



— BUREAU OF —  
RECLAMATION

# Summary of Operations for Water Year 2020 for North Platte River Basin Reservoirs

Seminole, Kortez, Pathfinder, Alcova, Gray Reef, Glendo, Guernsey,  
and Inland Lakes

Annual Operating Plan



Guernsey Reservoir Spillway, Wyoming

Wyoming Area Office  
Missouri Basin Region

## **Mission Statements**

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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# Preface

This report documents the operation of all Bureau of Reclamation (Reclamation) facilities in the North Platte River Drainage Basin above and including Guernsey Dam and the four Inland Lakes near Scottsbluff, Nebraska. This area of the North Platte River Drainage Basin is simply referred to in this report as the Basin.

References to average in this document will refer to the average of the historical record for the years 1990-2019, except for water year (WY) 2021 information which uses the years 1991-2020. In each coming year this period will be advanced by one year to maintain a running 30-year average.

# Introduction

The System of dams, reservoirs, and powerplants on the North Platte River (referred to as the "System" in this text) is monitored and in most cases operated and managed from the Wyoming Area Office in Mills, Wyoming. The operation and management of the System is aided by the use of a Programmable Master Supervisory Control, computerized accounting processes, an extensive network of Hydromet stations, control crest measurement weirs at gaging stations, snow telemetry (SNOTEL) stations, and a snowmelt runoff forecasting procedure used by the Water Management Branch. The System consists of a number of individual water resource projects that were planned and constructed by Reclamation. The individual projects and features are operated as an integrated system to achieve efficiencies that increase multipurpose benefits. The drainage basin which affects the System covers an area from northern Colorado to southeastern Wyoming, encompassing 16,224 square miles. Storage reservoirs in the System include four off stream reservoirs known as the Inland Lakes in western Nebraska as shown in Figure 21.

Approximately 70 percent to 80 percent of the annual North Platte River streamflow above Seminoe Dam occurs from snowmelt runoff during the April-July period. Primary water demand is irrigation, and the period of delivery of irrigation water normally extends from May through September. Figure 20 represents historical watershed runoff above Pathfinder Reservoir from 1906 through 2020. The System furnishes irrigation water to over 440,000 acres of land in Wyoming and Nebraska.

The System includes the Kendrick Project (formerly Casper-Alcova) in Wyoming; with major features of the project being Seminoe Dam and Powerplant, Alcova Dam and Powerplant, and Casper Canal. Kendrick Project lands lie on the northwest side of the North Platte River between Alcova Reservoir and Casper, Wyoming. The North Platte Project in Wyoming and Nebraska consists of Pathfinder Dam and Reservoir; Guernsey Dam, Reservoir and Powerplant; Whalen Dam; Northport, Fort Laramie, and Interstate canals; and four off stream inland reservoirs on the Interstate Canal. The Kortes Unit of the Pick-Sloan Missouri Basin Program (PS-MBP) consists of Kortes Dam, Reservoir, and Powerplant, in a narrow gorge of the North Platte River, 2 miles below Seminoe Dam. The Glendo Unit of the PS-MBP is a multiple-purpose natural resource development. It consists of Glendo Dam, Reservoir, and Powerplant; Fremont Canyon Powerplant; and Gray Reef Dam and Reservoir which is a re-regulating reservoir immediately downstream of Alcova Dam.

Major contributing rivers of the water supply in the System are the North Platte River in Colorado, the Medicine Bow River, and Sweetwater River in Wyoming.

The System has seven main stem reservoirs, six of which have powerplants with generating capacities totaling 239,200 kilowatts (kw). Table 12 depicts a breakdown of generating units and their capacity for each North Platte Powerplant. Table 1 below depicts North Platte River Reservoir Data.

The Department of Energy, by Executive Order dated October 1, 1977, assumed the responsibility of marketing power from Federal resources and operation and maintenance of federal transmission facilities.



Western Area Power Administration (Western) of the Department of Energy, headquartered in Lakewood, Colorado, now operates and maintains the nearly 3,500 miles of interconnected electrical transmission lines within the System. The power generating facilities are also interconnected with other federal, public and private power facilities. Power from Reclamation Powerplants is marketed by Western.

Table 1: North Platte River Reservoir Data

Reservoir (Date Completed)	Dead Storage <sup>1</sup> Acre-feet (AF)	Active Storage <sup>2</sup> (AF)	Total Storage (AF)	Minimum Storage (AF)	Minimum Elevation (feet)
Seminole (1939)	556	1,016,717	1,017,273	31,670 <sup>4</sup>	6,239.00 <sup>4</sup>
Kortes (1951)	151	4,588	4,739	1,666 <sup>4</sup>	6,092.00 <sup>4</sup>
Pathfinder (1909)	7	1,069,993	1,070,000	31,405 <sup>4</sup>	5,746.00 <sup>4</sup>
Alcova (1938)	91	184,314	184,405	137,610 <sup>5</sup>	5,479.50 <sup>5</sup>
Gray Reef (1961)	56	1,744	1,800	56 <sup>6</sup>	5,312.00 <sup>6</sup>
Glendo (1958)	7,010	756,029	763,039 <sup>3</sup>	51,573	4,570.00 <sup>7</sup>
Guernsey (1927)	0	45,612	45,612	0	4,370.00 <sup>8</sup>
<b>Total</b>	<b>7,871</b>	<b>3,078,997</b>	<b>3,086,868</b>	<b>253,980</b>	

1 - Storage capacity below elevation of lowest outlet

2 - Total storage minus dead storage

3 - Top of Conservation capacity 492,022 AF (Elevation 4,635.00 ft) with an additional 271,017 AF allocated to Flood Control (elevation 4,653.00 ft)

4 - Minimum water surface elevation and capacity required for power generation this level is the top of inactive capacity

5 - Content and minimum elevation required for power generation, however, water cannot be delivered to Casper Canal when reservoir level is below 5,487.00 ft (153,802 AF), the elevation of the Casper Canal Gate sill.

6 - Top of dead capacity – spillway crest

7 - Minimum water surface elevation for power generation

8 - Elevation of the North Spillway Crest

# System Planning and Control

The North Platte River storage, power generation, and water delivery facilities are operated for irrigation, hydroelectric power production, municipal, and industrial water supply. The facilities provide year-round flows in the river below each North Platte Dam except for Guernsey Dam. The facilities also provide flood control, recreation, fish and wildlife preservation. Each project of the System must be operated under the purposes for which it was authorized and constructed. The objective of an integrated system is to obtain optimum benefits from the individual projects.

The System's integrated operation is planned and coordinated by Reclamation's Wyoming Area Office in Mills, Wyoming. This office collects and analyzes information daily and makes the decisions necessary for successful operation of the System. The water management function involves coordination between Reclamation, the Department of Energy, and many other local, state, and Federal agencies. When water levels rise into the exclusive flood control pool at Glendo Reservoir, the flood control operation of Glendo Dam is directed by the U.S. Army Corps of Engineers, Omaha District in Omaha, Nebraska.

Experience has proven that optimum utilization of the available water resources in the System can be achieved only through careful budgeting of the anticipated water supply. The technical end product of this budgeting process is an Annual Operating Plan (AOP).

The System is operated on a water year basis (October 1 through September 30). Early in the water year an AOP is prepared, reviewed, and presented to the public. The AOP consists of three operation studies using reasonable minimum, reasonable maximum, and most probable inflow conditions determined from statistical analysis of historical inflow conditions. The AOP, as developed and reflected in the three operation studies, provides the flexibility to adjust operations as conditions change during the water year. Reclamation makes use of computer programs to revise and adjust the operating plan each month to reflect changing conditions. A computerized process of forecasting the anticipated water supply also aids the revision process during the months of February, March, April, and May. Figure 1 depicts North Platte Reservoirs Total Storage end of September content for water years 1912 through 2020. Table 2 depicts A Summary of Reservoir Storage Content for water year (WY) 2020 (end of month). Table 9 depicts the Actual Reservoir Operations for WY 2020.

Table 2: Summary of Reservoir Storage Content for Water Year 2020 (End of Month). Units of Acre-Feet.

	October	November	December	January	February	March	April	May	June	July	August	September
<b>Seminole Reservoir</b>												
Storage	803,808	803,302	800,611	794,084	793,417	748,348	659,565	782,807	850,880	751,528	689,021	658,563
Record <sup>1</sup>	8	6	6	5	6	4		10				
<b>Pathfinder Reservoir</b>												
Storage	865,494	871,433	874,812	882,397	890,029	957,789	1,024,235	971,613	863,717	737,824	668,378	650,503
Record <sup>1</sup>	4	5	4	8	6	3	1					
<b>Alcova Reservoir<sup>3</sup></b>												
Storage	156,922	156,538	157,328	157,034	157,170	158,121	180,596	179,815	180,107	180,669	180,303	179,766
Record <sup>1</sup>												
<b>Glendo Reservoir</b>												
Storage	203,014	244,075	284,456	324,215	358,763	402,574	374,404	397,873	408,553	329,507	168,140	135,044
Record <sup>1</sup>	5	3	6	6	7	8				8	8	9
<b>Guernsey Reservoir</b>												
Storage	7,436	10,750	13,427	16,639	19,755	28,181	28,537	28,004	28,359	28,162	29,093	4,516
Record <sup>1</sup>	7	9	8	6	7	5	11			11	10	
<b>Total System<sup>2</sup></b>												
Storage	2,042,988	2,092,170	2,136,734	2,180,325	2,225,089	2,301,547	2,273,852	2,366,556	2,338,057	2,034,126	1,740,889	1,634,283
Record <sup>1</sup>												

1 - Record high is the 30 year period from 1990-2019

2 - Total North Platte system includes storage in Seminole, Kortes, Pathfinder, Alcova, Gray Reef, Glendo and Guernsey Reservoirs

3 - Alcova Reservoir is normally maintained within either a winter operating range (between contents of 153,802 AF to 158,302 AF) or a summer operating range (between contents 177,070 AF to 181,943 AF)

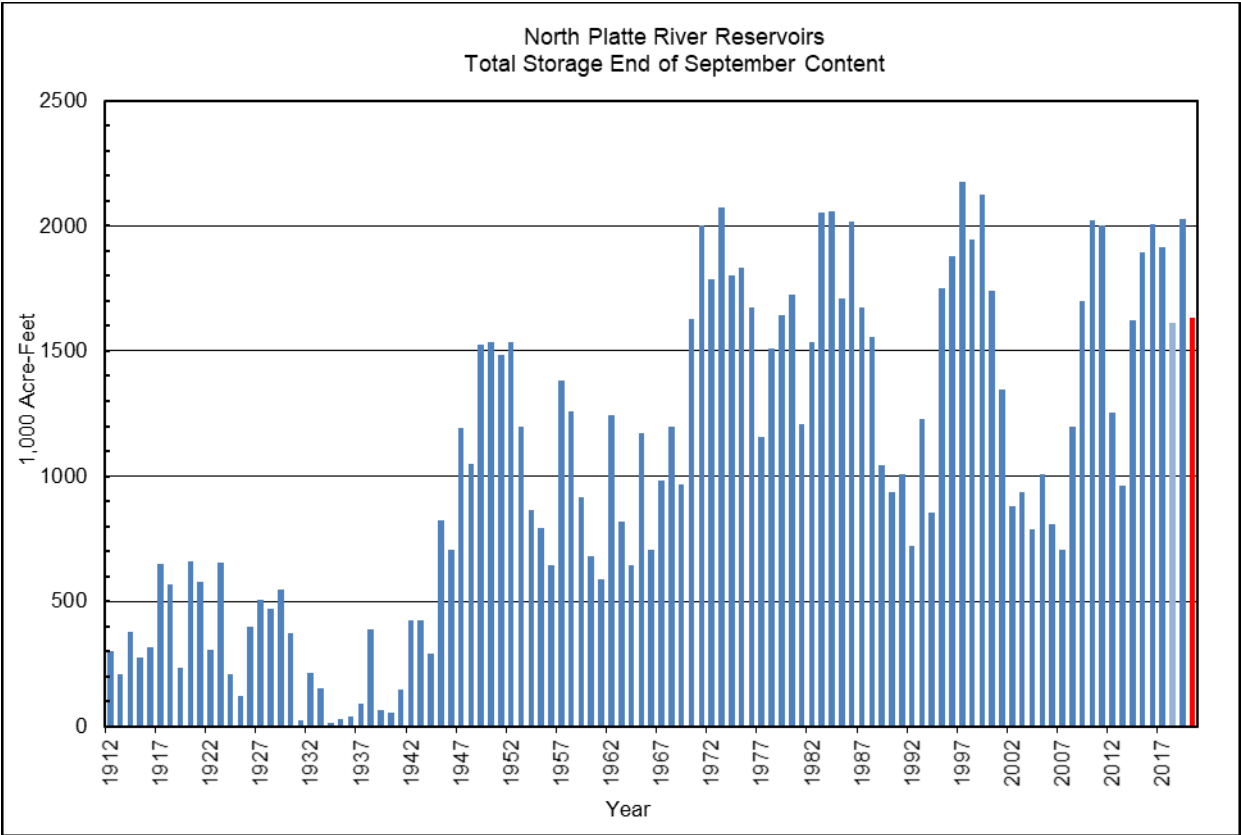


Figure 1: North Platte River Reservoirs Total Storage End of September Content (1912-2020).

# System Operations Water Year 2020

## Seminole Reservoir Inflow

Seminole Reservoir inflows were above the 30 year average for the first half of the water year, except for October, however the remainder of the water year was near or well below average for the year. A total of 864,478 acre-feet (AF) or 91 percent of the 30 year average entered the system above Seminole Reservoir during the water year. The monthly inflows ranged from a high of 127 percent of average in December and May to a low of 47 percent in July 2020. The actual April through July inflow totaled 632,390 AF, which was 89 percent of the 30 year average of 708,400 AF. The Seminole computed inflow peaked for the water year on June 3, 2020, at 7,554 cubic feet per second (cfs). Figure 2 depicts a comparison of average, WY 2019 and WY 2020 monthly inflows.

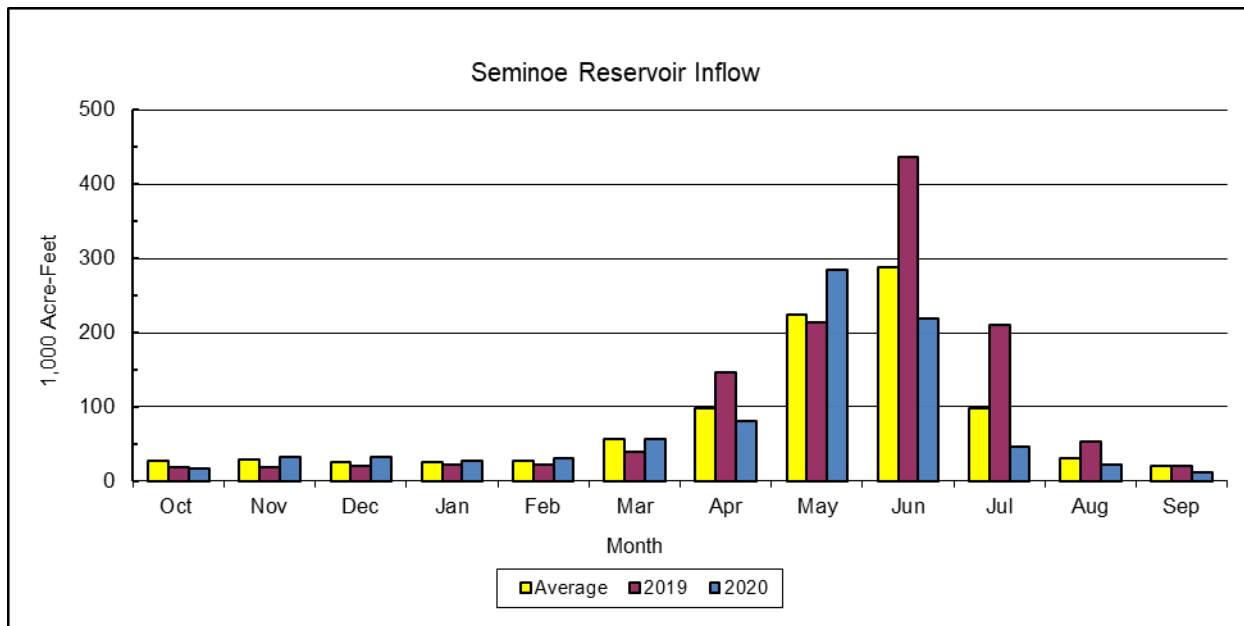


Figure 2: Seminole Reservoir Inflow.

## Seminole Reservoir Storage and Releases

Seminole Dam and Reservoir on the North Platte River is the main storage facility for the Kendrick Project. Construction of the dam was completed in 1939, providing a storage capacity of 1,017,273 AF. The Powerplant contains three electrical generating units with a total capacity of 42 mega-watts (MW) at a full release capability of about 4,050 cfs. The spillway consists of a concrete-lined tunnel through the right abutment controlled by three fixed-wheel gates with a release capability of close to 48,000 cfs. Two 60 inch jet flow valves provide a low level river outlet with a flow capacity of 3,420 cfs.

