / 90	59 / 90	62 / 90	64 / 90	65 / 89	65 / 86	65 / 85	67 / 85	67 / 83
	101,500	55th	11 / 100	25 / 95	29 / 94	35 / 90	40 / 91	49 / 92	51 / 91	52 / 91	55 / 91	56 / 91	57 / 91	60 / 90	61 / 90	64 / 90	68 / 90	70 / 90	71 / 89	71 / 86	72 / 85	73 / 84	73 / 83
	110,000	60th	11 / 100	34 / 96	38 / 95	44 / 92	49 / 92	60 / 93	62 / 92	64 / 92	65 / 92	66 / 91	66 / 90	67 / 90	69 / 90	72 / 89	76 / 89	77 / 88	77 / 86	77 / 85	78 / 84	79 / 83	79 / 82
	122,500	65th	11 / 100	34 / 96	39 / 95	49 / 92	54 / 90	62 / 91	64 / 88	66 / 88	67 / 88	68 / 88	69 / 87	70 / 87	72 / 86	74 / 86	79 / 86	80 / 85	81 / 82	81 / 82	82 / 80	82 / 80	83 / 79
	132,400	70th	11 / 100	37 / 96	41 / 95	51 / 93	58 / 89	66 / 90	68 / 88	71 / 88	71 / 88	72 / 86	73 / 85	74 / 85	76 / 85	80 / 83	-	-	86 / 81	86 / 81	87 / 79	88 / 79	88 / 78
	142,700	75th	11 / 100	43 / 91	50 / 91	60 / 89	67 / 84	72 / 85	74 / 84	77 / 85	78 / 84	79 / 84	-	-	-	-	-	-	-	-	91 / 77	91 / 77	92 / 76
	160,200	80th	12 / 78	47 / 86	54 / 83	64 / 83	71 / 81	76 / 80	78 / 80	81 / 81	-	-	-	-	-	-	-	-	-	-	-	94 / 74	94 / 73
	182,500	85th	13 / 77	55 / 85	62 / 80	72 / 80	83 / 79	88 / 80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98 / 72
	214,800	90th	13 / 68	60 / 80	67 / 76	75 / 77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	37 / 72	69 / 76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 155. Probability of Detection and Success Ratio of Drought Scenario 4 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 4			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	4 / 81	6 / 85	6 / 86	7 / 87	7 / 88	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89	8 / 89
	30,700	10th	5 / 0	7 / 84	9 / 87	10 / 84	11 / 82	12 / 83	13 / 84	13 / 84	13 / 85	14 / 85	14 / 85	14 / 83	14 / 81	15 / 81	15 / 81	15 / 81	15 / 81	15 / 81	15 / 81	15 / 81	15 / 81
	40,400	15th	5 / 0	8 / 86	11 / 89	12 / 86	13 / 84	16 / 85	18 / 84	18 / 84	18 / 83	19 / 83	20 / 82	20 / 80	21 / 79	21 / 80	21 / 79	21 / 79	21 / 79	22 / 79	22 / 79	22 / 79	22 / 79
	45,800	20th	5 / 0	9 / 87	12 / 90	15 / 89	17 / 87	21 / 87	23 / 85	23 / 85	23 / 85	24 / 86	26 / 84	26 / 82	26 / 79	27 / 78	27 / 78	28 / 78	28 / 78	28 / 77	28 / 76	28 / 76	28 / 76
	52,900	25th	5 / 82	10 / 81	14 / 86	17 / 86	19 / 85	23 / 86	26 / 86	26 / 87	26 / 87	27 / 86	30 / 85	30 / 83	31 / 80	32 / 79	33 / 78	34 / 78	34 / 78	34 / 76	34 / 75	34 / 74	34 / 74
	59,900	30th	5 / 82	11 / 82	16 / 87	19 / 86	23 / 83	27 / 84	29 / 83	30 / 83	31 / 83	32 / 83	34 / 82	35 / 81	36 / 80	37 / 79	38 / 78	39 / 77	40 / 77	40 / 76	41 / 74	41 / 74	41 / 74
	65,100	35th	5 / 82	14 / 86	18 / 89	22 / 88	26 / 84	31 / 85	33 / 83	34 / 83	35 / 83	36 / 83	39 / 83	40 / 82	42 / 81	43 / 80	45 / 80	46 / 78	47 / 78	48 / 77	48 / 75	48 / 75	48 / 74
	70,700	40th	5 / 82	16 / 87	20 / 89	26 / 89	29 / 86	35 / 86	37 / 84	38 / 84	39 / 84	41 / 85	44 / 84	45 / 83	47 / 82	49 / 81	51 / 80	53 / 79	53 / 78	54 / 78	54 / 76	54 / 75	54 / 74
	79,100	45th	5 / 82	23 / 87	27 / 89	35 / 89	37 / 88	42 / 88	44 / 86	45 / 86	46 / 85	47 / 85	49 / 85	50 / 82	52 / 80	54 / 79	56 / 79	58 / 78	59 / 77	59 / 76	60 / 74	60 / 73	60 / 72
	89,100	50th	5 / 82	23 / 86	28 / 88	37 / 88	38 / 86	47 / 87	49 / 85	51 / 85	52 / 81	53 / 81	53 / 81	54 / 79	56 / 79	59 / 78	61 / 78	63 / 77	63 / 76	64 / 74	64 / 73	65 / 72	65 / 70
	101,500	55th	10 / 81	26 / 88	31 / 89	39 / 87	44 / 87	53 / 87	55 / 86	56 / 86	57 / 82	58 / 82	59 / 81	60 / 79	62 / 79	64 / 78	68 / 79	69 / 78	70 / 77	70 / 75	70 / 73	71 / 72	71 / 71
	110,000	60th	10 / 81	31 / 76	35 / 78	43 / 79	48 / 79	57 / 77	59 / 77	62 / 77	62 / 77	63 / 76	64 / 76	64 / 75	66 / 75	69 / 74	72 / 74	73 / 74	75 / 74	75 / 72	76 / 71	76 / 69	76 / 69
	122,500	65th	10 / 81	31 / 76	37 / 79	44 / 74	50 / 73	59 / 76	61 / 74	63 / 74	64 / 74	65 / 74	66 / 73	66 / 72	69 / 72	71 / 72	75 / 72	77 / 71	79 / 70	79 / 70	79 / 68	79 / 67	79 / 66
	132,400	70th	10 / 80	32 / 74	38 / 77	46 / 72	52 / 70	61 / 73	63 / 71	66 / 72	67 / 72	68 / 71	70 / 71	70 / 70	72 / 71	78 / 71	-	-	83 / 69	84 / 69	84 / 67	84 / 66	84 / 65