At the start of WY 2020, Seminole Reservoir had a storage content of 822,688 AF, which was 136 percent of average and 81 percent of capacity. The maximum Seminole Reservoir content was reached on June 16, 2020, at 871,353 AF. At the end of WY 2020, Seminole Reservoir storage content was 658,563 AF, which was 109 percent of average and 65 percent of capacity. See Figure 3 for a comparison of average, WY 2019 and WY 2020 monthly storage.

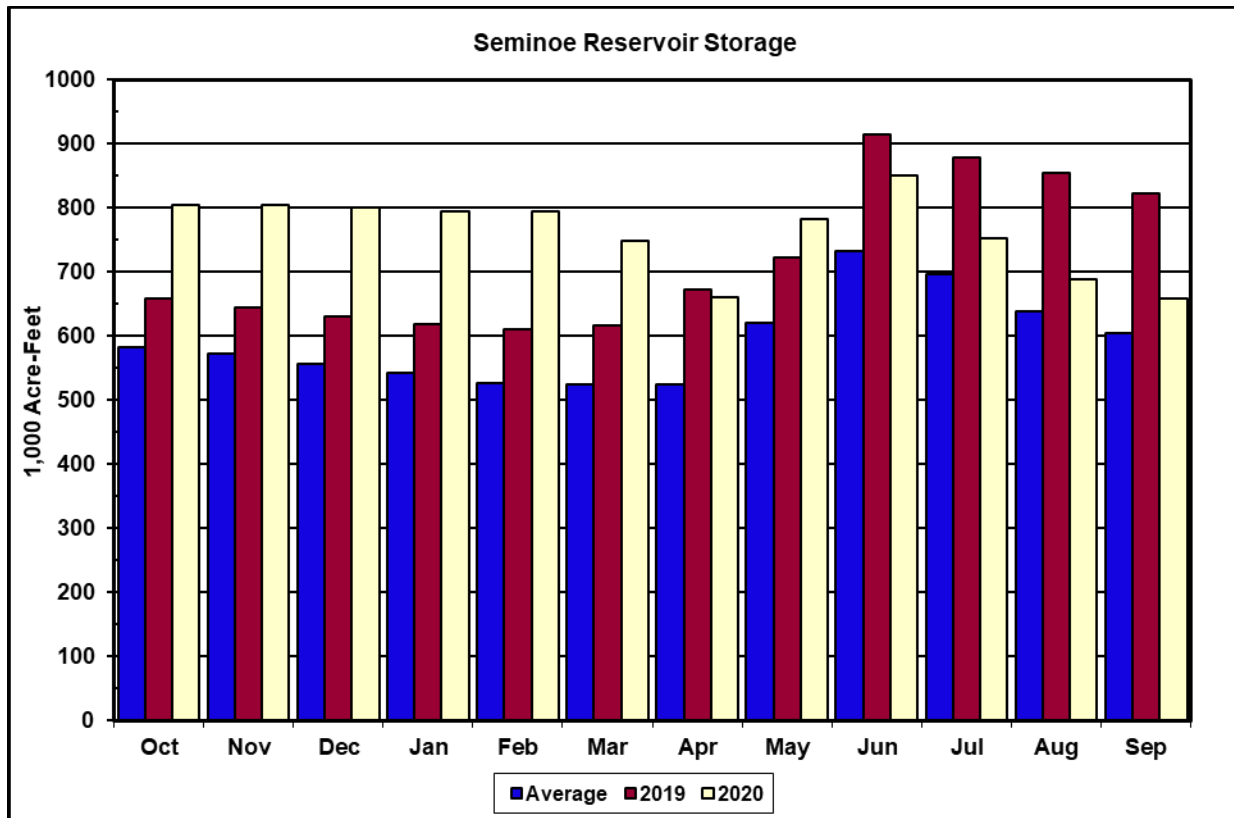


Figure 3: Seminole Reservoir Storage.

Releases from Seminole Dam averaged approximately 536 cfs in October 2019. The release remained at approximately 536 cfs through March 4, 2020. On March 5 Reclamation increased releases to approximately 1,850 cfs through April 18 and increased again to approximately 3,200 cfs and held this release until May 6. On May 7 Reclamation decreased releases down to approximately 2,400 cfs and held there until July 15 and decreased again down to 2,000 cfs and maintained this flow until the end of July. On August 1 Reclamation cut releases to 1,500 cfs until the August 19 and cut again to approximately 800 cfs until August 8. The last cut was on August 9 down to 550 cfs to deliver the remaining EA water to Nebraska which ended on September 30. The maximum releases of 3,296 cfs was reached on April 21, 2020.

Table 3: Seminole Reservoir Storage Allocations.

Reservoir Allocations	Elevation (FT)	Storage (AF)	Storage Allocation (AF)
Top of Inactive and Dead	6,239.00	31,670	31,670
Top of Active Conservation	6,357.00	1,017,273	985,603
Crest of Dam (without Camber)	6,361.00		

Table 4: Seminole Reservoir Water Year Storage Data.

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of water year	6,346.60	822,688	30-Sep-19 <sup>2</sup>
End of water year	6,346.60	658,563	30-Sep-20
Annual Low	6,336.14	658,563	30-Sep-20
Historic Low <sup>1</sup>	6,253.30	56,390	20-Apr-61
Annual High	6,349.37	871,353	16-Jun-20
Historic High <sup>1</sup>	6,359.29	1,073,050	20-Jun-49

1 - The daily records for this table are only available from water year 1946.

2 - Represents 0001 hours on October 1

Table 5: Seminole Reservoir Water Year Inflow and Outflow Data.

Inflow-Outflow Data	Inflow <sup>1</sup>	Date	Outflow	Date
Annual Total (AF)	864,478	Oct. 19 – Sep. 20	978,526	Oct. 19 – Sep. 20
Daily Peak (CFS) <sup>2</sup>	7,554	3-Jun-20	3,296	21-Apr-20
Daily Minimum (CFS) <sup>2</sup>	8	27-Sep-19	491	10-Jan-20

1 - Inflows are a computed number.

2 - Daily peak and minimum are releases to the river.

Table 6: Monthly Computed Inflows, Outflows, and Contents for Seminole Reservoir, Water Year 2020.

Month	Inflow (KAF)	Inflow % of Avg. <sup>1</sup>	Outflow (KAF)	Outflow % of Avg. <sup>1</sup>	Content (KAF) <sup>2</sup>	Content % of Avg. <sup>1,2</sup>
October	17	62	33	91	803.8	138
November	32.2	111	32.1	86	803.3	140
December	32.3	127	33.2	83	800.6	144
January	28.1	110	31.1	84	794.1	146
February	31	116	31.1	75	793.4	151
March	57.5	101	101.1	174	748.3	143
April	81.1	83	166.9	175	659.6	126
May	285.3	127	156.4	127	782.8	126
June	219.9	76	143	85	850.9	116
July	46.1	47	135.3	107	751.5	108
August	21.9	70	76.3	92	689	108
September	12.2	61	37.1	75	658.6	109
<b>Annual</b>	<b>864.5</b>	<b>91</b>	<b>978.5</b>	<b>109</b>		

1 - The 30 year average is the period (1990-2019)

2 - End of month

## Kortes Reservoir Storage and Releases

Completed in 1951, Kortes Dam, Reservoir, and Powerplant of the Kortes Unit (Pick-Sloan Missouri Basin Project) are located about 2 miles below Seminole Dam. It was the first unit initiated by the Bureau of Reclamation under the Missouri River Basin Project. Kortes Reservoir provides a total storage capacity of 4,739 AF at elevation 6,142.0 feet, the level of the spillway crest. Kortes Powerplant has three electrical generating units with a total capacity of 40 MW and a release capability of approximately 2,700 cfs. Water released from Seminole Dam to Pathfinder Reservoir passes through the Kortes turbines to generate power. Maximum benefits are obtained when Kortes Reservoir remains full and the power releases are coordinated with those from Seminole Powerplant to maintain a full reservoir.

The spillway on the right abutment consists of an uncontrolled crest with a concrete-lined tunnel and has a capacity of 50,000 cfs.

Senate Bill 2553 which was passed in the ninetieth Congress authorized the modification of the operation of Kortes Dam and Powerplant to provide a minimum streamflow of 500 cfs in the North Platte River between Kortes Reservoir and the normal headwaters of Pathfinder Reservoir. The minimum flow permits maintenance of a fishery in a stretch of the North Platte River commonly referred to as the "Miracle Mile".



Kortes releases averaged approximately 537 cfs in October 2019 and increased to approximately 1,850 cfs in early April 2020 and remained there until the first of May. An increase was made in early May to approximately 2,650 cfs and later increased by late April during the early spring runoff to a peak of approximately 3,200 cfs. The Kortes Dam release peaked at 3,317 cfs on April 21, 2020. Releases were decreased to approximately 2,350 cfs by early May. Mid July releases were cut to 2,000 cfs and remained there until August 1 and were cut again to 1,500 cfs. Releases were decreased to approximately 800 cfs on August 20, 2020 and decreased to the winter flow of 540 cfs by mid-September.

## Gains to the North Platte River from Kortes Dam to Pathfinder Dam

Kortes Dam to Pathfinder Dam river gains were below or near average for 7 months of WY 2020. The Kortes Dam to Pathfinder Dam river gains ranged from 109 percent of average in January 2020 to -130 percent in August WY 2020. The Total river gains were 24,100 AF, which is 21.2 percent of the 30 year average of 113,300 AF. Figure 4 depicts a comparison of average, WY 2019 and WY 2020 monthly river gains.

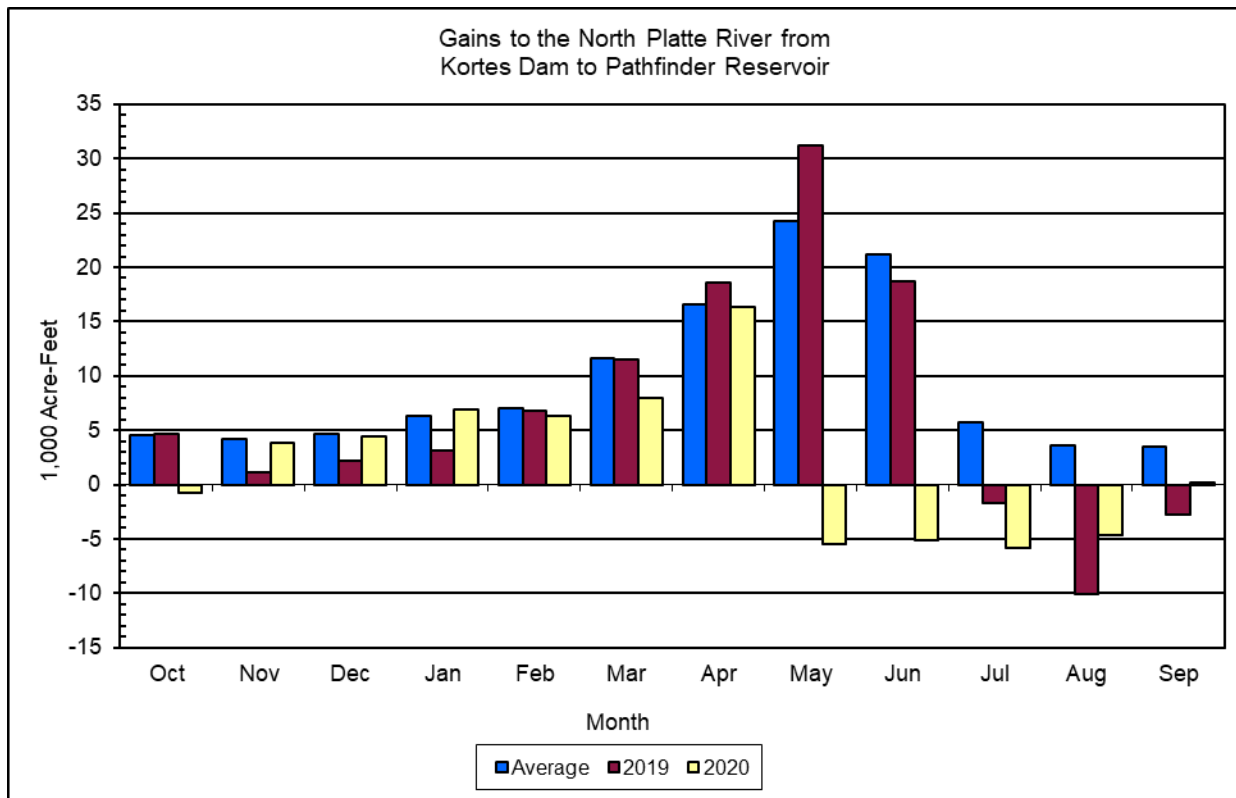


Figure 4: Gains to the North Platte River from Kortes Dam to Pathfinder Reservoir.

## Pathfinder Reservoir Storage and Releases

Pathfinder Dam and Reservoir, a major storage facility of the North Platte Project, has a total capacity of 1,070,000 AF at elevation 5,852.49 feet. Construction of the dam was completed in 1909. Operationally, this structure is a bottleneck in the System with its maximum non-spillway release capability of approximately 6,000 cfs. The rated capacity of the left abutment outlet works through the two 60-inch jet flow gates is approximately 3,000 cfs at elevation 5,852.49 feet. The flow capacity range of the 30-inch jet flow gate is from approximately 50 to 450 cfs. Depending on the elevation of the reservoir, as much as 3,080 cfs can be released through the Fremont Canyon Power conduit and discharged from the Fremont Canyon turbines at the Powerplant 3 miles downstream. Re-conditioning of Unit 2 of the Fremont Canyon Powerplant was completed in August 2012. Re-conditioning of Unit 1 was completed late July 2013. The 33.4 MW nameplate rating of the two units has not changed. Total rating of these two units is 66.8 MW.

Reconstruction of the Pathfinder spillway was completed in 2012. The spillway crest was raised approximately 2.4 feet to elevation 5,852.49 feet. The crest of the uncontrolled spillway on the left abutment of the dam was reconfigured from a flat-crested natural rock weir to an ogee-crested concrete weir. A spill occurs any time the reservoir water surface exceeds 5,852.49 feet. The calculated discharge capacity of the spillway is 32,449 cfs at reservoir elevation 5,858.10 feet.

At the start of WY 2020, storage in Pathfinder Reservoir was 844,737 AF, which was 152 percent of average and 79 percent of capacity. Pathfinder storage was above the 30 year average for WY 2020 (See Figure 5). The maximum Pathfinder Reservoir content for the water year peaked on July 15, 2020, at 1,030,450 AF which is 96 percent of capacity. The water year ended with 650,503 AF of water in storage in Pathfinder Reservoir, which was 128 percent of average and 61 percent of capacity. An average release of 129 cfs of water from Pathfinder Reservoir during October was maintained during the gradual drawdown of Alcova Reservoir to its winter operating range. At the request of the Wyoming Game and Fish Department a year-round flow of 75 cfs was provided to the river below Pathfinder Dam. The 75 cfs minimum flow is provided through the 30-inch jet-flow valve except when the 60-inch jet-flow valve is needed to supplement Fremont Canyon releases to make required irrigation deliveries. The river below Pathfinder Dam reached a maximum flow of 2,958 cfs on May 29, 2020. Table 4 depicts a summary of Pathfinder Reservoir storage for average, WY2019 and WY 2020.

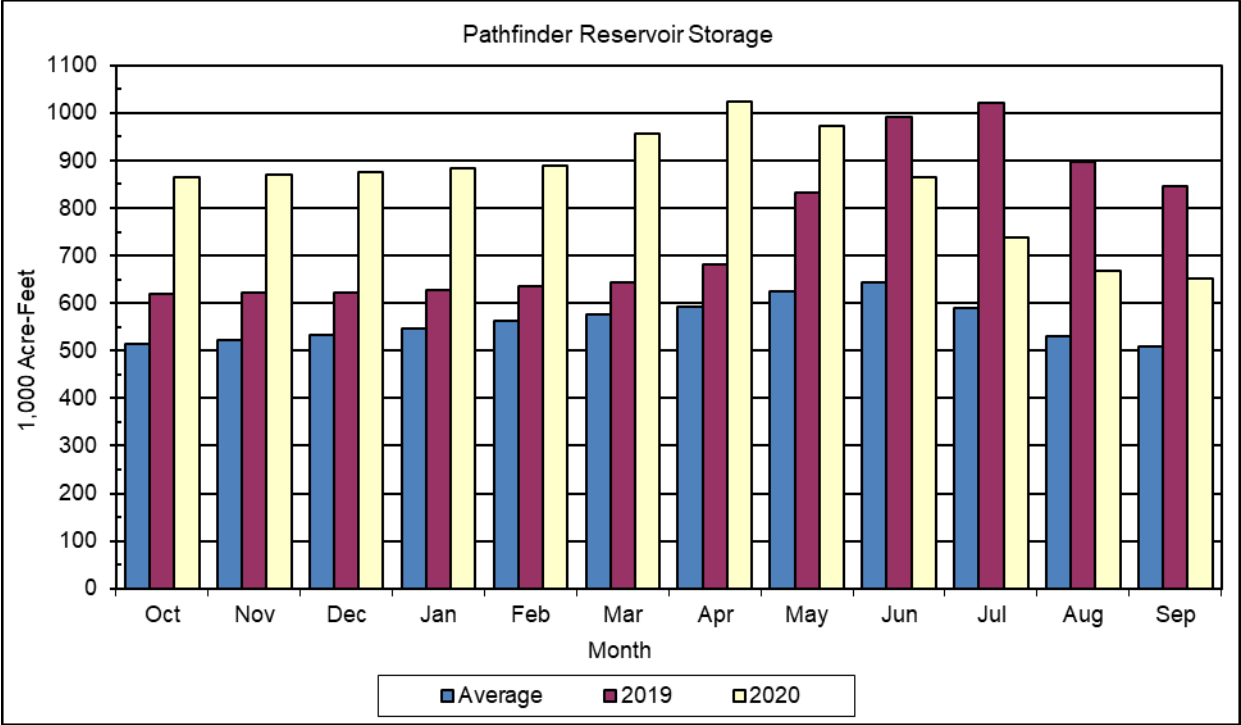


Figure 5: Pathfinder Monthly Reservoir Storage.

Table 7: Pathfinder Reservoir Storage Allocations.

Reservoir Allocations	Elevation (FT)	Storage (AF)	Storage Allocation (AF)
Top of Inactive	5,746.00	31,405	31,405
Top of Active Conservation	5,852.49	1,070,000	1,038,595
Crest of Dam (without Camber)	5,858.10		

Table 8: Pathfinder Reservoir Water Year Storage Data.

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of water year	5,841.81	844,737	Oct 1, 2019 <sup>3</sup>
End of water year	5,830.77	650,503	Sept. 30, 2020
Annual Low	5,830.77	592,312	Sept. 29, 2020
Historic Low <sup>2, 3</sup>	5,690.00	0	Sept. 9, 1958
Annual High	5,850.73	1,030,450	May 6, 2020
Historic High <sup>1</sup>	5,853.49	1,093,275	June 2, 2016

1 - Daily records for this table are only available from water year 1946

2 - From September 1958 through January 1959, Pathfinder Reservoir was drained for construction of Fremont Canyon tunnel.

3 - Represents 0001 hours on October 1.

Table 9: Pathfinder Reservoir Water Year Inflow and Outflow Data.

Inflow-Outflow Data	Inflow	Date	Outflow <sup>1</sup>	Date
Annual Total (AF)	1,002,395	Oct. 19 – Sep. 20	1,133,776	Oct. 19 – Sep. 20
Daily Peak (CFS)	4,067	Apr 23, 2020	4,435	Jun 2, 2020
Daily Minimum (CFS)	57	Oct. 28, 2019	7	Oct. 9, 2010

1 - At the request of the Wyoming Game and Fish Department a yearly, minimum flow of 75 cfs will be provided through the Pathfinder Reservoir 30 inch jet-flow valve to the river below Pathfinder Dam. Spillway and additional releases were made in WY 2020 that resulted in a peak flow of 1,048 cfs.

Table 10: Monthly Computed Inflows, Outflows, and Contents for Pathfinder Reservoir, Water Year 2020.

Month	Gain from Kortes (KAF)	Gain from Kortes % of Avg. <sup>1</sup>	Inflow (KAF) <sup>2</sup>	Inflow <sup>2</sup> % of Avg. <sup>1</sup>	Outflow (KAF)	Outflow % of Avg. <sup>1</sup>	Content <sup>4</sup> (KAF)	Content <sup>4</sup> % of Avg. <sup>1</sup>
October	-0.8	NA <sup>3</sup>	32.2	79	7.9	61	865.5	168
November	3.8	91	35.9	86	29.3	91	871.4	167
December	4.4	94	37.7	85	32.1	99	874.8	164
January	6.9	109	40	87	30.5	93	882.4	162
February	6.3	91	37.4	77	29.1	95	890	158
March	7.9	68	109	156	39.5	73	957.8	166
April	16.4	99	183.2	164	112.3	122	1,024.20	173
May	-5.5	NA <sup>3</sup>	151	103	194.9	177	971.6	156
June	-5.2	NA <sup>3</sup>	137.8	73	234.4	144	863.7	134
July	-5.8	NA <sup>3</sup>	129.5	98	243	138	737.8	179
August	-4.7	NA <sup>3</sup>	71.6	83	131.4	94	668.4	126
September	0.2	4	37.2	71	49.3	72	650.5	128
<b>Annual</b>	<b>24.1</b>	<b>21</b>	<b>1002.4</b>	<b>99</b>	<b>1133.8</b>	<b>85</b>		

1 - 30 year average is the period (1990-2019)

2 - The inflow includes the gain from Kortes Dam to Pathfinder Dam.

3 - Represents a negative number that makes the percentage meaningless.

4 - End of Month

## Alcova and Gray Reef Reservoirs Storage and Releases

Alcova Dam and Reservoir is part of the Kendrick Project. The dam serves as a diversion dam for the Casper Canal and the reservoir as a forebay for the Alcova Powerplant. The dam, located about 10 miles downstream from Pathfinder Dam, was completed in 1938. Reservoir storage capacity is about 184,405 AF at elevation 5,500 feet, of which only the top 30,603 AF is active capacity available for irrigation of the Kendrick Project. The Powerplant consists of two electrical generating units with a total installed capacity of 36 MW at a full release capability of about 4,100 cfs. The spillway is a concrete lined open channel in the left abutment of the dam controlled by three 25 by 40 foot gates with a capacity of 55,000 cfs at a reservoir level of 5,500 feet. The reservoir is typically operated during the irrigation season, May through September, at a level of 5,498 feet msl and at 5,488 feet msl for the remainder of the year. A higher operating level is maintained during the summer months to provide adequate head on the Casper Canal, while the lower winter operating level reduces the potential for ice damage to the canal gate.

The annual drawdown of Alcova Reservoir began on October 1, 2019, and continued through October 31, 2019, when the reservoir reached its normal winter operating range of 5,488 + one foot. The refill of Alcova Reservoir was initiated on April 1, 2020. The water surface elevation was raised to 5,498 feet on April 30, 2020, and the reservoir was maintained within one foot of elevation 5,498 feet throughout the irrigation season.

Gray Reef Dam and Reservoir is part of the Glendo Unit, Oregon Trail Division, Pick-Sloan Missouri Basin Program. The dam which was completed in 1961 is a three-zoned rock and earth fill structure located about 2.5 miles below Alcova Dam. The reservoir has an active capacity of 1,744 AF. Gray Reef Reservoir is operated to re-regulate widely fluctuating water releases from the Alcova Powerplant, and provide stable flow for irrigation, municipal, industrial, and fish and wildlife interests along the 147 miles of river between Alcova and Glendo Dams.

The Gray Reef releases were maintained at 500 cfs from October 1, 2019 through March 27, 2020. At the request of the Wyoming Game and Fish Department, a series of flushing flows were initiated on March 28 through April 6, 2020 for the purpose of flushing silt from spawning gravels used by trout. The flows were varied each day from 500 cfs to 4,000 for the next ten days. At the completion of the flushing flows, releases from Gray Reef were brought down to 500 cfs until April 8, 2020. Releases for the remainder of the water year were adjusted to meet irrigation demands below Guernsey Reservoir. The largest daily release of water for the water year occurred on July 18, 2020, at 3,605 cfs.

## **Gains to the North Platte River from Alcova Dam to Glendo Reservoir**

River gains from Alcova Dam to Glendo Reservoir were near or above average for 7 months of WY 2020. The Alcova Dam to Glendo Reservoir river gains ranged from a high of 147 percent in April 2020 to a low of 17 percent in August 2020. The April through July gain was 134,500 AF, which was 95 percent of average. The maximum computed daily river gain of 2,324 cfs occurred on May 5, 2020, and the daily computed Glendo Reservoir inflow peaked on May 5, 2020, at 4,709 cfs. Figure 6 depicts a comparison of average, WY 2019 and WY 2020 monthly river gains.

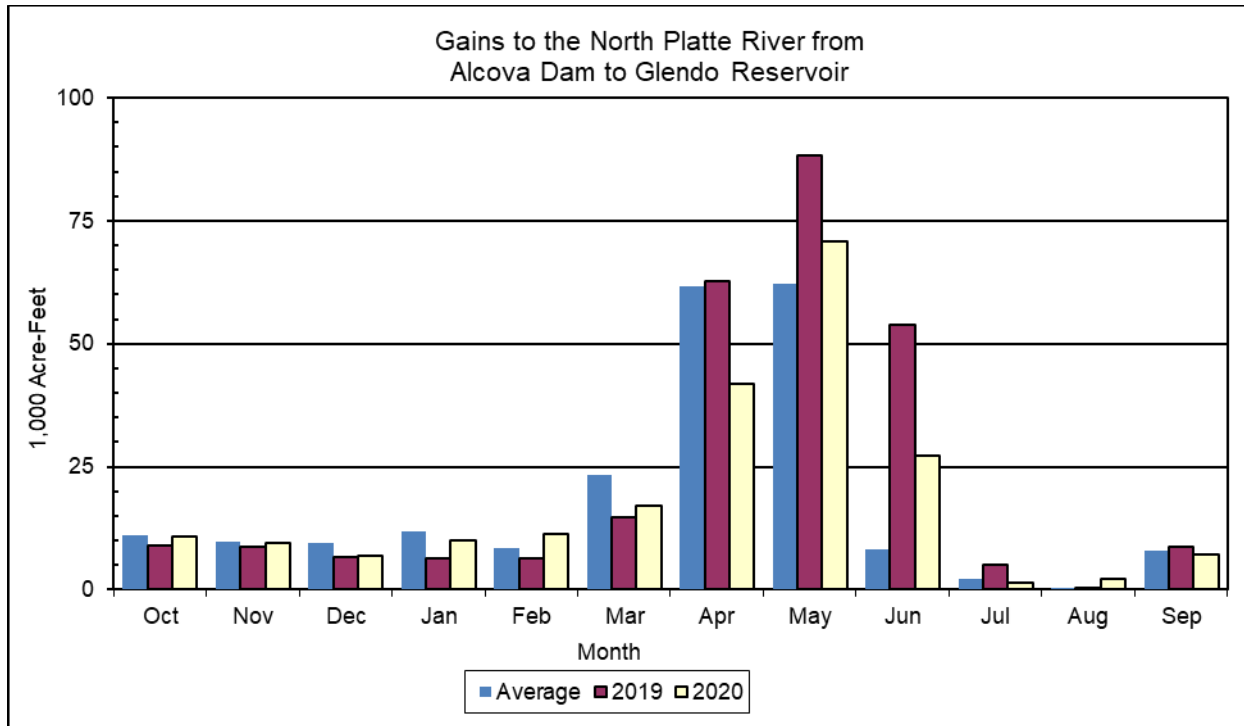


Figure 6: Gains to the North Platte River from Alcova Dam to Glendo Reservoir.

## Glendo Reservoir Storage and Releases

Glendo Dam and Reservoir is the only storage facility for the Glendo Unit. The reservoir has a storage capacity of 763,039 AF, including 271,017 AF allocated to flood control. Glendo Powerplant consists of two electrical generating units, with a total installed capacity of 38 MW. With both generating units operating at capacity and the reservoir water surface at elevation 4,635.0 feet, approximately 3,400 cfs can be released through Glendo Powerplant. The reinforced concrete spillway has an ungated ogee crest. The spillway capacity at elevation 4,669.0 feet, (6 feet below the crest of the dam), is 10,335 cfs.

The outlet works from Glendo Dam consist of the primary outlet works which discharge at the Powerplant, and the low-flow outlet which discharges to the river immediately below the dam. The three primary outlet gates can release a combined discharge of 13,000 cfs with the Powerplant shut down. During normal operation, when the reservoir elevation is below the top of conservation storage (4,635 feet), outlet works discharges should typically remain below 5,500 cfs. This precautionary practice is to minimize the potential for damage to the stilling basin and training walls. The low-flow outlet works are operated to maintain a continuous release of approximately 25 cfs. This provides a reliable water source for the downstream wetland area which results in associated fish and wildlife benefits. In the summer of 2015, the dam was raised 3 feet with a parapet wall, and the dikes on the south side of the reservoir were raised 6 feet.

Glendo Reservoir storage was 166,353 AF at the beginning of WY 2020, which was 130 percent of average and 34 percent of the active conservation of 492,022 AF. Water releases from Glendo Reservoir were initiated on March 24, 2020, in order to evacuate space in the upper system in

anticipation of a high spring runoff. April 21, 2020 the releases were increased to fill the Inland Lakes and continue evacuating reservoir system space. The reservoir reached a maximum storage for the year of 435,504 AF (elevation 4,630.04 feet) on June 13, 2020. At the end of the water year, Glendo Reservoir contained 135,044 AF of water (water surface elevation 4,591.77 feet) which was 103 percent of average and 27 percent of top of active conservation. Figure 7 depicts WY 2019 and WY 2020 end of month reservoir storage compared to average. Table 5 depicts a summary of Glendo Reservoir information for WY 2020.

Table 11: Glendo Reservoir Storage Allocations.

Reservoir Allocations	Elevation (FT)	Storage (AF)	Storage Allocation (AF)
Top of Inactive	4,570.00	51,573	51,573
Top of Active Conservation	4,635.00	492,022	440,449
Top of Exclusive Flood Control	4,653.00	763,039	271,017
Maximum water surface (surcharge)	4,669.00	1,092,290	329,251
Crest of Dam (without Camber)	4675		

Table 12: Glendo Reservoir Water Year Storage Data.

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of water year	4,618.50	166,353	Oct 1, 2019 <sup>1</sup>
End of water year	4,615.30	135,044	Sep 30, 2020
Annual Low	4,587.99	117,008	Sep 10, 2020
Historic Low	4,548.10	15,140	Sep 28, 1966
Annual High	4,630.04	435,504	June 13, 2020
Historic High	4,650.94	758,830	May 28, 1973

1 – Represents 0001 hours on October 1<sup>st</sup>.



Table 13: Glendo Reservoir Water Year Inflow and Outflow Data.

Inflow-Outflow Data	Inflow	Date	Outflow <sup>1</sup>	Date
Annual Total (AF)	1,225,658	Oct. 19 – Sep. 20	1,228,592	Oct. 19 – Sep. 20
Daily Peak (CFS)	4,709	5-May-20	7,480	26-Jul-20
Daily Minimum (CFS)	145	2-Dec-19	12	22-Sep-20
Peak Bypass Release (CFS)			2,958	29-May-20
Total Bypass Release (AF)			346,439 <sup>2</sup>	Oct. 19 – Sep, 20

1 -Includes the average daily release of approximately 25 cfs from the low flow outlet works for Apr-Sep.

2 - A low flow outlet works was completed in 1993 to allow for a release of 25 cfs.

Table 14: Monthly Computed Inflows, Outflows, and Contents for Glendo Reservoir, Water Year 2020.

Month	Gain from Alcova (KAF)	Gain from Alcova % of Avg. <sup>1</sup>	Inflow <sup>3</sup> (KAF)	Inflow <sup>3</sup> % of Avg. <sup>1</sup>	Outflow (KAF)	Outflow % of Avg. <sup>1</sup>	Content <sup>4</sup> (KAF)	Content <sup>4</sup> % of Avg. <sup>1</sup>
October	11.1	104	43.5	89	5.8	3086	203	117
November	9.7	101	43	100	1.7	1336	244.1	113
December	9.4	136	42.2	106	1.6	1066	284.5	112
January	11.8	118	41.7	99	1.5	1026	324.2	110
February	8.6	76	36.5	90	1.4	846	358.8	108
March	23.4	137	55.7	84	11.5	826	402.6	105
April	61.6	147	132.3	125	156.9	325	374.4	86
May	62.3	88	235.1	143	208	170	397.9	84
June	8.3	30	215.6	126	199	120	408.6	86
July	2.2	155	215.3	135	287.9	94	329.5	102
August	0.4	17	113.2	87	270	94	168.1	105
September	7.9	112	51.7	73	83	84	135	103
<b>Annual</b>	<b>216.8</b>	<b>100</b>	<b>1,225.60</b>	<b>113</b>	<b>1,228.60</b>	<b>117</b>		

1 - 30 year average is the period (1990-2019)

2 - 25 year average is the period (1994-2019) in 1993 a low flow valve was installed at Glendo Dam which allowed the release of 25 cfs during the non irrigation season. Therefore, a 25 year average is used for the months of October through March.

3 - Inflow include the gain from Alcova Dam to Glendo Dam.