	142,700	75th	10 / 79	40 / 74	48 / 77	56 / 73	62 / 69	68 / 70	70 / 70	73 / 71	74 / 70	75 / 70	-	-	-	-	-	-	-	-	88 / 65	88 / 65	88 / 64
	160,200	80th	10 / 56	44 / 70	52 / 71	60 / 68	66 / 66	72 / 66	74 / 66	77 / 67	-	-	-	-	-	-	-	-	-	-	-	90 / 62	90 / 62
	182,500	85th	10 / 55	50 / 68	58 / 65	65 / 63	74 / 62	79 / 63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92 / 59
	214,800	90th	12 / 52	60 / 69	67 / 66	69 / 62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	39 / 68	74 / 72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 156. Probability of Detection and Success Ratio of Drought Scenario 7 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 7			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	5 / 100	6 / 100	6 / 100	7 / 100	7 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100
	30,700	10th	5 / 0	7 / 100	9 / 100	10 / 100	11 / 100	12 / 100	13 / 100	13 / 100	14 / 100	14 / 100	14 / 100	14 / 100	15 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100
	40,400	15th	6 / 0	8 / 100	11 / 100	12 / 100	14 / 100	16 / 98	18 / 98	19 / 98	19 / 98	19 / 98	21 / 99	21 / 99	22 / 99	23 / 99	23 / 99	23 / 98	23 / 98	23 / 98	23 / 98	23 / 98	23 / 98
	45,800	20th	6 / 0	9 / 97	11 / 93	14 / 92	15 / 92	19 / 91	21 / 92	22 / 92	22 / 92	22 / 92	24 / 93	25 / 93	26 / 92	28 / 93	28 / 93	28 / 92	28 / 92	28 / 92	29 / 92	29 / 92	29 / 92
	52,900	25th	6 / 100	10 / 96	12 / 90	15 / 90	17 / 90	21 / 89	23 / 89	23 / 89	23 / 89	25 / 90	27 / 91	28 / 91	30 / 90	32 / 90	32 / 90	33 / 89	34 / 89	35 / 89	35 / 89	36 / 89	36 / 89
	59,900	30th	6 / 100	10 / 93	14 / 85	16 / 85	21 / 88	24 / 87	27 / 88	28 / 88	28 / 89	29 / 89	32 / 90	33 / 90	35 / 89	36 / 89	37 / 89	38 / 88	40 / 88	41 / 88	42 / 88	42 / 88	42 / 88
	65,100	35th	6 / 100	14 / 94	15 / 85	19 / 87	24 / 88	28 / 88	31 / 89	32 / 89	33 / 89	33 / 89	37 / 90	38 / 90	40 / 90	41 / 89	43 / 88	45 / 88	46 / 88	47 / 88	48 / 88	49 / 88	49 / 88
	70,700	40th	6 / 100	15 / 91	16 / 83	21 / 86	26 / 87	30 / 87	33 / 88	34 / 88	36 / 89	37 / 89	40 / 90	42 / 90	44 / 88	46 / 88	48 / 87	50 / 87	51 / 88	53 / 88	54 / 87	54 / 86	55 / 86
	79,100	45th	6 / 100	21 / 94	23 / 87	30 / 89	32 / 89	37 / 89	40 / 89	41 / 90	42 / 90	43 / 90	45 / 91	47 / 90	50 / 89	52 / 89	54 / 87	56 / 87	57 / 88	58 / 86	60 / 86	61 / 86	61 / 86
	89,100	50th	6 / 100	22 / 94	24 / 87	32 / 89	34 / 89	41 / 90	45 / 90	47 / 90	50 / 91	51 / 91	52 / 91	53 / 90	55 / 89	58 / 89	59 / 88	62 / 88	63 / 88	64 / 87	65 / 87	67 / 86	68 / 86
	101,500	55th	11 / 100	24 / 94	26 / 87	34 / 89	39 / 90	47 / 90	51 / 91	52 / 91	54 / 91	56 / 91	57 / 91	59 / 90	60 / 89	63 / 89	65 / 87	67 / 87	68 / 87	70 / 86	71 / 86	73 / 85	74 / 85
	110,000	60th	11 / 100	32 / 94	34 / 88	42 / 90	48 / 90	58 / 91	60 / 91	63 / 91	63 / 91	65 / 91	66 / 91	67 / 90	68 / 89	71 / 89	74 / 87	74 / 87	76 / 86	77 / 85	78 / 85	79 / 84	80 / 84
	122,500	65th	11 / 100	33 / 92	35 / 86	46 / 88	51 / 87	58 / 87	63 / 88	65 / 88	66 / 88	67 / 88	68 / 87	69 / 86	71 / 86	73 / 86	76 / 84	77 / 83	79 / 82	80 / 81	81 / 81	82 / 81	84 / 81
	132,400	70th	11 / 99	35 / 92	37 / 85	48 / 88	54 / 84	61 / 85	66 / 86	68 / 86	69 / 86	71 / 86	73 / 86	73 / 85	75 / 84	80 / 85	-	-	84 / 81	84 / 80	86 / 80	88 / 80	89 / 80
	142,700	75th	11 / 97	42 / 92	44 / 82	56 / 85	65 / 83	70 / 84	73 / 84	76 / 85	77 / 84	78 / 84	-	-	-	-	-	-	-	-	90 / 78	91 / 78	93 / 78
	160,200	80th	11 / 69	46 / 85	48 / 75	59 / 78	68 / 78	75 / 80	77 / 80	80 / 81	-	-	-	-	-	-	-	-	-	-	-	94 / 75	94 / 74
	182,500	85th	11 / 67	55 / 86	59 / 76	70 / 79	82 / 80	87 / 80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97 / 72
	214,800	90th	11 / 56	62 / 83	65 / 74	72 / 76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	25 / 49	62 / 69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 157. Probability of Detection and Success Ratio of Drought Scenario 8 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 8			12-month SPI Thresholds																				
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	5 / 100	6 / 100	6 / 100	7 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100	8 / 100
	30,700	10th	5 / 0	8 / 100	10 / 100	11 / 100	12 / 100	13 / 100	13 / 100	14 / 100	14 / 100	15 / 100	15 / 100	15 / 100	16 / 100	17 / 100	17 / 100	17 / 100	17 / 100	17 / 100	17 / 100	17 / 100	17 / 100
	40,400	15th	6 / 0	9 / 100	11 / 100	12 / 100	14 / 100	17 / 98	19 / 98	19 / 98	20 / 98	20 / 98	22 / 99	22 / 99	23 / 99	24 / 99	24 / 99	24 / 98	24 / 98	24 / 98	24 / 98	24 / 98	24 / 98
	45,800	20th	6 / 0	9 / 97	11 / 93	14 / 92	16 / 92	20 / 91	22 / 92	23 / 92	23 / 92	23 / 92	25 / 93	26 / 93	28 / 92	29 / 93	29 / 93	29 / 92	29 / 92	30 / 92	30 / 92	30 / 92	30 / 92
	52,900	25th	6 / 100	10 / 96	13 / 90	16 / 90	18 / 90	22 / 89	24 / 89	24 / 89	25 / 89	26 / 90	28 / 91	30 / 91	31 / 89	33 / 88	33 / 89	34 / 87	35 / 87	36 / 87	36 / 87	36 / 87	36 / 87
	59,900	30th	6 / 100	11 / 93	14 / 85	17 / 85	22 / 88	25 / 87	28 / 88	29 / 88	30 / 89	31 / 89	34 / 90	34 / 90	36 / 88	37 / 87	38 / 88	39 / 86	40 / 87	42 / 86	42 / 86	43 / 86	43 / 86
	65,100	35th	6 / 100	14 / 94	16 / 85	20 / 87	25 / 88	29 / 88	32 / 89	33 / 89	34 / 89	35 / 89	38 / 90	40 / 90	42 / 89	43 / 88	44 / 86	46 / 87	47 / 87	48 / 86	49 / 86	49 / 86	50 / 86
	70,700	40th	6 / 100	15 / 91	17 / 83	22 / 86	27 / 87	32 / 87	35 / 88	36 / 88	37 / 89	39 / 89	42 / 90	44 / 90	45 / 88	47 / 87	49 / 86	52 / 86	53 / 86	54 / 86	55 / 85	55 / 84	56 / 84
	79,100	45th	6 / 100	22 / 94	24 / 87	31 / 89	33 / 89	38 / 89	42 / 89	43 / 90	43 / 90	44 / 90	47 / 91	49 / 90	52 / 88	54 / 88	55 / 86	58 / 86	59 / 86	60 / 84	61 / 84	62 / 84	62 / 84
	89,100	50th	6 / 100	23 / 94	25 / 87	34 / 89	35 / 89	43 / 90	47 / 90	49 / 90	52 / 91	53 / 91	54 / 91	56 / 90	57 / 88	60 / 88	61 / 87	64 / 87	65 / 87	66 / 85	67 / 85	68 / 84	69 / 84
	101,500	55th	11 / 100	25 / 94	27 / 87	36 / 89	41 / 90	49 / 90	53 / 91	54 / 91	57 / 91	58 / 91	59 / 91	61 / 90	62 / 88	65 / 88	67 / 87	69 / 86	70 / 86	72 / 84	73 / 84	74 / 83	76 / 83
	110,000	60th	11 / 100	33 / 92	35 / 87	44 / 89	49 / 89	60 / 90	62 / 90	65 / 90	66 / 90	67 / 90	68 / 90	69 / 89	70 / 88	73 / 88	76 / 86	76 / 85	77 / 84	77 / 82	78 / 82	79 / 81	81 / 81
	122,500	65th	11 / 100	34 / 91	36 / 85	47 / 88	53 / 86	60 / 87	65 / 87	67 / 88	68 / 88	70 / 88	71 / 87	71 / 86	73 / 84	75 / 84	78 / 83	79 / 81	79 / 78	80 / 78	81 / 77	82 / 78	84 / 78
	132,400	70th	11 / 99	36 / 91	38 / 84	49 / 87	56 / 84	63 / 84	68 / 85	71 / 85	72 / 86	73 / 85	75 / 85	76 / 84	77 / 83	79 / 81	-	-	84 / 77	84 / 77	86 / 76	87 / 77	89 / 77
	142,700	75th	11 / 97	40 / 84	42 / 75	54 / 79	64 / 78	69 / 79	72 / 80	75 / 80	76 / 80	77 / 80	-	-	-	-	-	-	-	-	90 / 74	91 / 74	92 / 74
	160,200	80th	11 / 69	44 / 78	46 / 68	57 / 73	67 / 74	74 / 76	76 / 76	79 / 77	-	-	-	-	-	-	-	-	-	-	-	94 / 71	94 / 71
	182,500	85th	11 / 67	53 / 80	58 / 71	69 / 75	82 / 76	87 / 77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97 / 69
	214,800	90th	11 / 56	60 / 77	64 / 70	71 / 72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	22 / 42	60 / 65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 158. Probability of Detection and Success Ratio of Drought Scenario 9 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 9			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	6 / 100	7 / 100	8 / 100	8 / 100	9 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100
	30,700	10th	6 / 0	9 / 100	11 / 94	12 / 94	13 / 95	14 / 95	15 / 95	15 / 96	16 / 96	16 / 96	16 / 96	17 / 96	18 / 96	19 / 96	19 / 96	19 / 96	19 / 96	19 / 96	19 / 96	19 / 96	19 / 96
	40,400	15th	7 / 0	10 / 100	12 / 92	13 / 91	16 / 93	18 / 92	21 / 93	22 / 93	22 / 93	22 / 93	24 / 94	25 / 94	26 / 94	27 / 94	27 / 94	27 / 94	27 / 94	27 / 94	27 / 94	27 / 94	27 / 94
	45,800	20th	7 / 0	10 / 97	12 / 85	15 / 85	18 / 86	22 / 87	25 / 87	25 / 88	25 / 88	26 / 88	29 / 89	29 / 89	31 / 89	32 / 89	33 / 89	33 / 88	33 / 88	34 / 89	34 / 88	34 / 88	34 / 88
	52,900	25th	7 / 100	12 / 96	14 / 82	17 / 81	19 / 82	24 / 82	26 / 83	27 / 83	27 / 83	28 / 84	31 / 85	33 / 86	35 / 84	36 / 84	37 / 84	38 / 83	39 / 83	40 / 83	40 / 83	41 / 83	41 / 83