4 - End of month

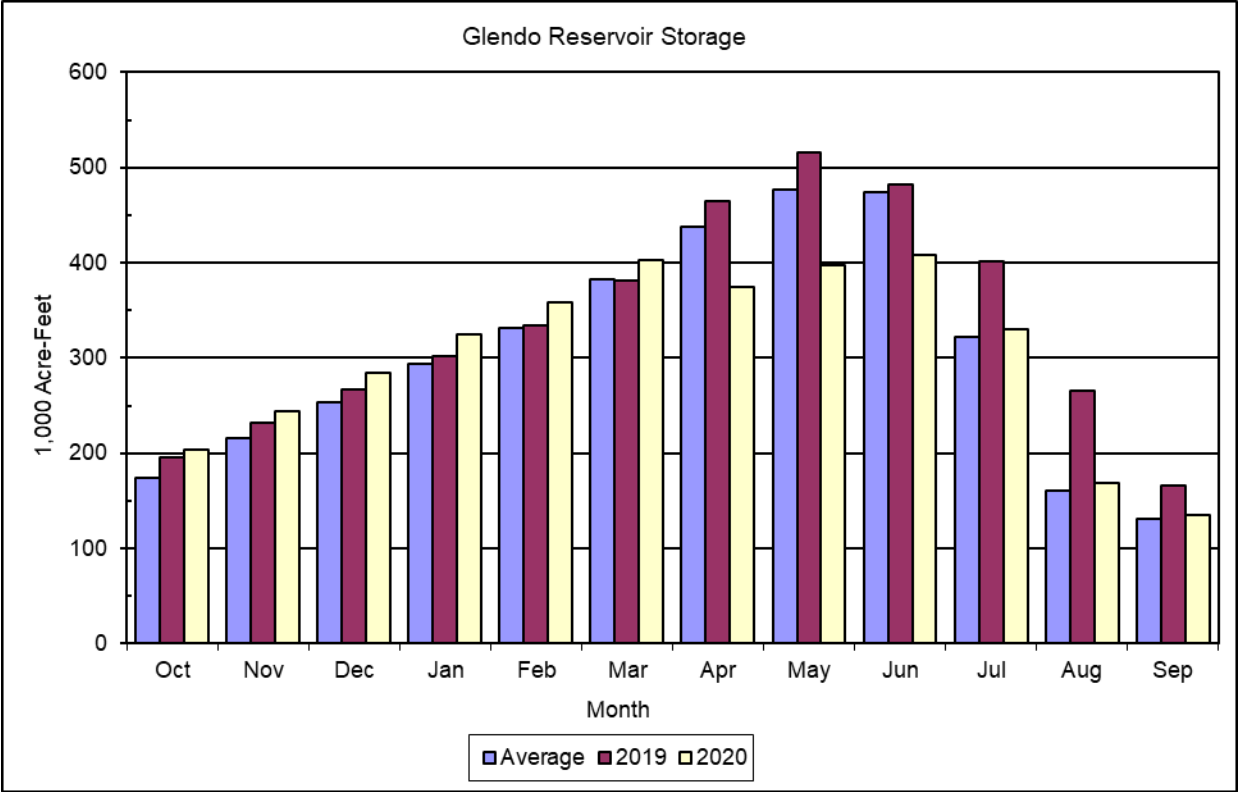


Figure 7: Glendo Reservoir Monthly Storage.

### Gains to the North Platte River from Glendo Dam to Guernsey Reservoir

The river gains between Glendo Dam and Guernsey Dam during WY 2020 were above average for 7 months of the year. October through April gains were well above average. The Glendo Dam to Guernsey Reservoir river gains ranged from a high of 223 percent of average in April 2020 to a low of 1 percent in May 2020. The August gains were negative which made a percentage value meaningless. On September 9, 2020, the daily computed gain to Guernsey Reservoir peaked at 893 cfs. Figure 8 depicts a comparison of average, WY 2019 and WY 2020 monthly river gains.

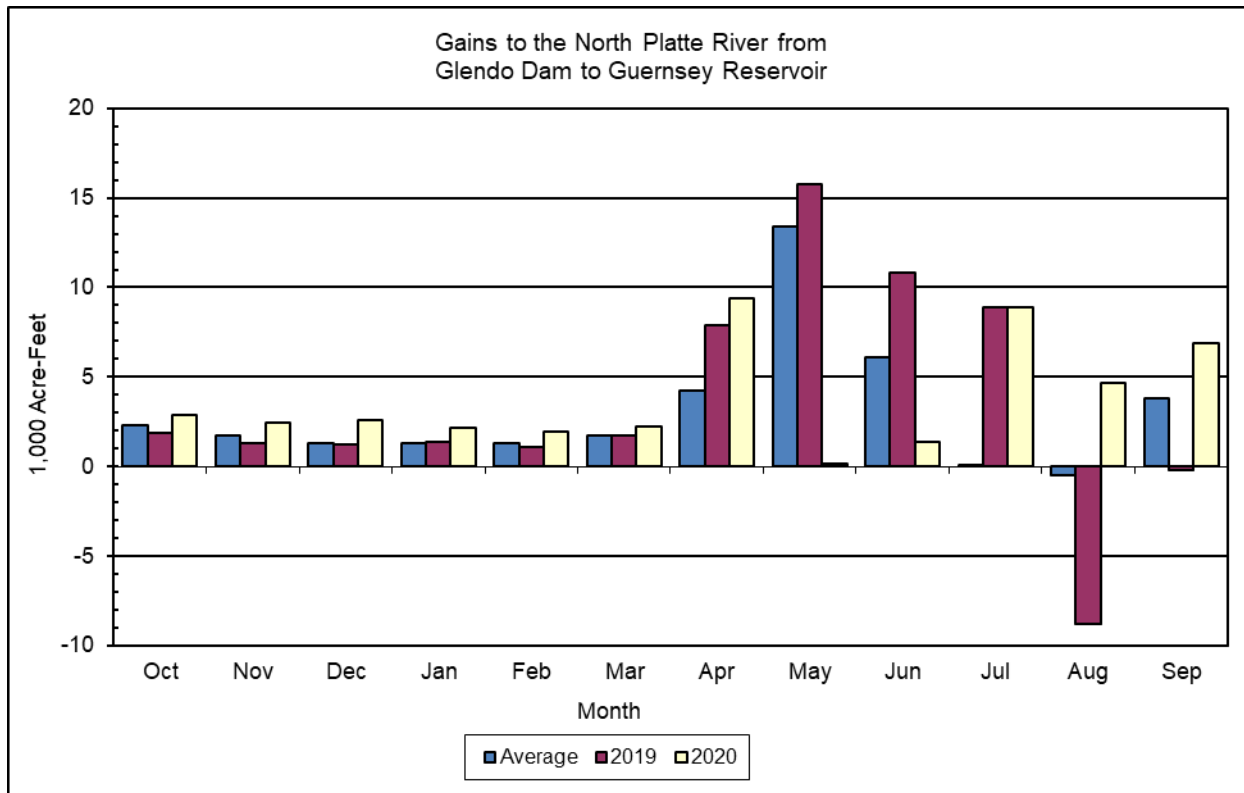


Figure 8: Gains to the North Platte River from Glendo Dam to Guernsey Reservoir.

## Guernsey Reservoir Storage and Releases

Guernsey Dam located about 25 miles below Glendo Dam, again stores and re-regulates the flow of the river prior to delivery of storage water to project lands of the North Platte Project and Glendo Unit. Guernsey Powerplant, located on the right abutment of the dam, has two 3.2 MW electrical generating units with a combined release capability of about 1,340 cfs. The windings of both units have been replaced resulting in the rating of 3.2 MW per unit. The north spillway gate, with a capacity of 50,000 cfs at a reservoir level of 4,420 feet, is utilized for irrigation releases to supplement the maximum powerplant releases.

The original capacity of the reservoir was 73,800 AF, but this has been greatly reduced by deposition of silt. Utilizing data from the 1980 Sedimentation Survey of Guernsey Reservoir, the March 1982 - Area Capacity Tables and Curves show about 45,612 AF of available storage.

At the beginning of WY 2020, storage in Guernsey Reservoir was at 6,0011 AF. Reclamation began filling Guernsey on March 24, 2020 and releases commenced on April 21, 2020 to move water into the Inland Lakes. The annual "silt run" from the reservoir was initiated on July 11 and continued for only 14 days. Reservoir storage was reduced to initiate the "silt run" and was maintained at a low level throughout the period. The minimum reservoir content during the "silt run" of 1,015 AF occurred on July 24, 2020. Following the "silt run", the reservoir was refilled to approximately 28,000 AF. The releases from Guernsey Dam averaged 4,456 cfs from July 25 to September 3. The reservoir end of September storage was 4,516 AF and peaked at 29,594 AF on April 16, 2020.

Guernsey releases were discontinued on September 28, 2020. See Figure 9 for WY 2019 and WY 2020 storage compared to average.

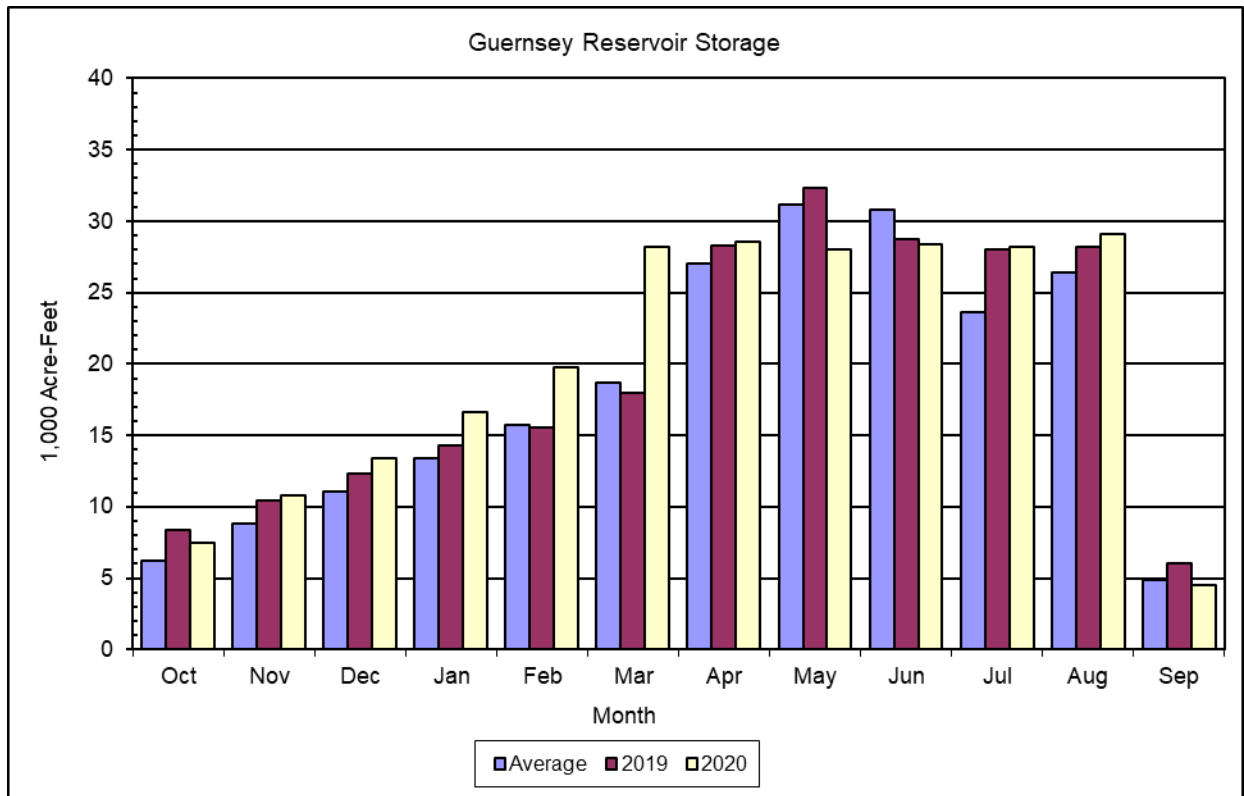


Figure 9: Guernsey Reservoir Monthly Storage.

## Precipitation Summary for Water Year 2020

Watershed precipitation in each basin is an average of precipitation readings using several stations as indicators. The 2020 precipitation was at or above average for most of the North Platte River Basin. Precipitation ranged from a high of 203 percent in December to an August low of 25 percent of average for Seminoe, Pathfinder, Glendo, and Guernsey.

The North Platte basin received the majority of its precipitation in November and December for WY 2020. Glendo basin precipitation had the lowest at 21 percent of average for August and 22 percent for July. The North Platte Basin precipitation percents of average for March through June were as follows: Seminoe basin – 81, 71, 99, and 76 percent, Pathfinder basin - 74, 106, 3, and 32 percent, Glendo basin - 123, 83, 19, and 32 percent, and Guernsey basin- 52, 41, 37, and 37 percent.

See Figure 10 for a comparison of average, WY 2019 and WY 2020 total precipitation.

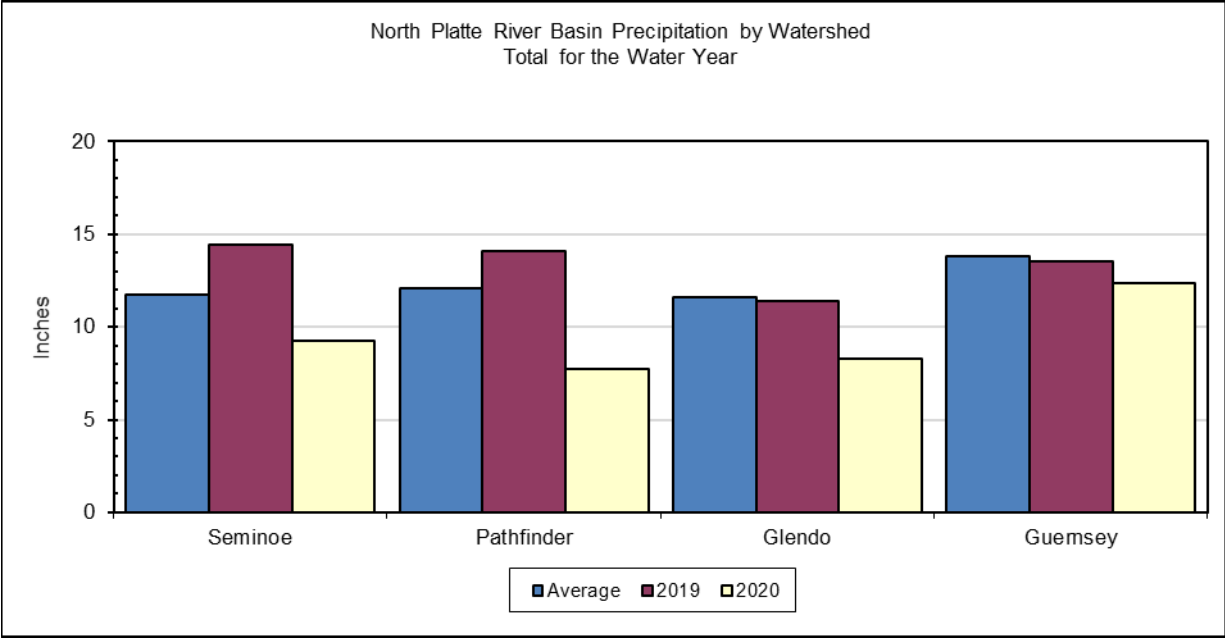


Figure 10: North Platte River Basin Precipitation by Watershed. Total for Water Year 2020.

### Snowpack Summary for Water Year 2020

Reclamation relies on the Natural Resource Conservation Service (NRCS) to provide snow water equivalent (SWE) information for the three drainage areas in which Reclamation forecasts snowmelt runoff. On February 1 the watershed percentage above Seminoe Reservoir snowpack SWE started at 109 percent, increased 6 percent by March 1, and finished at 103 percent on May 1. In the Sweetwater River watershed, the SWE started at 81 percent of median on February 1, peaked at 83 percent on March 1, and ended the season at 71 percent by May 1. Snow in the Alcova Dam to Glendo Reservoir watershed began at 140 percent of median on February 1, increased to 142 percent by March 1, and finished at 115 percent on May 1. Table 6 shows a summary of snowpack for WY 2020.

Table 15: North Platte Snowpack Water Content for Water Year 2020.

Watershed	Feb 1 SWE <sup>1</sup>	Feb 1 % of Median <sup>2</sup>	Mar 1 SWE <sup>1</sup>	Mar 1 % of Median <sup>2</sup>	Apr 1 SWE <sup>1</sup>	Apr 1 % of Median <sup>2</sup>	May 1 SWE <sup>1</sup>	May 1 % of Median <sup>2</sup>
Seminole Reservoir	14.4	109	19.9	115	23.6	112	21.4	103
Pathfinder Reservoir	7.5	81	9.2	83	12.4	83	11.0	71
Glendo Reservoir	8.7	140	12.0	142	13.6	123	10.4	115

1 - SWE (Snow Water Equivalent) is the amount of water in the snowpack expressed in inches).

2 - Median is based on the 1981-2010 period.

## Allocation for Water Year 2020

Due to the above average carryover entering the water year and timely spring precipitation, an allocation was not required for the 2020 water year.

## Ownerships for Water Year 2020

Stored water which is held in accounts for various entities is referred to as their ownership. At the beginning of WY 2020, the North Platte Project ownership (includes North Platte Pathfinder and North Platte Guernsey), contained 669,755 AF of water, which is 167 percent of average. The Kendrick ownership contained 1,121,590 AF of water, which is 131 percent of average. The Glendo ownership contained 164,983 AF of water, which is 128 percent of average.