	59,900	30th	7 / 100	13 / 92	14 / 73	18 / 75	23 / 79	27 / 80	30 / 81	31 / 81	32 / 81	33 / 81	36 / 82	37 / 82	39 / 82	40 / 81	41 / 81	43 / 80	44 / 81	45 / 80	46 / 80	47 / 80	47 / 80
	65,100	35th	7 / 100	14 / 78	16 / 72	20 / 76	26 / 79	31 / 80	34 / 80	35 / 81	36 / 80	37 / 80	41 / 82	42 / 82	44 / 81	46 / 80	47 / 79	50 / 79	50 / 79	52 / 79	53 / 79	53 / 79	53 / 78
	70,700	40th	7 / 100	14 / 73	17 / 69	22 / 74	28 / 78	33 / 79	37 / 80	38 / 80	39 / 79	41 / 80	44 / 81	47 / 82	48 / 80	50 / 79	52 / 78	55 / 78	56 / 78	57 / 77	58 / 77	59 / 76	59 / 75
	79,100	45th	7 / 100	21 / 75	23 / 72	32 / 77	34 / 78	40 / 79	44 / 80	45 / 80	45 / 79	46 / 80	50 / 81	52 / 81	55 / 80	56 / 78	58 / 77	61 / 77	62 / 77	62 / 75	64 / 75	64 / 75	64 / 74
	89,100	50th	7 / 100	22 / 76	24 / 72	34 / 78	36 / 78	46 / 81	50 / 81	52 / 82	55 / 81	56 / 82	57 / 82	59 / 81	60 / 80	61 / 77	63 / 76	65 / 76	67 / 76	68 / 75	69 / 75	70 / 73	70 / 72
	101,500	55th	13 / 100	25 / 78	27 / 73	37 / 78	43 / 80	50 / 78	54 / 79	55 / 79	58 / 80	59 / 80	61 / 80	63 / 80	64 / 78	66 / 76	68 / 75	71 / 75	72 / 75	73 / 74	75 / 74	76 / 72	76 / 71
	110,000	60th	13 / 100	34 / 79	36 / 75	46 / 79	52 / 81	61 / 79	64 / 79	68 / 80	68 / 80	70 / 80	71 / 80	72 / 80	73 / 78	75 / 77	78 / 75	78 / 75	79 / 73	79 / 72	81 / 72	81 / 71	81 / 70
	122,500	65th	13 / 100	34 / 78	36 / 73	49 / 78	56 / 77	62 / 76	67 / 77	70 / 77	71 / 77	72 / 78	73 / 77	74 / 76	76 / 75	77 / 73	80 / 73	80 / 71	81 / 68	82 / 68	83 / 68	84 / 68	84 / 67
	132,400	70th	13 / 99	35 / 76	37 / 71	51 / 76	58 / 74	64 / 73	69 / 74	73 / 75	73 / 75	75 / 74	77 / 75	78 / 74	79 / 73	81 / 70	-	-	85 / 67	86 / 67	88 / 66	89 / 67	89 / 66
	142,700	75th	13 / 97	40 / 72	43 / 65	56 / 70	67 / 70	71 / 69	74 / 70	78 / 71	79 / 70	80 / 70	-	-	-	-	-	-	-	-	92 / 65	93 / 65	93 / 64
	160,200	80th	13 / 69	45 / 68	47 / 60	60 / 65	71 / 67	77 / 67	78 / 67	83 / 68	-	-	-	-	-	-	-	-	-	-	-	95 / 61	95 / 61
	182,500	85th	13 / 67	49 / 63	54 / 57	68 / 62	82 / 65	85 / 64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97 / 59
	214,800	90th	13 / 56	57 / 63	62 / 58	70 / 60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	25 / 41	57 / 53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 159. Probability of Detection and Success Ratio of Drought Scenario 10 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 10			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	6 / 100	8 / 100	8 / 100	9 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	10 / 100	11 / 100	11 / 100	11 / 100	11 / 100	11 / 100	11 / 100	11 / 100	11 / 100
	30,700	10th	7 / 0	10 / 100	12 / 94	13 / 94	14 / 95	15 / 95	16 / 95	17 / 96	17 / 96	18 / 96	18 / 96	18 / 96	20 / 96	20 / 96	20 / 96	20 / 96	20 / 96	20 / 96	20 / 96	20 / 96	20 / 96
	40,400	15th	7 / 0	11 / 100	13 / 92	14 / 91	17 / 93	20 / 92	23 / 93	23 / 93	24 / 93	24 / 93	26 / 94	27 / 94	28 / 94	29 / 94	29 / 94	29 / 94	29 / 94	29 / 94	30 / 94	30 / 94	30 / 94
	45,800	20th	7 / 0	11 / 97	13 / 85	17 / 85	19 / 86	24 / 87	27 / 87	27 / 88	27 / 88	28 / 88	31 / 89	32 / 89	34 / 89	35 / 89	36 / 89	36 / 88	36 / 88	36 / 89	37 / 88	37 / 88	37 / 88
	52,900	25th	7 / 100	13 / 96	15 / 82	18 / 81	21 / 82	26 / 82	28 / 83	29 / 83	29 / 83	30 / 84	34 / 85	36 / 86	38 / 84	39 / 84	40 / 84	41 / 83	42 / 83	43 / 83	44 / 83	44 / 83	44 / 83
	59,900	30th	7 / 100	14 / 92	16 / 73	19 / 75	25 / 79	30 / 80	33 / 81	34 / 81	34 / 81	35 / 81	39 / 82	40 / 82	42 / 82	44 / 81	45 / 81	46 / 80	48 / 81	49 / 80	50 / 80	51 / 80	51 / 80
	65,100	35th	7 / 100	15 / 78	17 / 72	22 / 76	28 / 79	34 / 80	37 / 80	38 / 81	39 / 80	40 / 80	44 / 82	46 / 82	48 / 81	50 / 80	51 / 79	54 / 79	55 / 79	56 / 79	58 / 79	58 / 79	58 / 78
	70,700	40th	7 / 100	16 / 73	18 / 69	24 / 74	31 / 78	36 / 79	40 / 80	41 / 80	42 / 79	44 / 80	48 / 81	51 / 82	53 / 80	54 / 79	57 / 78	60 / 78	61 / 78	62 / 77	63 / 77	64 / 76	64 / 75
	79,100	45th	7 / 100	23 / 75	25 / 72	34 / 77	37 / 77	43 / 79	47 / 80	48 / 80	49 / 79	50 / 80	54 / 81	56 / 80	60 / 79	61 / 78	63 / 77	65 / 77	67 / 77	68 / 75	69 / 75	70 / 75	70 / 74
	89,100	50th	7 / 100	24 / 76	26 / 72	37 / 77	39 / 78	49 / 80	54 / 80	55 / 80	58 / 80	60 / 81	61 / 81	63 / 80	64 / 78	65 / 76	67 / 75	70 / 75	71 / 75	73 / 74	74 / 74	75 / 73	75 / 71
	101,500	55th	14 / 99	27 / 77	29 / 73	39 / 77	46 / 80	53 / 76	57 / 77	58 / 77	61 / 77	63 / 77	64 / 78	66 / 77	67 / 76	69 / 74	72 / 72	74 / 73	75 / 72	76 / 71	78 / 71	79 / 70	79 / 69
	110,000	60th	14 / 99	35 / 77	38 / 73	48 / 77	55 / 78	65 / 76	68 / 77	71 / 77	72 / 77	73 / 77	74 / 77	75 / 76	76 / 75	78 / 73	81 / 72	81 / 71	82 / 70	82 / 69	84 / 69	84 / 68	84 / 67
	122,500	65th	14 / 99	35 / 75	38 / 71	52 / 75	59 / 75	65 / 73	69 / 73	72 / 73	72 / 73	74 / 73	75 / 72	76 / 72	77 / 70	78 / 69	81 / 68	82 / 66	82 / 64	83 / 64	85 / 63	86 / 63	86 / 63
	132,400	70th	14 / 97	37 / 74	39 / 69	54 / 74	61 / 71	66 / 70	70 / 69	74 / 70	74 / 70	76 / 69	77 / 68	78 / 68	79 / 67	81 / 64	-	-	86 / 62	86 / 62	88 / 61	90 / 62	90 / 61
	142,700	75th	14 / 96	43 / 70	45 / 63	59 / 68	68 / 65	72 / 64	75 / 65	79 / 66	80 / 65	81 / 65	-	-	-	-	-	-	-	-	92 / 60	93 / 60	93 / 59
	160,200	80th	14 / 68	47 / 66	50 / 58	64 / 63	72 / 62	78 / 62	80 / 63	84 / 64	-	-	-	-	-	-	-	-	-	-	-	95 / 56	95 / 56
	182,500	85th	14 / 66	52 / 61	57 / 56	71 / 60	83 / 61	86 / 60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97 / 54
	214,800	90th	14 / 55	58 / 59	63 / 54	72 / 56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	27 / 41	58 / 49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 160. Probability of Detection and Success Ratio of Drought Scenario 11 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 11			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	7 / 100	8 / 100	9 / 100	10 / 100	11 / 100	11 / 100	11 / 100	11 / 100	11 / 100	11 / 100	11 / 100	11 / 100	12 / 100	12 / 100	12 / 100	12 / 100	12 / 100	12 / 100	12 / 100	12 / 100
	30,700	10th	7 / 0	10 / 100	13 / 94	14 / 94	16 / 95	17 / 95	18 / 95	18 / 96	19 / 96	19 / 96	19 / 96	20 / 96	22 / 96	22 / 96	22 / 96	22 / 96	22 / 96	22 / 96	22 / 96	22 / 96	22 / 96
	40,400	15th	8 / 0	12 / 100	14 / 92	16 / 91	19 / 93	22 / 92	25 / 93	26 / 93	26 / 93	26 / 93	29 / 94	29 / 94	31 / 94	32 / 94	32 / 94	32 / 94	32 / 94	32 / 94	32 / 94	32 / 94	32 / 94
	45,800	20th	8 / 0	12 / 97	14 / 85	18 / 85	21 / 86	26 / 87	30 / 87	30 / 88	30 / 88	31 / 88	34 / 89	35 / 89	37 / 89	39 / 89	39 / 89	39 / 88	39 / 88	40 / 89	41 / 88	41 / 88	41 / 88
	52,900	25th	8 / 100	14 / 96	16 / 82	20 / 81	23 / 82	28 / 82	31 / 83	32 / 83	32 / 83	33 / 84	37 / 85	39 / 86	41 / 83	43 / 83	43 / 83	44 / 82	46 / 82	47 / 82	48 / 82	48 / 82	48 / 82
	59,900	30th	8 / 100	15 / 92	17 / 73	21 / 75	27 / 79	32 / 80	36 / 81	37 / 81	38 / 81	39 / 81	43 / 82	44 / 82	45 / 80	47 / 80	48 / 80	50 / 79	52 / 80	53 / 79	54 / 79	55 / 79	55 / 79
	65,100	35th	8 / 100	16 / 78	19 / 72	24 / 75	30 / 78	37 / 79	40 / 80	41 / 80	42 / 79	43 / 79	48 / 81	50 / 81	51 / 79	53 / 78	54 / 77	57 / 77	58 / 77	60 / 77	61 / 77	62 / 77	62 / 76
	70,700	40th	8 / 100	17 / 72	19 / 68	26 / 72	32 / 75	39 / 77	43 / 78	44 / 78	44 / 76	46 / 77	51 / 78	52 / 77	54 / 75	56 / 74	59 / 73	62 / 74	63 / 74	64 / 73	65 / 73	66 / 72	66 / 72
	79,100	45th	8 / 100	20 / 62	23 / 60	33 / 67	36 / 69	43 / 71	47 / 73	48 / 73	49 / 72	50 / 73	54 / 74	57 / 74	61 / 74	62 / 72	64 / 72	67 / 72	68 / 72	69 / 70	71 / 70	72 / 70	72 / 69
	89,100	50th	8 / 100	20 / 60	23 / 58	35 / 66	37 / 67	48 / 71	52 / 72	54 / 72	58 / 72	59 / 73	61 / 73	62 / 73	64 / 71	65 / 69	67 / 68	70 / 68	71 / 69	73 / 68	74 / 68	75 / 67	75 / 65
	101,500	55th	15 / 96	23 / 62	26 / 59	36 / 65	43 / 68	51 / 67	55 / 68	56 / 68	60 / 69	61 / 69	63 / 69	65 / 69	66 / 68	67 / 66	71 / 65	74 / 66	75 / 66	76 / 64	78 / 64	79 / 64	79 / 62
	110,000	60th	15 / 96	33 / 65	35 / 62	45 / 66	53 / 68	63 / 68	67 / 69	70 / 70	71 / 70	72 / 69	73 / 70	74 / 69	75 / 68	77 / 66	80 / 65	80 / 65	81 / 64	82 / 63	83 / 62	84 / 62	84 / 61
	122,500	65th	15 / 96	33 / 63	35 / 60	49 / 66	57 / 66	63 / 65	67 / 65	71 / 66	71 / 66	73 / 66	74 / 65	75 / 65	76 / 64	77 / 62	81 / 62	81 / 60	82 / 58	83 / 58	85 / 58	86 / 58	86 / 57