The total amount of water stored at the end of WY 2020 in the mainstem reservoirs for use in WY 2020 was 1,634,283 AF which was 114 percent of average.

At the end of WY 2020, the North Platte Project ownership (includes North Platte Pathfinder and North Platte Guernsey), contained 411,124 AF of water which is 97 percent of average. The Glendo ownership contained 131,202 AF of water which is 100 percent of average. The Kendrick ownership contained 1,073,776 AF, which is 124 percent of average. The Operational/Re-regulation water account contained 0 AF. Also stored in the North Platte storage system was 8,315 AF for the city of Cheyenne, 0 AF for the Wyoming Water Development Commission, and 2,000 AF for Pacificorp. See Figure 11 for the last two water years ownership carryover compared with the average carryover for the Kendrick, North Platte, and Glendo Projects. Table 8 shows a summary of ownership for WY 2020.

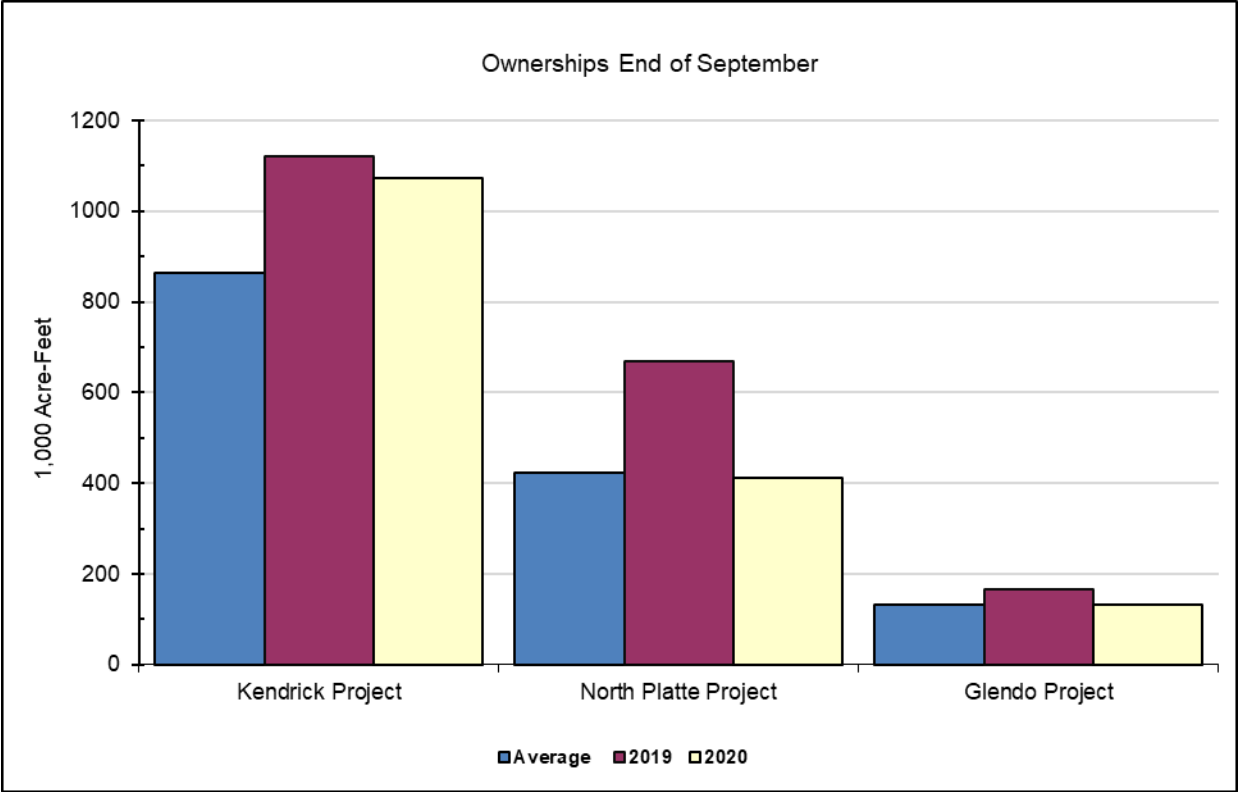


Figure 11: Ownership at the End of September.

### North Platte River Forecast 2020

Reservoir inflow forecasts are prepared at the first of February, March, April, and May to estimate the inflows expected for the April through July runoff period.

Runoff forecasts for the Seminoe Reservoir watershed, the Sweetwater River above Pathfinder Reservoir, and the North Platte River from Alcova Dam to Glendo Reservoir are based on snow telemetry (SNOTEL) and/or snow course sites, precipitation sites, and calculated inflows. Reclamation maintains a database consisting of historic monthly data for reservoir inflows, snow and precipitation stations. WYAO staff coordinates with NRCS Portland Office staff to exchange forecasted numbers. Reclamation forecasts and NRCS forecasts are then reviewed by WYAO management. All the information available is considered and judgement is applied to result in a final forecast of reservoir inflow. The forecasted information is then made available to the public through a news release and is used in updating monthly reservoir operating plans. Table 7 depicts a summary of the monthly forecasts for WY 2020.

Table 16: Summary of Forecasts of April-July Runoff for Water Year 2020.

Forecast Points	Feb 1 (KAF)	Feb 1 % of Avg.	Mar 1 (KAF)	Mar 1 % of Avg.	Apr 1 (KAF)	Apr 1 % of Avg.	May 1 (KAF)	May 1 % of Avg.	Actual (KAF)	Actual % of Avg. <sup>1</sup>
Seminole Reservoir	816	115	915	129	850	134	722 <sup>2</sup>	102	632.4	89
Sweetwater River	44	80	43	78	63	115	62 <sup>3</sup>	113	24.5	45
Alcova to Glendo	160	113	159	112	265	187	218 <sup>4</sup>	154	134.5	94

1 – Average is based on the 1990-2019 period.

2 – The May 1<sup>st</sup> forecast includes an April inflow of 81,108 acre-feet.

3 – The May 1<sup>st</sup> forecast includes an April inflow of 16,397 acre-feet.

4 – The May 1<sup>st</sup> forecast includes an April inflow of 61,645 acre-feet.





**City of Cheyenne**

Evaporation	-37	-1	-14	-12	0	-12	-47	-71	-61	-76	-78	-63	<b>-472</b>
Stored	1,113	785	702	729	619	824	430	151	860	549	1,055	1,396	<b>9,213</b>
Used	-211	-66	-159	-168	-171	-90	-258	-5,852	-689	-87	-45	-234	<b>-8,030</b>
Ownership total	8,469	9,187	9,716	10,265	10,713	11,435	11,560	5,788	5,898	6,284	7,216	8,315	
<b>Actual Ownership</b>	7,604	8,469	9,187	9,716	10,265	10,713	11,435	11,560	5,788	5,898	6,284	7,216	8,315

**Pacific Corp (PP&L)**

Evaporation	-5	0	0	0	-2	0	-14	-20	-26	-33	-33	-28	<b>-161</b>
Accrual	0	0	0	0	0	0	0	41	26	33	33	28	<b>161</b>
Delivery	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Ownership total	1,995	1,995	1,995	1,995	1,993	1,993	1,979	2,000	2,000	2,000	2,000	2,000	
<b>Actual Ownership</b>	2,000	1,995	1,995	1,995	1,995	1,993	1,993	1,979	2,000	2,000	2,000	2,000	2,000

**D/ WWDC Ownership**

Evaporation	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Accrual	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Delivery	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Ownership total	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Actual Ownership</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

**Operational Ownership**

Evaporation	-76	-29	-28	-8	-12	0	-136	-134	-198	-206	-170	-105	<b>-1,102</b>
Accrual	0	0	0	0	0	512	0	0	0	0	0	-147	<b>365</b>
Delivery	0	0	0	0	0	0	0	0	-1,440	0	-2,075	0	<b>-3,515</b>
Evaporation payback								0	0	-2,523	0	0	<b>-2,523</b>
Ownership total	14,565	14,536	14,508	14,500	14,488	15,000	14,864	14,730	13,092	10,363	8,118	7,866	
<b>Actual Ownership</b>	14,641	14,565	14,536	14,508	14,500	14,488	15,000	14,864	14,730	13,092	10,363	8,118	7,866

**Re-Regulation Water**

Evaporation	-216	-58	-31	-30	-60	-31	-423	-438	-407	0	0	-59	<b>-1,753</b>
Accrual	0	0	0	0	0	1,476	-97,668	-52,990	88,650	0	0	10,764	<b>-49,768</b>
Delivery	-7,101	0	0	0	0	269	0	0	0	0	0	0	<b>-6,832</b>
Evaporation Payback									0	0	0	0	<b>0</b>
Re-Regulation Transfer						0	150,000	0	-126,817	0	0	-10,705	<b>12,478</b>
Ownership total	38,558	38,500	38,469	38,439	38,379	40,093	92,002	38,574	0	0	0	0	
<b>Actual Ownership</b>	45,875	38,558	38,500	38,469	38,439	38,379	40,093	92,002	38,574	0	0	0	0

**Pathfinder Ownership Without Modification**

Evaporation	-2,845	-621	-1,859	-1,649	-643	-1,667	-3,892	-8,587	-12,196	-13,430	-9,424	-4,273	<b>-61,086</b>
Accrual	16,705	38,855	38,074	33,522	35,976	59,193	77,886	82,465	5,678	42	0	0	<b>388,396</b>
Delivery	0	0	0	0	0	0	0	0	-36,060	-236,420	-236,340	-59,213	<b>-568,033</b>
Ownership total	668,632	706,866	743,081	774,954	810,287	867,813	941,807	1,015,685	973,107	723,299	477,535	414,049	
<b>Actual Ownership</b>	654,772	668,632	706,866	743,081	774,954	810,287	867,813	941,807	1,015,685	973,107	723,299	477,535	414,049

**Kendrick Ownership Without Modification**

Evaporation		-3,676	-815	-2,347	-2,017	-754	-1,864	-3,714	-7,258	-10,841	-13,339	-11,646	-7,929	<b>-66,200</b>
Accrual		0	0	0	0	0	0	0	105,806	131,209	0	0	0	<b>237,015</b>
Delivery		0	0	0	0	0	0	-150,000	-3,273	-9,093	-21,571	-18,173	6,684	<b>-195,426</b>
Ownership total		1,117,914	1,117,099	1,114,752	1,112,735	1,111,981	1,110,117	956,403	1,051,678	1,162,953	1,128,043	1,098,224	1,096,979	
<b>Actual Ownership</b>		1,121,590	1,117,914	1,117,099	1,114,752	1,112,735	1,111,981	1,110,117	956,403	1,051,678	1,162,953	1,128,043	1,098,224	1,096,979

- A - In 1992, the Wyoming State Engineer granted an exchange which allows Pacific Power to exchange direct flows in the winter months (October through April) for direct flow in the summer months. During the winter months some direct flows which are available for storage under Pathfinder's storage right are not stored but instead are allowed to pass downstream for use by Pacific Power. In exchange, starting on May 1 Pacific Power allows some of its available direct flow to pass downstream to Glendo Reservoir to be stored as Pathfinder ownership. The exchange water was returned to Pathfinder at a rate of 26 AF daily starting on May 1, 2020, until July 2, 2020, when the last 16 AF of the exchange was returned.
- B - Amounts shown as delivery are storage water only. Natural flow which was delivered is not shown in this table.
- C - Transfer refers to Inland Lakes ownership water which was delivered from storage in Glendo or Guernsey Reservoirs. On April 21 through May 18, 45,562 AF was transferred to the Inland Lakes.
- D - Wyoming Water Development Commission (WWDC) did not contract with the Bureau of Reclamation for storage.

Table 18: North Platte Water Year 2020 Hydrologic Operations.

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Seminole Reservoir (Initial content: 822.7 KAF)</b>														
Total Inflow	kaf	17	32.2	32.3	28.1	31	57.5	81.1	285.3	219.9	46.1	21.9	12.2	864.5
Total Inflow	cfs	276	541	526	458	539	934	1363	4640	3695	749	356	204	NA
Turbine Release	kaf	33	32.1	33.2	33.1	31.1	101.1	166.9	156.4	143	135.3	76.3	37.1	924.9
Jetflow Release	kaf	0	0	0	0	0	0	0	0	52.7	53	0	0	105.7
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	33	32.1	33.2	33.1	31.1	101.1	166.9	156.4	143	135.3	76.3	37.1	1030.6
Total Release	cfs	536	539	540	539	540	1645	1464	2543	2403	2201..	1241	623	NA
Evaporation	kaf	2.9	0.6	1.8	1.6	0.6	1.4	3	5.7	8.8	10.1	8.1	5.5	50.1
End-month content	kaf	803.8	803.3	800.6	794.1	793.4	748.3	659.6	782.8	850.9	751.5	689	658.6	NA
End-month elevation	ft	6345.5	6345.5	6345.3	6344.9	6344.9	6342.1	6336.2	6344.2	6348.2	6342.3	6338.2	6336.1	NA
<b>Kortes Reservoir (Initial content: 4.7 KAF)</b>														
Total Inflow	kaf	33.1	32.1	33.2	33.1	31.1	101.1	166.9	156.4	143	135.3	76.3	37.1	978.5
Total Inflow	cfs	536	539	540	539	540	1645	2805	2543	2403	2201	1241	623	NA
Turbine Release	kaf	33	32.1	32.2	33.1	31.1	101.1	166.8	156.4	142.9	135.3	76.3	37.1	977.4
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	33	32.1	32.2	33.1	31.1	101.1	166.8	156.4	142.9	135.3	76.3	37.1	977.4
Total Release	cfs	537	539	540	538	540	1645	2803	2544	2402	2200	1240	623	NA
Min reservoir rels	cfs	532	535	536	535	536	536	1464	2618	3985	3862	1112	760	NA
Max reservoir rels	cfs	532	535	536	535	536	536	1464	2618	3985	3862	1112	760	NA
<b>Pathfinder Reservoir (Initial content: 844.7 KAF)</b>														
Sweetwater Inflow	kaf	2.8	3.6	2.9	2.9	2.8	5.2	8.5	9.6	4.7	1.6	0.7	0.5	45.8
Kortes-Path Gain	kaf	-0.8	3.8	4.4	6.9	6.3	7.9	16.4	-5.5	-5.2	-5.8	-4.7	0.2	23.8
Inflow from Kortes	kaf	32.2	35.9	37.7	40	37.4	109	183.2	151	137.8	129.5	71.6	37.2	1002.5
Total Inflow	kaf	34.2	43.3	45	49.8	46.5	122.1	208.1	155.1	137.3	125.3	67.6	37.9	1072.2
Total Inflow	cfs	556	728	732	810	837	1986	3497	2522	2307	2038	1099	637	NA
Turbine Release	kaf	3.3	25.3	27.6	14	8.5	32.3	163.6	134.8	127.6	141.9	125	42.5	846.4
Jetflow Release	kaf	4.7	4.4	4.5	16.6	20.8	6.8	7.6	60.1	106.8	101.1	6.9	7.1	347.4

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	7.9	29.3	32.1	30.5	29.1	39.5	112.3	194.9	234.4	243	131.4	49.3	1133.7
Total Release	cfs	130	499	522	498	509	636	2877	3170	3939	3952	2145	834	NA
Evaporation	kaf	3.5	0.7	2.2	1.9	0.7	1.8	4.4	8.6	11.3	12.4	9.6	5.8	61.7
End-month content	kaf	865.5	871.4	874.8	882.4	890	957.8	1024.2	971.6	863.7	737.8	668.4	650.5	NA
End-month elevation	ft	5842.9	5843.2	5843.3	5843.7	5844.1	5847.4	5850.5	5848.3	5842.8	5836	5831.9	5830.8	NA
Jetflow Release	cfs	76	74	73	270	362	111	128	977	1795	1644	112	119	NA
Min Release	cfs	126	500	467	394	73	75	78	76	98	714	412	87	NA
<b>Alcova Reservoir (Initial content: 180.3 KAF)</b>														
Total Inflow	kaf	7.9	29.3	32.1	30.5	29.1	39.5	112.3	194.9	234.4	243	131.4	49.3	1133.7
Total Inflow	cfs	129	492	522	497	505	642	1888	3170	3939	3952	2137	828	NA
Turbine Release	kaf	30.9	29.5	31.1	30.6	28.9	38.3	89.4	182.1	214.3	219.2	112.2	40.1	1046.6
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Casper Canal Release	kaf	0.4	0	0	0	0	0	0	12.7	18.4	21.6	18.2	8.9	80.2
Total Release	kaf	30.9	29.5	31.1	30.6	28.9	38.3	89.4	182.1	214.3	219.2	112.2	40.1	1046.6
Total Release	cfs	502	497	505	498	502	624	1502	2961	3602	3566	2825	673	NA
Evaporation	kaf	0.1	0	0	0.1	0.1	0.1	0.7	0.8	1	0.6	1.1	0.5	5.1
End-month content	kaf	156.9	156.5	157.3	157	157.2	158.1	180.6	179.8	180.1	180.7	180.3	179.8	NA
End-month elevation	ft	5488.4	5488.2	5488.6	5488.4	5488.5	5488.9	5498.5	5498.1	5498.3	5498.5	5498.3	5498.1	NA
<b>Gray Reef Reservoir (Initial content: 1.7 KAF)</b>														
Total Inflow	kaf	30.9	29.5	31.1	30.6	28.9	38.3	89.4	182.1	214.3	219.2	112.2	40.1	1046.5
Total Inflow	cfs	502	497	505	498	502	624	1502	2961	3602	3566	1825	673	NA
Total Release	kaf	30.9	29.8	31	30.8	28.9	37.8	89.4	182.1	214.3	219.2	112.2	40.1	1046.5
Total Release	cfs	502	501	505	500	502	614	1503	2960	3600	3564	1831	673	NA
Min reservoir rels	cfs	501	501	501	501	501	588	710	502	1307	2841	2512	1206	NA
Max reservoir rels	cfs	501	501	501	501	501	588	710	502	1307	2841	2512	1206	NA
<b>Glendo Reservoir (Initial content: 166.4 KAF)</b>														
Alcova-Glendo Gain	kaf	11.1	9.7	9.4	11.8	8.6	23.4	61.6	62.3	8.3	2.2	-2.2	7.9	214.1
Infl from Gray Reef	kaf	32.3	33.3	32.9	29.9	27.9	32.3	70.7	172.8	207.3	213.1	115.4	43.8	1011.7
Total Inflow	kaf	43.4	43	42.3	41.7	36.5	55.7	132.3	235.1	215.6	215.3	113.2	51.7	1225.8