	132,400	70th	15 / 95	34 / 63	37 / 59	51 / 64	58 / 63	65 / 62	69 / 62	73 / 63	73 / 63	75 / 62	76 / 62	77 / 61	78 / 61	80 / 58	-	-	85 / 57	86 / 56	88 / 56	90 / 56	90 / 55
	142,700	75th	15 / 93	41 / 61	43 / 55	57 / 60	66 / 58	70 / 58	74 / 59	78 / 60	79 / 59	80 / 59	-	-	-	-	-	-	-	-	92 / 55	93 / 55	93 / 54
	160,200	80th	15 / 66	46 / 58	48 / 51	62 / 56	71 / 56	78 / 57	79 / 57	84 / 58	-	-	-	-	-	-	-	-	-	-	-	95 / 52	95 / 51
	182,500	85th	15 / 65	50 / 54	56 / 50	70 / 54	83 / 55	86 / 55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97 / 49
	214,800	90th	15 / 54	58 / 53	63 / 49	70 / 51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	29 / 40	58 / 44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 161. Probability of Detection and Success Ratio of Drought Scenario 12 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 12			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	8 / 100	9 / 100	10 / 100	11 / 100	12 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100	13 / 100
	30,700	10th	9 / 0	12 / 100	14 / 94	16 / 94	18 / 95	19 / 95	20 / 95	21 / 96	21 / 96	22 / 96	22 / 96	23 / 96	25 / 96	25 / 96	25 / 96	25 / 96	25 / 96	25 / 96	25 / 96	25 / 96	25 / 96
	40,400	15th	9 / 0	14 / 100	16 / 92	18 / 91	21 / 93	25 / 92	28 / 93	29 / 93	29 / 93	30 / 93	33 / 94	34 / 94	36 / 94	36 / 94	36 / 94	36 / 94	36 / 94	37 / 94	37 / 94	37 / 94	37 / 94
	45,800	20th	9 / 0	14 / 97	17 / 85	21 / 85	24 / 86	30 / 87	34 / 87	34 / 88	34 / 88	36 / 88	39 / 89	40 / 89	42 / 89	44 / 89	45 / 89	45 / 88	45 / 88	45 / 89	47 / 88	47 / 88	47 / 88
	52,900	25th	9 / 100	16 / 96	19 / 82	23 / 81	26 / 82	32 / 82	35 / 83	36 / 83	36 / 83	38 / 84	43 / 85	45 / 86	46 / 83	49 / 83	50 / 83	51 / 82	52 / 82	53 / 82	54 / 82	55 / 82	55 / 82
	59,900	30th	9 / 100	17 / 91	19 / 72	23 / 74	30 / 77	36 / 78	40 / 79	42 / 79	42 / 79	43 / 79	48 / 81	49 / 81	51 / 79	53 / 78	54 / 79	56 / 78	58 / 78	60 / 78	61 / 78	62 / 78	62 / 78
	65,100	35th	9 / 100	18 / 76	21 / 70	26 / 72	33 / 74	40 / 76	44 / 77	45 / 77	46 / 76	47 / 76	53 / 78	55 / 78	56 / 76	58 / 75	60 / 74	63 / 74	64 / 74	66 / 74	67 / 74	68 / 74	68 / 74
	70,700	40th	9 / 100	18 / 69	21 / 65	27 / 67	34 / 70	41 / 72	46 / 74	47 / 74	48 / 72	50 / 73	55 / 74	57 / 73	58 / 71	60 / 70	64 / 69	67 / 70	68 / 70	70 / 70	71 / 70	72 / 69	72 / 68
	79,100	45th	9 / 100	20 / 55	23 / 53	34 / 60	36 / 61	44 / 64	48 / 65	50 / 66	50 / 65	51 / 66	56 / 67	58 / 66	62 / 66	63 / 65	65 / 64	69 / 65	70 / 65	71 / 63	73 / 64	74 / 63	74 / 62
	89,100	50th	9 / 100	21 / 53	23 / 51	35 / 59	38 / 60	49 / 63	53 / 64	55 / 64	58 / 64	60 / 64	62 / 65	63 / 64	64 / 62	65 / 60	67 / 60	71 / 61	73 / 61	74 / 60	75 / 60	77 / 60	77 / 58
	101,500	55th	14 / 80	23 / 54	26 / 52	37 / 58	42 / 58	50 / 57	54 / 58	55 / 59	59 / 60	61 / 60	63 / 61	64 / 59	65 / 58	66 / 57	70 / 56	73 / 57	74 / 57	75 / 56	77 / 56	79 / 56	79 / 55
	110,000	60th	14 / 80	33 / 57	36 / 55	46 / 59	52 / 59	63 / 59	66 / 60	68 / 60	69 / 59	70 / 59	71 / 59	72 / 59	73 / 58	74 / 56	78 / 56	79 / 55	80 / 55	80 / 54	82 / 54	83 / 53	83 / 53
	122,500	65th	14 / 80	33 / 56	36 / 53	51 / 59	56 / 58	63 / 57	67 / 57	69 / 56	69 / 56	71 / 56	72 / 55	73 / 55	74 / 54	75 / 53	79 / 53	80 / 52	81 / 50	82 / 50	83 / 50	84 / 50	84 / 49
	132,400	70th	14 / 79	35 / 55	37 / 52	53 / 58	58 / 55	64 / 54	68 / 54	71 / 54	71 / 53	73 / 53	74 / 53	75 / 53	76 / 52	78 / 50	-	-	84 / 49	85 / 49	87 / 49	89 / 49	89 / 48
	142,700	75th	14 / 78	42 / 55	45 / 50	60 / 55	66 / 51	71 / 51	74 / 52	76 / 51	77 / 51	78 / 51	-	-	-	-	-	-	-	-	91 / 47	92 / 47	92 / 47
	160,200	80th	14 / 55	47 / 53	50 / 47	65 / 52	71 / 49	78 / 50	80 / 50	83 / 50	-	-	-	-	-	-	-	-	-	-	-	94 / 45	94 / 45
	182,500	85th	14 / 54	50 / 48	56 / 44	71 / 48	82 / 48	85 / 47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96 / 43
	214,800	90th	14 / 45	58 / 47	63 / 43	71 / 45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	30 / 36	58 / 39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 162. Probability of Detection and Success Ratio of Drought Scenario 13 of combined inflow/SPI thresholds over the period of record, Model Period A (1926-2016).