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Inflow	cfs	707	723	687	678	634	906	2223	3823	3624	3501	1841	868	NA
Turbine Release	kaf	4.6	0	0	0	0	0	156.9	208	199	287.9	270	83	1209.4
Low Flow Release	kaf	1.2	1.7	1.6	1.6	1.4	1.6	1.5	1.6	1.5	1.6	1.6	1.5	17.9
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigation Release	kaf	4.6	0	0	0	0	9.9	155.4	206.4	197.5	286.3	268.5	81.5	1210.1
Total Release	kaf	5.8	1.7	1.6	1.5	1.5	11.5	156.9	208	199	287.9	270	83	1228.4
Total Release	cfs	95	29	26	25	25	187	2637	3383	3345	4683	4391	1395	NA
Evaporation	kaf	0.9	0.3	0.3	0.4	0.5	0.4	3.5	3.6	5.9	6.4	4.6	1.7	28.5
End-month content	kaf	203	244.1	284.5	324.2	358.8	402.6	374.4	397.9	408.6	329.5	168.1	135	NA
End-month elevation	ft	4603.3	4609	4614.1	4618.7	4622.5	4626.9	4624.1	4626.5	4627.5	4619.3	4597.8	45918	NA
<b>Guernsey Reservoir (Initial content: 6.0 KAF)</b>														
Glendo-Guerns Gain	kaf	2.9	2.5	2.6	2.2	2	2.2	9.4	0.1	1.4	-1.6	4.6	6.9	35.2
Inflow from Glendo	kaf	5.8	1.5	1.5	1.5	1.4	1.5	156.9	208	199	287.9	270	83	1218
Total Inflow	kaf	8.7	4.2	4.1	3.7	3.4	11.5	166.3	208.1	200.4	286.3	274.6	89.9	1262.5
Total Inflow	cfs	142	70	67	60	59	223	2795	3385	3368	4656	4467	1512	NA
Turbine Release	kaf	0	0	0	0	0	0	51.5	53.2	51.5	53.5	53.6	55	318.3
Seepage	kaf	0.1	0.8	1.4	0.4	0.2	0.2	0	0	0	0	0	0	3.1
Spillway Release	kaf	0	0	0	0	0	0	113.7	154.7	147.5	232.4	219	59	926.3
Total Release	kaf	7.2	0.8	1.4	0.4	0.2	5.3	165.2	207.9	199	285.9	272.6	114	1259.9
Total Release	cfs	117	14	23	7	3	86	2777	3381	3344	4650	4433	1916	NA
Evaporation	kaf	0.1	0	0	0.1	0.1	0.1	0.7	0.8	1	0.6	1.1	0.5	5.1
End-month content	kaf	7.4	10.8	13.4	16.6	19.8	28.2	28.5	28	28.4	28.2	29.1	4.5	NA
End-month elevation	ft	4397.7	4401	4403.2	4405.4	4407.4	4412	4412.2	4411.9	4412.1	4412	4412.5	4393.7	NA
Physical EOM Cont	kaf	2043	2092.2	2136.7	2180.3	2225.1	2301.5	2273.9	2366.6	2338.1	2034.1	1740.9	1634.3	NA

Table 19: North Platte Water Year 2020 Ownership Operations.

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>North Platte Pathfinder (Initial ownership: 669.8 KAF)</b>														
Net Accrual	kaf	16.7	38.9	38.1	33.5	36	59.2	77.9	115.4	0	0	0	0	415.6
Evaporation	kaf	2.9	0.7	1.9	1.7	0.7	1.7	3.9	8.8	12.6	13.9	9.9	4.4	63
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	35.2	239.3	240.5	96.9	612.9
End-month Ownership	kaf	683.6	721.8	758	789.8	825.1	882.6	956.6	1063.9	1016.1	762.9	512.4	411.1	NA
<b>North Platte Guernsey (Initial ownership: 0 KAF)</b>														
Net Accrual	kaf	0	0	10.5	13.5	10.4	11.4	0	0	0	0	0	0	45.6
Evaporation/Seepage	kaf	0	0	0	0	0.2	0	0.9	0.9	0.9	0	0	0	2.7
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	42.9	0	0	0	42.9
End-month Ownership	kaf	0	0	10.5	24	34.2	45.6	44.7	43.8	0	0	0	0	NA
<b>Inland Lakes (Initial ownership: 0 KAF)</b>														
Net Accrual	kaf	13.9	11.4	0	0	0	20.8	0	0	0	0	0	0	46.1
Evaporation/Seepage	kaf	0	0.1	0	0.1	0	0.3	0.1	0	0	0	0	0	0.6
Trnsfr fm Ownership	kaf	0	0	0	0	0	17.4	28.1	0	0	0	0	0	45.5
End-month Ownership	kaf	13.9	25.2	25.2	25.1	25.1	28.2	0	0	0	0	0	0	NA
<b>Kendrick (Initial ownership: 1121.6 KAF)</b>														
Net Accrual	kaf	0	0	0	0	0	0	0	86.1	126.8	0	0	10.7	212.4
Evaporation	kaf	3.7	0.8	2.3	2.1	0.7	1.9	3.7	7.1	10.7	13.1	11.4	7.8	68.2
Deliv fm Ownership	kaf	0	0	0	0	0	0	150	3.3	9	21.6	18.2	4	33
End-month Ownership	kaf	1117.9	1117.1	1114.8	1112.7	1112	1110.1	956.4	1032.1	1139.2	1104.5	1074.9	1073.8	NA
<b>Glendo Unit (Initial ownership: 165 KAF)</b>														
Accrual	kaf	0	0	0	0	0	6.6	0	0	0	0	0	0	6.7
Evaporation	kaf	1	0.1	0.2	0.2	0.4	0.1	2.1	1.9	3.6	4.1	3.8	2	19.6
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0.2	9.6	8.1	3	20.9
End-month Ownership	kaf	164	163.9	163.7	163.5	163.1	169.6	167.5	165.6	161.8	148.1	136.3	131.2	NA
<b>Re-regulation (Initial ownership: 45.9 KAF)</b>														
Accrual	kaf	0	0	0	0	0	1.8	150	0	88.6	0	0	10.8	251.2
Evaporation/Seepage	kaf	0.2	0.1	0	0.1	0	0.1	0.4	0.4	0.4	0	0	0.1	1.8

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Release	kaf	7.1	0	0	0	0	0	97.7	53	126.8	0	0	10.7	288.2
End-month total	kaf	38.6	38.5	38.5	38.4	38.4	40.1	92	38.6	0	0	0	0	NA
<b>City of Cheyenne (Initial ownership: 7.6 KAF)</b>														
Inflow	kaf	1.1	0.8	0.7	0.7	0.6	0.8	0.4	0.2	0.9	0.5	1.1	1.4	9.2
Evaporation	kaf	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.5
Release	kaf	0.2	0.1	0.2	0.2	0.2	0.1	0.3	5.9	0.7	0.1	0	0.2	8
Ownership	kaf	8.5	9.2	9.7	10.3	10.7	11.4	11.6	5.8	5.9	6.3	7.2	8.3	NA
<b>Pacificorp (Initial ownership: 2 KAF)</b>														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Ownership	kaf	2	2	2	2	2	2	2	2	2	2	2	2	NA
<b>Other (Initial ownership: 14.6 KAF)</b>														
Inflow	kaf	0	0	0	0	0	0.5	0	0	0	0	0	0.1	0.4
Evaporation	kaf	0	0.1	0	0	0	0	0.1	0.1	0.2	0.2	0.2	0.1	1.1
Release	kaf	0	0	0	0	0	0	0	0	1.4	0	2.1	0	3.5
Ownership	kaf	14.6	14.5	14.5	14.5	14.5	15	14.9	14.7	13.1	10.4	8.1	7.9	NA



Table 20: North Platte Water Year 2020 Irrigation Delivery Operations.

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Kendrick (Casper Canal)</b>														
Requested	kaf	0	0	0	0	0	0	0	12.7	18.4	21.6	18.2	8.9	59.8
Delivered	kaf	0	0	0	0	0	0	0	12.7	18.4	21.6	18.2	8.9	59.8
<b>Kendrick (River)</b>														
Requested	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivered	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Guernsey Deliveries</b>														
North Platte Req	kaf	0	0	0	0	0	0	165.2	207.9	199	285.9	272.6	114	1253.8
Glendo Req	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Inland Lakes Req	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Requirement	kaf	1.1	0.8	1.4	0.4	0.2	5.3	165.2	207.9	199	285.9	272.6	114	1253.8
Seepage	kaf	0.1	0.8	1.4	0.4	0.2	0	0	0	0	0	0	0	2.9
Actual Release	kaf	1.2	0.8	1.4	0.4	0.2	5.3	165.2	207.9	199	285.9	272.6	114	1253.9

Table 21: North Platte Water Year 2020 Power Operations.

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Seminole Power Plant</b>														
Turbine Release	kaf	0	32.1	33.2	33.1	31.1	101.1	166.8	156.4	143	135.3	76.3	37.1	945.5
Bypass	kaf	33.1	0	0	0	0	0	0	0	0	0	0	0	33.1
Maximum generation	gwh	20.491	19.618	20.526	26.249	29.897	31.947	31.493	33.486	32.181	32.841	32.921	32.096	343.746
Actual generation	gwh	4.481	4.323	4.391	4.485	4.167	16.358	21.023	20.273	21.565	19.466	10.219	4.33	135.081
Percent max generation		22	22	21	17	14	51	68	61	67	59	31	13	39
Average kwh/af		0	137	132	135	134	162	126	130	152	144	134	118	143
<b>Kortes Power Plant</b>														
Turbine Release	kaf	33	32.1	33.2	33.1	31.1	101.1	132.9	156.4	143	135.3	76.3	37.1	944.6
Bypass	kaf	0	0	0	0	0	0	33.9	0	0	0	0	0	33.9
Maximum generation	gwh	28.346	23.168	18.404	21.362	15.979	14.242	27.606	27.606	26.712	27.606	27.606	26.712	280.602
Actual generation	gwh	5.254	5.003	5.062	5.22	5.008	17.57	28.152	23.702	23.218	21.347	11.862	5.49	156.888
Percent max generation		19	23	31	24	29	36	102	86	87	77	38	21	56
Average kwh/af		159	156	152	158	161	174	211	152	162	158	155	148	166
<b>Fremont Canyon Power Plant</b>														
Turbine Release	kaf	3.3	25.3	27.6	14	8.5	32.3	163.6	134.8	127.6	141.9	125	42.5	846.4
Bypass	kaf	4.7	4.4	4.5	16.6	20.8	6.8	7.6	60.1	106.8	101.8	6.9	7.1	347.4
Maximum generation	gwh	47.219	45.693	47.234	47.24	44.202	47.276	45.768	47.296	45.707	46.965	46.095	44.175	554.87
Actual generation	gwh	1.126	7.683	8.184	3.504	2.241	9.52	33.668	44.639	45.023	48.167	38.148	12.5	254.403
Percent max generation		0	0	0	0	0	20	74	94	99	103	83	28	46
Average kwh/af		341	304	297	250	264	295	206	331	353	339	305	294	301
<b>Alcova Power Plant</b>														
Turbine Release	kaf	30.3	29.8	31.1	30.7	28.9	37.8	147.9	182	190.4	196.8	112.7	40.1	1058.5
Bypass	kaf	0	0	0	0	0	0	0	0	23.9	22.4	0	0	46.3
Maximum generation	gwh	27.19	26.506	27.357	19.846	13.253	14.502	26.33	27.552	26.656	27.552	27.552	26.656	290.952
Actual generation	gwh	3.081	2.909	3.082	3.1	2.934	4.117	12.118	22.191	28.239	28.113	15.542	4.63	130.756
Percent max generation		11	11	11	16	22	28	46	81	106	102	56	17	45
Average kwh/af		102	98	99	101	102	109	82	116	148	143	138	115	124

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Glendo Power Plant</b>														
Turbine Release	kaf	4.3	0.2	0	0	0	10.1	165.2	233.4	199.3	230.8	221.4	85.4	1150.1
Bypass	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	9.7	1.5	63	53.4	1.5	139.5
Maximum generation	gwh	17.426	18.772	20.563	11.927	21.44	24.098	21.281	25.91	25.259	25.172	21.574	17.031	250.453
Actual generation	gwh	0.1	0	0	0	0	1.072	18.103	25.91	22.226	25.172	21.574	6.89	121.309
Percent max generation		0	0	0	0	0	0	85	100	66	92	97	40	48
Average kwh/af		0	0	0	0	0	0	110	111	112	109	102	81	105
<b>Guernsey Power Plant</b>														
Turbine Release	kaf	0	0.6	1.1	0	0	5	51.8	53.5	51.8	53.5	53.5	55.1	325.9
Bypass	kaf	7.2	0.2	0.3	0.4	0.2	0.3	123.4	189.6	149.2	238.4	224.1	62.9	996.2
Maximum generation	gwh	2.294	0.214	1.365	1.726	1.883	3.584	3.581	3.834	3.714	3.801	3.798	3.471	33.265
Actual generation	gwh	0.1	0	0	0	0	0	3.334	4.434	4.208	1.643	4.25	3.09	21.033
Percent max generation		0	0	0	0	0	0	93	116	113	43	112	89	63
Average kwh/af		0	0	0	0	0	0	64	83	81	31	79	56	65

## Flood Benefits for Water Year 2020

DAMS	WATER YEAR 2020	PRIOR TO 2020 <sup>2</sup>	ACCUMULATED TOTAL <sup>1</sup>
SEMINOIE	\$0	\$103,023,400	\$103,023,400
PATHFINDER	\$0	\$36,824,300	\$36,824,300
ALCOVA	\$0	\$3,438,900	\$3,438,900
GLENDO	\$3,111,200	\$251,606,500	\$254,717,700
TOTAL	\$3,111,200	\$394,893,100	\$398,004,300

1 - This data is received from the Army Corps of Engineers Omaha District Office and is revised every October.

2 - The period of assessment is 1970 through 2020 except for Glendo Dam, which is 1964 through 2020.

## Generation for Water Year 2020

Power generation was below average for Fremont Canyon and Alcova powerplants; all others were above average in WY 2020. See Table 11 for a breakdown of generation by powerplant.

Powerplant	Gross generation <sup>1</sup> (GWh)	Percent of Average <sup>2</sup>
Seminole	135.1	108
Kortes	156.9	120
Fremont Canyon	254.4	120
Alcova	130.8	124
Glendo	107.6	134
Guernsey	21.0	125
Total Basin	805.8	120

1 - Generation is reported in giga-watt hours (GWh).

2 - 30 year average (1990-2019).

The number of generation units at each powerplant, their capacity, and output at rated head is shown in Table 12.

Powerplant	Number of Units	Capacity Each Unit (kw)	Total <sup>2</sup> Installed Capacity (kw)	Normal Operating Head (feet)	Output At rated Head (cfs)	30 year Average <sup>1</sup> (GWh)
Seminole	3	15,000 <sup>3</sup>	51,750 <sup>3</sup>	97-227	4,050	125.0
Kortes	3	12,000	36,000	192-204	2,910	130.6
Fremont Canyon	2	33,400	66,800	247-363	3,080	212.6
Alcova	2	19,500	41,400	153-165	4,100	105.1
Glendo	2	19,000	38,000	73-156	3,400	80.4
Guernsey	2	3,200	6,400	89-91	1,340	16.8
Total	14	---	237,200	---	---	870.5

1 1990-2019

2 Installed capacity from Monthly Report of Power Operations-Powerplant (Form PO&M 59)

3 A Mechanical restriction allows a 42,000-kw generation, 12,000 kws per unit.

# Proposed Operations for Water Year 2021

Three operation studies were developed for the System to establish an AOP for WY 2021. Each of the studies conformed to the established operating criteria but used different inflow conditions and different demand conditions.

The three inflow conditions were determined from a statistical analysis of historic inflows and were labeled reasonable minimum, reasonable maximum, and reasonable expected inflow estimates. The reasonable expected inflow is based on long-term averages and approximates a 50 percent chance of occurrence. The three studies for WY 2021 are summarized numerically in tables 15, 16, and 17.

The AOP, as developed and reflected in the three studies, provides the flexibility to adjust operations as conditions change during the water year. Forecasts of the April-July reservoir inflow will be made at the beginning of each month for February through May. Projected operating schedules will be adjusted, as required, throughout the water year as changes occur in the forecasted inflows, irrigation demands, maintenance schedules, and power loads.

The total storage in mainstem reservoirs on the North Platte River in Wyoming (including Kortes Reservoir and Gray Reef Reservoir) was 1,634,283 AF at the beginning of the WY 2021. This amount was 114 percent of the 30 year average (1990-2019) and 58 percent of active conservation capacity.

## Seminole Reservoir

### Most Probable Condition – 2021

October through March -- Seminole Reservoir has a storage of 822,688 AF at the beginning of WY 2020, which is 136 percent of the 30-year average and 81 percent of active conservation capacity. Planned turbine releases from Seminole Reservoir are approximately 530 cfs for October and November with an increase to 950 cfs in December to fill Alcova back to the winter operation level. Upon completion of the refilling of Alcova Reservoir the flows will be set back to the 530 cfs winter release. March releases will be increased to approximately 1,700 cfs in anticipation of the spring runoff. Reservoir storage would decrease to about 544,000 AF by March 31, 2021. The releases are based on an estimated Seminole inflow for the October through March period of 183,300 AF. The planned Seminole and Kortes release of 530 cfs for October through March is required to maintain a minimum flow of at least 500 cfs in the Miracle Mile reach of the river.

April through September -- Turbine releases are expected to be 2,000 cfs for April and 2,300 cfs for May, 2,600 cfs for June, then decrease to 2,400 cfs in July, and 530 cfs for August and September. There is no bypass expected in the most probable scenario. Seminole Reservoir storage will reach a maximum of 777,200 AF by the end of June. Projected carryover storage of about 691,100 AF at the end of the water year would be 113 percent of average and 68 percent of active conservation capacity.

### **Reasonable Minimum Condition – 2021**

October through March -- Seminole Reservoir has a storage of 822,688 AF at the beginning of WY 2020, which is 136 percent of the 30-year average and 81 percent of active conservation capacity. Planned turbine releases from Seminole Reservoir are approximately 530 cfs for October and November with an increase to 950 cfs in December to fill Alcova back to the winter operation level. Upon completion of the refilling of Alcova Reservoir the flows will be set back to the 530 cfs winter release. April releases will be increased to approximately 650 cfs to move water downstream in anticipation of the irrigation season. A release of at least 500 cfs is required to maintain the minimum flow in the Miracle Mile reach of the river. Under this condition, inflows are predicted to be 151,800 AF for the period, which is 31,500 AF less than the most probable condition. March 31 reservoir content is expected to be approximately 586,100 AF.

April through September -- Seminole water releases will be at 630 cfs through April, increasing to 2,550 cfs in May, and decreasing to approximately 1,900 cfs in June. Releases will decrease to 950 cfs in July and August and decreased further to 800 in September. Under the minimum condition scenario, the June content will be approximately 569,500 AF, and the water year will end with a content of 454,700 AF which is 45 percent of average and 58 percent of active conservation capacity.

### **Reasonable Maximum Condition – 2021**

October through March -- Planned water releases for this period under a reasonable maximum inflow condition are similar to the most probable condition as water is moved downstream to generate power and make room in Seminole Reservoir for spring runoff. Although inflows to Seminole Reservoir are higher under these conditions, actual changes in winter operations are made gradually until it is evident that the inflow quantities being experienced are showing a trend towards the maximum inflows for the water year. October through March inflows under this condition would be 215,900 AF, which is 32,600 AF more than the most probable runoff condition. The reservoir content would increase from 564,100 AF at the end of March to 950,000 AF by the end of June under these conditions.

April through September -- Seminole Reservoir release for March will be approximately 1,920 cfs, then releases will increase to about 3,850 cfs in April, 4,390 cfs in May, and back down to 3,790 cfs in June. Releases will then decrease to approximately 3,380 cfs in July, 1,750 cfs for August, and 1,150 cfs for September. Inflows for the April through July period will be approximately 1,346,400 AF, which is 584,00 AF more than the most probable runoff condition. Seminole Reservoir will reach its maximum end of month content for the year in June and July with approximately 950,000 AF in storage. This plan of operation would result in an end of year carryover storage of 857,000 AF, which would be 140 percent of average and 84 percent of active conservation capacity. Figure 12 depicts a comparison of Minimum, Most Probable, and Maximum Seminole Inflows. Figure 13 depicts a comparison of Minimum, Most Probable, and Maximum Seminole Storage.

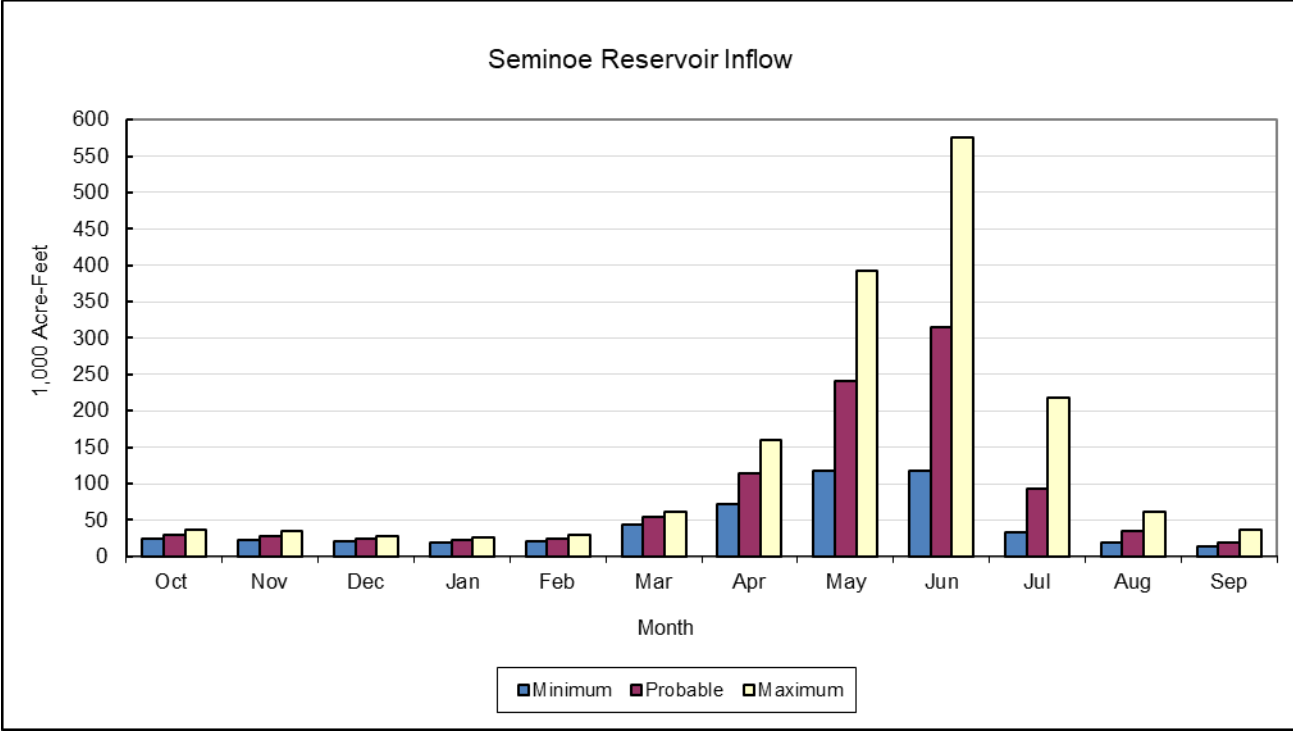


Figure 12: Seminoe Reservoir Inflow (Predicted for Water Year 2021).

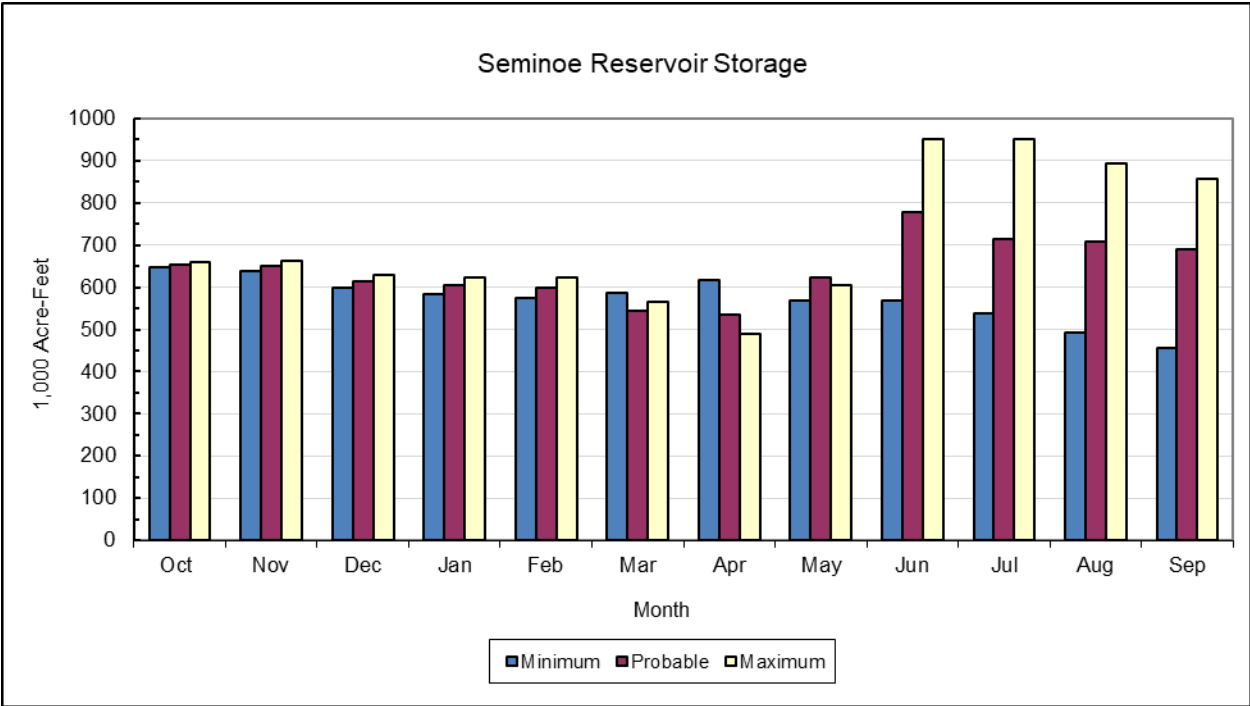


Figure 13: Seminoe Reservoir Storage (Predicted for Water Year 2021).



## **Pathfinder Reservoir**

### **Most Probable Condition – 2021**

October through March -- Pathfinder Reservoir had a storage of 650,503 AF at the beginning of WY 2021, which is 106 percent of the 30 year average and 61 percent of active conservation capacity. Under this condition, gains to the river between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are expected to be 31,600 AF for the October-March period. Fremont Canyon Powerplant releases will be reduced during October to allow Alcova Reservoir water surface level to be lowered to 5,460.00 feet to conduction repairs on the Alcova Spillway. Upon completion of the Alcova Spillway repairs releases in December will be increased to return Alcova Reservoir to its normal winter operation level of 5488 +/- 1 foot. After the Alcova winter operating range is reached, releases from Pathfinder Reservoir will be adjusted to meet Gray Reef Reservoir releases and maintain the Alcova Reservoir content between 153,800 and 158,300 AF. Pathfinder Reservoir storage is projected to be about 747,300 AF at the end of March.

April through September -- Pathfinder Reservoir storage will reach a maximum content of about 876,200 AF by the end of May and be drawn down to a storage content of about 691,300 AF by the end of the water year, which would be 132 percent of average. River gains between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are estimated at about 73,000 AF for the April-July period. In April, Fremont Canyon Powerplant releases will be coordinated with Alcova releases to refill Alcova Reservoir to its normal summer operating range of 5,498 + 1 foot.

April through September -- Fremont Canyon power releases will be scheduled to meet downstream irrigation deliveries and maintain Alcova Reservoir within the summer operating range. Pathfinder Reservoir water releases will increase in April to approximately 1,000 cfs, 1,750 cfs in May, 2,975 cfs in June and 3,250 cfs in July. Releases will decrease to 1,750 cfs for August, and approximately 975 cfs in September.

### **Reasonable Minimum Condition - 2021**

October through March -- Under this condition, river gains between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are expected to be 14,600 AF for the October-March period. Pathfinder Reservoir storage will decline to about 656,600 AF by the end of March. Fremont Canyon Powerplant releases for the period will be scheduled to maintain approximately 156,000 AF of water in Alcova Reservoir.

April through September -- River gains between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are estimated at about 18,800 AF for the April-July period under reasonable minimum inflow conditions. In April, releases will be coordinated with Alcova releases to refill Alcova Reservoir to its normal summer operating range of 5,498 ft + 1 foot by the end of April.

April through September -- Fremont Canyon power releases will be scheduled to meet downstream irrigation deliveries and maintain a storage content of approximately 179,400 AF in Alcova Reservoir. The highest Pathfinder Reservoir summer releases will be approximately 3,300 cfs, during July, and then reduced as irrigation demands drop off to end the water year at approximately 975 cfs during September. If reasonable minimum runoff develops, Pathfinder reservoir content at the end of the water year will be about 303,600 AF, which would be 58 percent of average and 28 percent of active conservation capacity.

### **Reasonable Maximum Condition - 2021**

October through March -- Under this condition, river gains between Kortes Dam and Pathfinder Dam are expected to be 49,200 AF for the period. Pathfinder Reservoir content increases through this period from 650,503 AF at the end of October to 776,700 AF by the end of March.

April through September -- In April, water releases from Fremont Canyon Powerplant will be increased as Alcova Reservoir is refilled to water surface elevation 5498 + 1 foot. The rate of release will be increased through the summer as needed to meet downstream irrigation demands.

Pathfinder Reservoir would reach a maximum content of 1,070,000 AF at the end of June. Releases will increase to approximately 2,550 cfs in April, 2,375 cfs in May and peaking at 4,250 cfs in June and decreased to 3,925 cfs July. They will decrease to approximately 3,875 cfs in August, 3,875 cfs in August and 2,090 cfs in September. The Pathfinder Reservoir end of year storage content is projected to be about 856,900 AF, which would be 164 percent of average, and 80 percent of capacity.

Under all three possible inflow conditions, a constant release of 75 cfs is planned from the Pathfinder Dam outlet works which will provide the necessary water to maintain a year-round fishery in the North Platte River below Pathfinder Reservoir. The maximum plan will require a bypass March through August from the jet flow gates below Pathfinder Dam.

Figure 14 depicts a comparison of Minimum, Most Probable, and Maximum river gains from Kortes Dam to Pathfinder Reservoir. Figure 15 depicts a comparison of Minimum, Most Probable, and Maximum Pathfinder Storage.