POD / SR of Drought Scenario 13			12-month SPI Thresholds																			
			-3.09	-1.75	-1.22	-0.99	-0.79	-0.60	-0.47	-0.35	-0.23	-0.12	-0.01	0.11	0.19	0.34	0.49	0.60	0.77	0.97	1.25	1.72	2.68
			0th	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
12-month Running Average Inflow Threshold (acre-ft)	4,600	0th	0 / 0	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -	0 / -
	15,300	5th	0 / 0	9 / 100	11 / 100	12 / 100	14 / 100	15 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100	16 / 100
	30,700	10th	10 / 0	14 / 100	17 / 94	19 / 94	22 / 95	23 / 95	25 / 95	25 / 96	26 / 96	27 / 96	27 / 96	28 / 96	30 / 96	30 / 96	30 / 96	30 / 96	30 / 96	30 / 96	30 / 96	30 / 96	30 / 96
	40,400	15th	11 / 0	17 / 100	20 / 92	22 / 91	26 / 93	30 / 92	34 / 93	35 / 93	35 / 93	36 / 93	40 / 94	40 / 94	43 / 94	43 / 94	44 / 94	44 / 94	44 / 94	44 / 94	45 / 94	45 / 94	45 / 94
	45,800	20th	11 / 0	17 / 97	20 / 85	25 / 85	29 / 86	36 / 87	41 / 87	41 / 88	41 / 88	43 / 88	47 / 89	48 / 89	51 / 89	53 / 89	54 / 89	54 / 88	54 / 88	55 / 89	56 / 88	56 / 88	56 / 88
	52,900	25th	11 / 100	20 / 96	23 / 82	28 / 81	31 / 82	38 / 82	42 / 82	43 / 83	43 / 83	45 / 83	51 / 85	53 / 85	56 / 83	58 / 83	60 / 83	61 / 81	62 / 82	64 / 82	65 / 82	65 / 82	65 / 82
	59,900	30th	11 / 100	20 / 89	23 / 71	28 / 73	36 / 76	43 / 77	46 / 75	48 / 75	48 / 75	50 / 75	55 / 77	57 / 77	59 / 75	61 / 75	62 / 75	65 / 74	66 / 74	68 / 73	69 / 73	69 / 73	69 / 73
	65,100	35th	11 / 100	21 / 71	23 / 66	30 / 68	38 / 70	45 / 71	49 / 71	50 / 71	51 / 69	52 / 70	59 / 72	61 / 72	63 / 70	65 / 70	67 / 68	70 / 68	71 / 68	72 / 67	74 / 67	74 / 67	74 / 67
	70,700	40th	11 / 100	21 / 64	23 / 60	31 / 63	39 / 66	46 / 67	51 / 68	52 / 68	53 / 66	56 / 67	62 / 69	63 / 68	65 / 66	67 / 65	72 / 65	74 / 65	76 / 65	77 / 64	78 / 64	79 / 63	79 / 62
	79,100	45th	11 / 100	23 / 51	26 / 50	38 / 57	41 / 58	48 / 59	53 / 60	55 / 60	55 / 59	57 / 60	62 / 62	64 / 61	68 / 60	70 / 60	73 / 59	76 / 59	77 / 59	78 / 58	80 / 58	80 / 57	80 / 56
	89,100	50th	11 / 100	23 / 50	26 / 48	39 / 54	43 / 56	54 / 59	59 / 58	60 / 58	65 / 59	66 / 59	69 / 60	70 / 59	71 / 57	72 / 56	75 / 55	78 / 55	80 / 56	81 / 54	82 / 55	83 / 53	83 / 52
	101,500	55th	17 / 77	26 / 50	29 / 48	41 / 54	48 / 55	55 / 53	59 / 53	61 / 53	65 / 55	67 / 55	69 / 56	70 / 54	71 / 53	73 / 52	77 / 52	80 / 52	81 / 52	82 / 51	84 / 51	84 / 49	84 / 48
	110,000	60th	17 / 77	31 / 44	34 / 43	46 / 48	52 / 50	63 / 50	68 / 51	70 / 51	70 / 50	72 / 50	73 / 51	74 / 50	76 / 50	77 / 48	82 / 48	82 / 48	83 / 47	84 / 47	86 / 47	86 / 46	86 / 45
	122,500	65th	17 / 77	31 / 44	34 / 42	50 / 48	57 / 48	63 / 48	68 / 48	70 / 48	70 / 47	72 / 48	74 / 47	75 / 47	77 / 46	78 / 46	82 / 46	83 / 45	84 / 44	86 / 44	88 / 44	88 / 43	88 / 43
	132,400	70th	17 / 76	31 / 41	34 / 39	50 / 46	57 / 44	63 / 44	68 / 45	70 / 44	70 / 44	72 / 44	74 / 44	75 / 44	77 / 43	79 / 42	-	-	86 / 42	87 / 42	90 / 42	90 / 41	90 / 41
	142,700	75th	17 / 75	38 / 42	41 / 38	58 / 44	66 / 42	70 / 42	74 / 43	76 / 42	76 / 42	77 / 42	-	-	-	-	-	-	-	-	93 / 40	94 / 40	94 / 39
	160,200	80th	17 / 53	45 / 42	48 / 37	64 / 42	72 / 41	79 / 42	81 / 42	83 / 42	-	-	-	-	-	-	-	-	-	-	-	95 / 38	95 / 37
	182,500	85th	17 / 52	48 / 38	55 / 36	71 / 40	84 / 41	87 / 40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96 / 36
	214,800	90th	17 / 43	57 / 38	63 / 36	71 / 37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	256,200	95th	32 / 31	57 / 32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	444,600	100th	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Initiating a Curtailment Event

Table 163. Percent of months curtailments would occur throughout the year when initiating a curtailment event in one particular month versus any month for the threshold, Inflow ≤ 110,000 and SPI ≤ -0.23

Curtailment Initiation	Inflow ≤ 110,000 & SPI ≤ -0.23																							
	Percent of Months Curtailed																							
	% of all Jans	% of all Febs	% of all Mars	% of all Aprs	% of all Mays	% of all Juns	% of all Juls	% of all Augs	% of all Seps	% of all Octs	% of all Novs	% of all Decs	% of all Jans	% of all Febs	% of all Mars	% of all Aprs	% of all Mays	% of all Juns	% of all Juls	% of all Augs	% of all Seps	% of all Octs	% of all Novs	% of all Months
Any Month	44	47	44	46	43	42	41	43	47	43	43	43	-	-	-	-	-	-	-	-	-	-	-	44
Jan Only	44	44	43	42	36	34	33	33	33	30	30	30	-	-	-	-	-	-	-	-	-	-	-	36
Feb Only	→	47	44	42	36	34	33	33	33	30	30	30	30	-	-	-	-	-	-	-	-	-	-	35
Mar Only	→	→	44	42	36	34	33	33	33	30	30	30	30	30	-	-	-	-	-	-	-	-	-	34
Apr Only	→	→	→	46	38	36	34	34	34	31	31	31	31	31	30	-	-	-	-	-	-	-	-	34
May Only	→	→	→	→	43	40	38	38	38	34	34	34	34	34	33	33	-	-	-	-	-	-	-	36
Jun Only	→	→	→	→	→	42	40	40	40	37	37	36	37	37	36	36	30	-	-	-	-	-	-	37
Jul Only	→	→	→	→	→	→	41	41	41	38	38	37	38	38	37	37	31	30	-	-	-	-	-	37
Aug Only	→	→	→	→	→	→	→	43	43	40	40	40	40	40	39	38	32	31	30	-	-	-	-	38
Sep Only	→	→	→	→	→	→	→	→	47	43	43	43	43	43	42	41	34	33	32	32	-	-	-	40
Oct Only	→	→	→	→	→	→	→	→	→	43	43	43	43	43	42	41	34	33	32	32	32	-	-	39
Nov Only	→	→	→	→	→	→	→	→	→	→	43	43	43	43	42	41	34	33	32	32	32	29	-	37
Dec Only	→	→	→	→	→	→	→	→	→	→	→	43	43	43	42	41	34	33	32	32	32	29	29	36

Table 164. Percent of months curtailments would occur throughout the year when initiating a curtailment event in one particular month versus any month for the threshold, Inflow ≤ 101,500 and SPI ≤ -0.12.

Curtailment Initiation	Inflow ≤ 101,500 & SPI ≤ -0.17																							
	Percent of Months Curtailed																							
	% of all Jans	% of all Febs	% of all Mars	% of all Aprs	% of all Mays	% of all Juns	% of all Juls	% of all Augs	% of all Seps	% of all Octs	% of all Novs	% of all Decs	% of all Jans	% of all Febs	% of all Mars	% of all Aprs	% of all Mays	% of all Juns	% of all Juls	% of all Augs	% of all Seps	% of all Octs	% of all Novs	% of all Months
Any Month	40	37	37	40	37	38	38	40	40	39	38	38	-	-	-	-	-	-	-	-	-	-	-	38
Jan Only	40	37	37	36	29	28	28	28	27	24	23	23	-	-	-	-	-	-	-	-	-	-	-	30
Feb Only	→	37	37	36	29	28	28	28	27	24	23	23	23	-	-	-	-	-	-	-	-	-	-	28
Mar Only	→	→	37	36	29	28	28	28	27	24	23	23	23	22	-	-	-	-	-	-	-	-	-	27
Apr Only	→	→	→	40	32	30	30	29	28	26	24	24	24	23	23	-	-	-	-	-	-	-	-	28
May Only	→	→	→	→	37	34	33	32	31	29	28	27	28	27	27	26	-	-	-	-	-	-	-	30
Jun Only	→	→	→	→	→	38	37	36	34	32	31	31	31	30	30	29	24	-	-	-	-	-	-	32
Jul Only	→	→	→	→	→	→	38	37	36	33	32	32	32	30	30	29	24	23	-	-	-	-	-	31
Aug Only	→	→	→	→	→	→	→	40	38	36	34	34	34	32	32	31	27	26	26	-	-	-	-	32
Sep Only	→	→	→	→	→	→	→	→	40	38	37	36	37	34	34	33	28	27	27	27	-	-	-	33
Oct Only	→	→	→	→	→	→	→	→	→	39	38	37	38	36	36	34	29	28	28	28	27	-	-	33
Nov Only	→	→	→	→	→	→	→	→	→	→	38	37	38	36	36	34	29	28	28	28	27	24	-	32
Dec Only	→	→	→	→	→	→	→	→	→	→	→	38	39	37	37	36	29	28	28	28	27	24	23	31

Table 165. Percent of months curtailments would occur throughout the year when initiating a curtailment event in one particular month versus any month for the threshold, Inflow ≤ 89,100 and SPI ≤ -0.35.

Curtailment Initiation	Inflow ≤ 89,100 & SPI ≤ -0.35																							
	Percent of Months Curtailed																							
	% of all Jans	% of all Febs	% of all Mars	% of all Aprs	% of all Mays	% of all Juns	% of all Juls	% of all Augs	% of all Seps	% of all Octs	% of all Novs	% of all Decs	% of all Jans	% of all Febs	% of all Mars	% of all Aprs	% of all Mays	% of all Juns	% of all Juls	% of all Augs	% of all Seps	% of all Octs	% of all Novs	% of all Months
Any Month	33	33	34	38	30	29	29	32	32	33	33	33	-	-	-	-	-	-	-	-	-	-	-	33
Jan Only	33	33	33	32	24	23	23	23	21	19	19	18	-	-	-	-	-	-	-	-	-	-	-	25
Feb Only	→	33	33	32	24	23	23	23	21	19	19	18	17	-	-	-	-	-	-	-	-	-	-	24
Mar Only	→	→	34	33	26	24	24	24	22	20	20	19	18	18	-	-	-	-	-	-	-	-	-	24
Apr Only	→	→	→	38	28	26	26	26	23	21	21	20	19	19	19	-	-	-	-	-	-	-	-	24
May Only	→	→	→	→	30	28	28	28	26	23	23	22	21	21	21	20	-	-	-	-	-	-	-	24
Jun Only	→	→	→	→	→	29	28	28	26	23	23	22	21	21	21	20	16	-	-	-	-	-	-	23
Jul Only	→	→	→	→	→	→	29	29	27	24	24	23	22	22	22	21	17	16	-	-	-	-	-	23
Aug Only	→	→	→	→	→	→	→	32	30	28	27	25	24	24	24	23	19	18	18	-	-	-	-	24
Sep Only	→	→	→	→	→	→	→	→	32	30	29	27	27	27	27	26	21	20	20	20	-	-	-	25
Oct Only	→	→	→	→	→	→	→	→	→	33	31	30	29	29	29	28	22	21	21	21	19	-	-	26
Nov Only	→	→	→	→	→	→	→	→	→	→	33	32	31	31	31	30	23	22	22	22	20	18	-	26
Dec Only	→	→	→	→	→	→	→	→	→	→	→	33	32	32	32	31	23	22	22	22	20	18	18	26

Table 166. Percent of months curtailments would occur throughout the year when initiating a curtailment event in one particular month versus any month for the threshold, Inflow ≤ 79,100 and SPI ≤ -0.01.

Curtailment Initiation	Inflow ≤ 79,100 & SPI ≤ -0.01																							
	Percent of Months Curtailed																							
	% of all Jans	% of all Febs	% of all Mars	% of all Aprs	% of all Mays	% of all Juns	% of all Juls	% of all Augs	% of all Seps	% of all Octs	% of all Novs	% of all Decs	% of all Jans	% of all Febs	% of all Mars	% of all Aprs	% of all Mays	% of all Juns	% of all Juls	% of all Augs	% of all Seps	% of all Octs	% of all Novs	% of all Months
Any Month	32	33	33	32	28	29	30	32	31	33	32	32	-	-	-	-	-	-	-	-	-	-	-	32
Jan Only	32	32	32	28	22	22	21	21	19	18	17	15	-	-	-	-	-	-	-	-	-	-	-	23
Feb Only	→	33	33	29	23	22	21	21	19	18	17	15	16	-	-	-	-	-	-	-	-	-	-	22
Mar Only	→	→	33	29	23	22	21	21	19	18	17	15	16	16	-	-	-	-	-	-	-	-	-	21
Apr Only	→	→	→	32	24	23	22	22	20	19	18	16	17	17	17	-	-	-	-	-	-	-	-	21
May Only	→	→	→	→	28	27	26	26	23	22	21	20	20	20	20	18	-	-	-	-	-	-	-	22
Jun Only	→	→	→	→	→	29	28	28	26	24	23	22	22	22	22	20	16	-	-	-	-	-	-	23
Jul Only	→	→	→	→	→	→	30	29	27	26	24	23	23	23	23	21	17	17	-	-	-	-	-	24
Aug Only	→	→	→	→	→	→	→	32	30	29	28	26	27	27	27	24	20	20	19	-	-	-	-	26
Sep Only	→	→	→	→	→	→	→	→	31	30	29	27	28	28	28	24	20	20	19	19	-	-	-	25
Oct Only	→	→	→	→	→	→	→	→	→	33	32	31	31	31	31	27	21	21	20	20	18	-	-	26
Nov Only	→	→	→	→	→	→	→	→	→	→	32	31	31	31	31	27	21	21	20	20	18	17	-	25
Dec Only	→	→	→	→	→	→	→	→	→	→	→	32	32	32	32	28	22	22	21	21	19	18	17	25