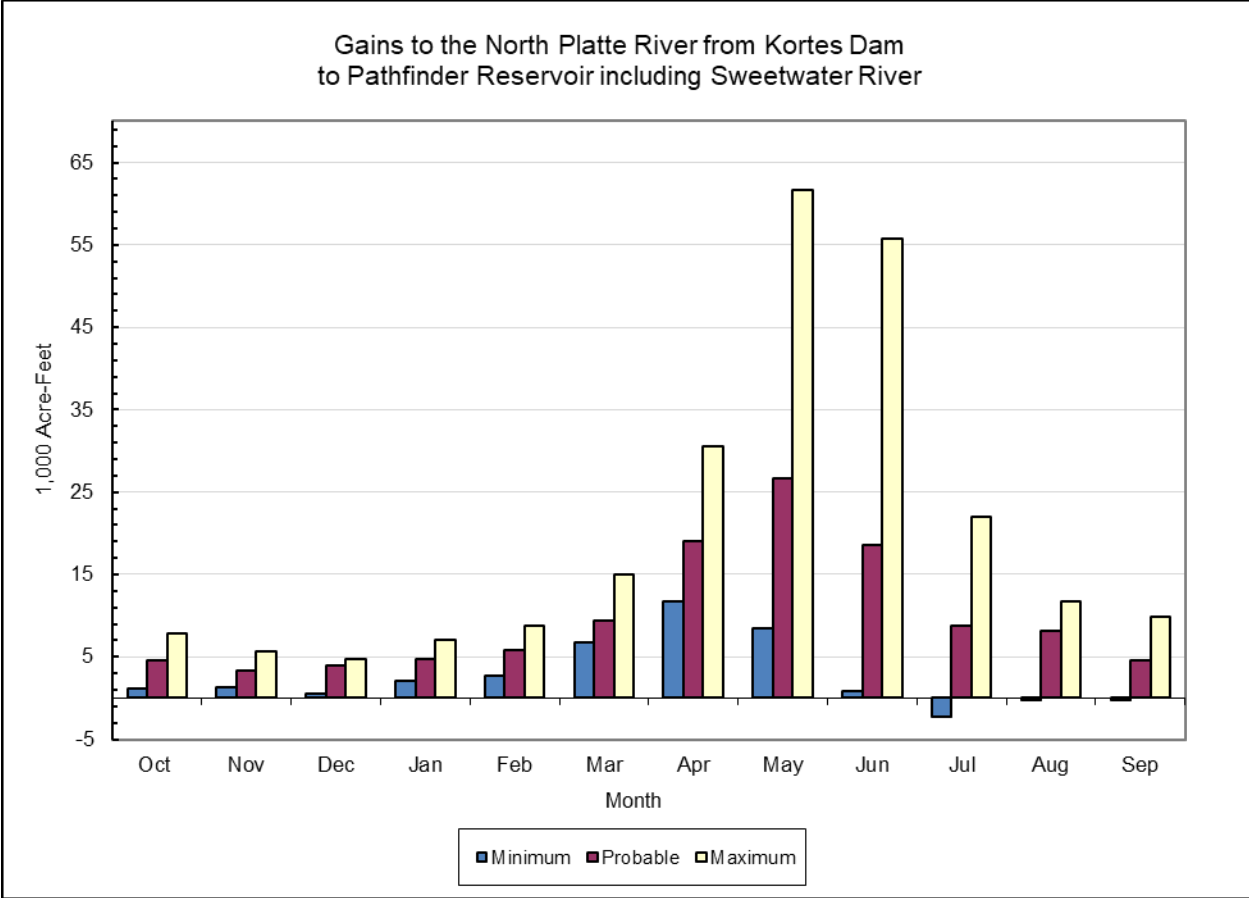


Figure 14: Gains to the North Platte River from Kortes Dam to Pathfinder Reservoir (Predicted for Water Year 2021).

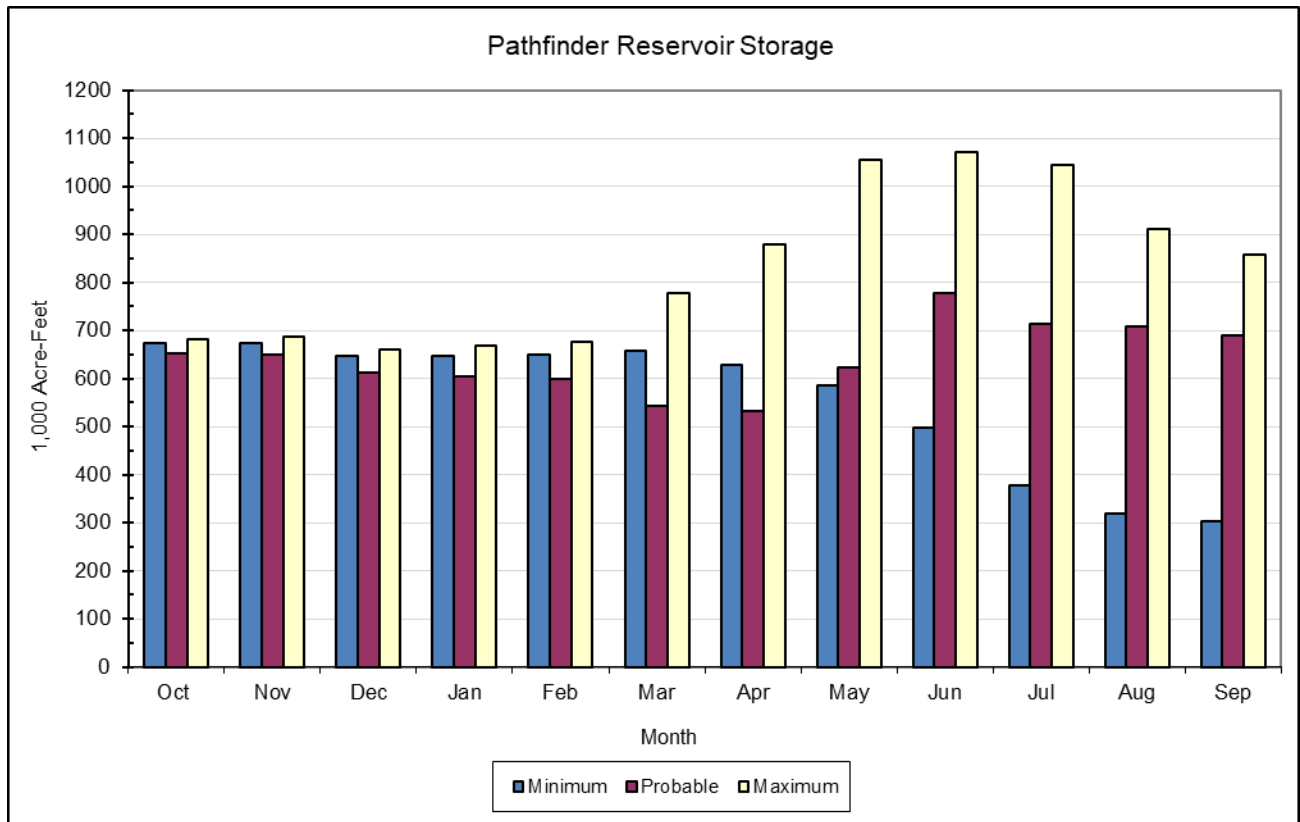


Figure 15: Pathfinder Reservoir Storage (Predicted for Water Year 2021).

## Alcova Reservoir

### Most Probable Condition - 2021

October through March -- During October through December, Alcova Reservoir will be drawn down to an elevation of 5459.00 feet to conduct repairs on the Alcova Reservoir spillway (the normal winter operating range of 5,488.0 + 1 foot). October 1 the release from Alcova Reservoir will be increased to lower Alcova Reservoir to elevation 5459.00 feet to conduct repairs on the Alcova Reservoir Spillway, Upon completion of the spillway repair on December 19, 2020 release from the upper system will be increased to fill Alcova Reservoir back to its normal reservoir elevation of 5488 +/- 1 foot by January 3, 2021 and will be maintained at the this elevation through March. The October releases for WY 2021 will be increased to a maximum release of approximately 2,800 cfs to lower the reservoir down to 5459.00 feet, once the reservoir reaches elevation 5459.00 feet the releases will be returned back to the normal winter release of 500 cfs. The normal releases will be used for production of power, maintenance of fishery flows, pollution abatement, and transfer of water to Glendo Reservoir in preparation for meeting downstream irrigation demands during the coming irrigation season. Provisions have been made in the plan to increase the releases from Alcova during March for a flushing flow below Gray Reef Reservoir.

April through September -- During April, the reservoir will be refilled to water surface elevation 5,498 feet (179,400 AF). This level will be maintained within + 1 foot to provide the necessary water surface elevation to make irrigation deliveries to Casper Canal and for recreational purposes.

Approximately 65,900 AF of water are scheduled to be delivered during the May-September period to meet Kendrick Project irrigation requirements. In addition, April releases to the river are scheduled to be approximately 34,700 AF and May-September releases to the river from Alcova Reservoir will total approximately 651,700 AF which will be re-regulated in Gray Reef Reservoir.

**Reasonable Minimum Condition - 2021**

October through September -- Operation of Alcova Reservoir would be the same as under the most probable condition, with about 65,900 AF of water scheduled to be delivered during the May-September period to meet Kendrick Project irrigation requirements. April releases are scheduled to be approximately 47,600 AF and May-September releases to the North Platte River from Alcova Reservoir will total approximately 730,000 AF. Water released from Alcova Reservoir will be re-regulated in Gray Reef Reservoir.

**Reasonable Maximum Condition - 2021**

October through September -- Operation of Alcova Reservoir would be the same as under the most probable condition, with about 65,900 AF of water are scheduled to be delivered during the May-September period to meet Kendrick Project irrigation requirements. March releases will be approximately 30,700 AF, and April releases will be approximately 127,500 AF. May-September releases to the North Platte River from Alcova Reservoir will total approximately 996,700 AF. Figure 16 depicts a comparison of Minimum, Most Probable, and Maximum Alcova Storage.

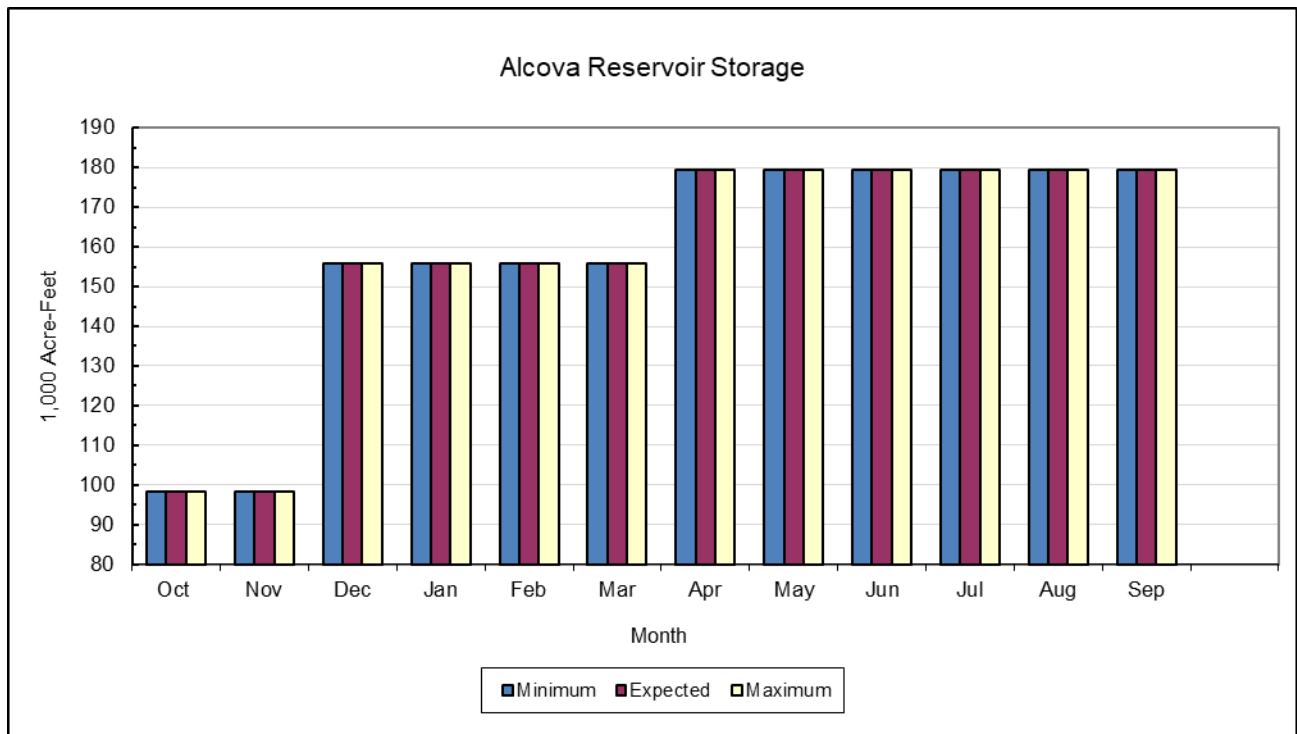


Figure 16: Alcova Reservoir Storage (Predicted for Water Year 2021).

## Gray Reef Reservoir

### Most Probable Condition - 2021

October through March -- October 1 the release from Gray Reef Reservoir will be increased to lower Alcova Reservoir to elevation 5459.00 feet to conduct repairs on the Alcova Reservoir Spillway. Upon completion of lowering Alcova to elevation 5459.00 feet, the release from Gray Reef Reservoir will be return to its normal release of 500 cfs from the end of October through March. A flushing flow is planned below Gray Reef Dam during March.

April through September -- Releases from Gray Reef Reservoir will increase to 800 cfs for April, 1,575 cfs for May, approximately 2,725 cfs. Releases will increase to approximately 3,000 cfs in July, and will be decreased to 1,600 cfs in August, and 800 cfs in September.

### Reasonable Minimum Condition - 2021

October through March -- Operation of Gray Reef Reservoir winter releases will be the same as under the most probable condition through March.

April through September -- Releases from Gray Reef Reservoir will be approximately 800 cfs in April, 3,115 cfs in May, 3,035 cfs in June, then decreased to an average release of 2,420 cfs in July, 1,550 cfs in August, and 800 cfs in September. These predicted flows may be redistributed as the irrigators adjust their use of water from storage.

### Reasonable Maximum Condition - 2021

October through March -- Operation of Gray Reef Reservoir winter releases will be the same as under the most probable condition through March and increasing to 2,140 cfs in April.

April through September -- The release from Gray Reef Reservoir will increase to approximately 2,140 cfs in April, 2,200 cfs May, 4,000 cfs June. The July and August releases will decrease to approximately 3,600 cfs, and 1,915 cfs in for September.

## Glendo and Guernsey Reservoirs

### Most Probable Condition - 2021

October through March -- Glendo Reservoir had a storage of 166,353 AF at the beginning of WY 2021, which is 127 percent of average and 34 percent of active conservation capacity of 492,022 AF. Glendo Reservoir storage will increase to approximately 426,600 AF by the end of March, which will be 111 percent of average and 87 percent of active conservation capacity.

A new area capacity table for Glendo Reservoir, based upon a recent silt survey was applied on September 30, 2012. This resulted in a reduced capacity with the top of active conservation being 492,022 AF at elevation 4,635 feet.

Guernsey Reservoir had storage of 6,001 AF at the beginning of WY 2020, which is 122 percent of average and 13 percent of active conservation capacity. Natural inflow will be stored during the winter which is expected to increase storage to 20,900 AF by March 31.

April through September -- During April, releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. Maximum Glendo Reservoir storage will be about 492,000 AF by the end of June. Releases from Glendo Reservoir during the May through September period will be based upon meeting irrigation demand.

Guernsey Reservoir content will be maintained near 28,000 AF by the beginning of May through August. A silt run in July will require close coordination of Glendo and Guernsey release schedules as Guernsey Reservoir is drawn down to about 1,000 AF in July during the silt run and will be refilled to approximately 28,000 AF following the silt run. Releases for delivery of irrigation water will draw down Glendo Reservoir to about 100,000 AF by the end of September.

### **Reasonable Minimum Condition - 2021**

October through March -- Guernsey Reservoir had a storage of 6,001 AF at the beginning of WY 2021. Under the reasonable minimum inflow conditions, natural inflow will be stored during the winter which will increase the Guernsey Reservoir content to 18,800 AF by the end of March. Glendo Reservoir content will increase from the carryover storage of 166,353 AF to an end of March content of 405,200 AF.

April through September -- During April, releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. Glendo Reservoir storage will increase to about 441,100 AF by the end of April.

The operation of Glendo and Guernsey Reservoirs will be based upon making full irrigation deliveries to the Glendo Unit and approximately 100 percent of normal deliveries to North Platte Project. The total combined North Platte System reservoir storage would be approximately 624,100 AF lower than most probable conditions by the end of the water year under reasonable minimum water supply conditions.

Guernsey Reservoir content will be maintained near 28,000 AF during April through August. A silt run in July will require close coordination of Glendo and Guernsey release schedules. September releases will be made to meet irrigation requirements leaving 100,000 AF of water in Glendo Reservoir at the end of September. Guernsey Reservoir content will be 1,000 AF at the end of September.

### **Reasonable Maximum Condition - 2021**

October through March -- Guernsey Reservoir had a storage of 6,001 AF at the beginning of WY 2021. Natural inflow will be stored during the winter which will increase Guernsey Reservoir content to 20,900 AF by the end of March. Glendo Reservoir content is expected to increase from the starting content of 135,044 AF to an end of March content of 437,800 AF.

April through September -- Under maximum conditions, re-regulation water will be released as natural flow to meet irrigation demands until the supply is used as required. An annual total of 1,796,900 AF of water will be released from Guernsey Reservoir. Guernsey Reservoir will maintain a content of 28,000 AF in April and remain at that level through August. Under reasonable maximum conditions Glendo Reservoir will increase to peak storage of 492,000 AF in June. During September, releases will be scheduled to lower Guernsey Reservoir to approximately 1,000 AF.

The operating plan shown assumes no downstream flow restrictions and normal irrigation deliveries. Glendo storage is projected to decrease to about 340,800 AF by the end of July and will be about 100,000 AF by the end of September. End of year Glendo storage would be 75 percent of average and the Total System storage at the end of the water year would be 2,000,000 AF, 149 percent of average.

Figure 17 depicts a comparison of Minimum, Most Probable, and Maximum river gains from Alcova Dam to Glendo Reservoir. Figure 18 depicts a comparison of Minimum, Most Probable, and Maximum Glendo Reservoir Storage.

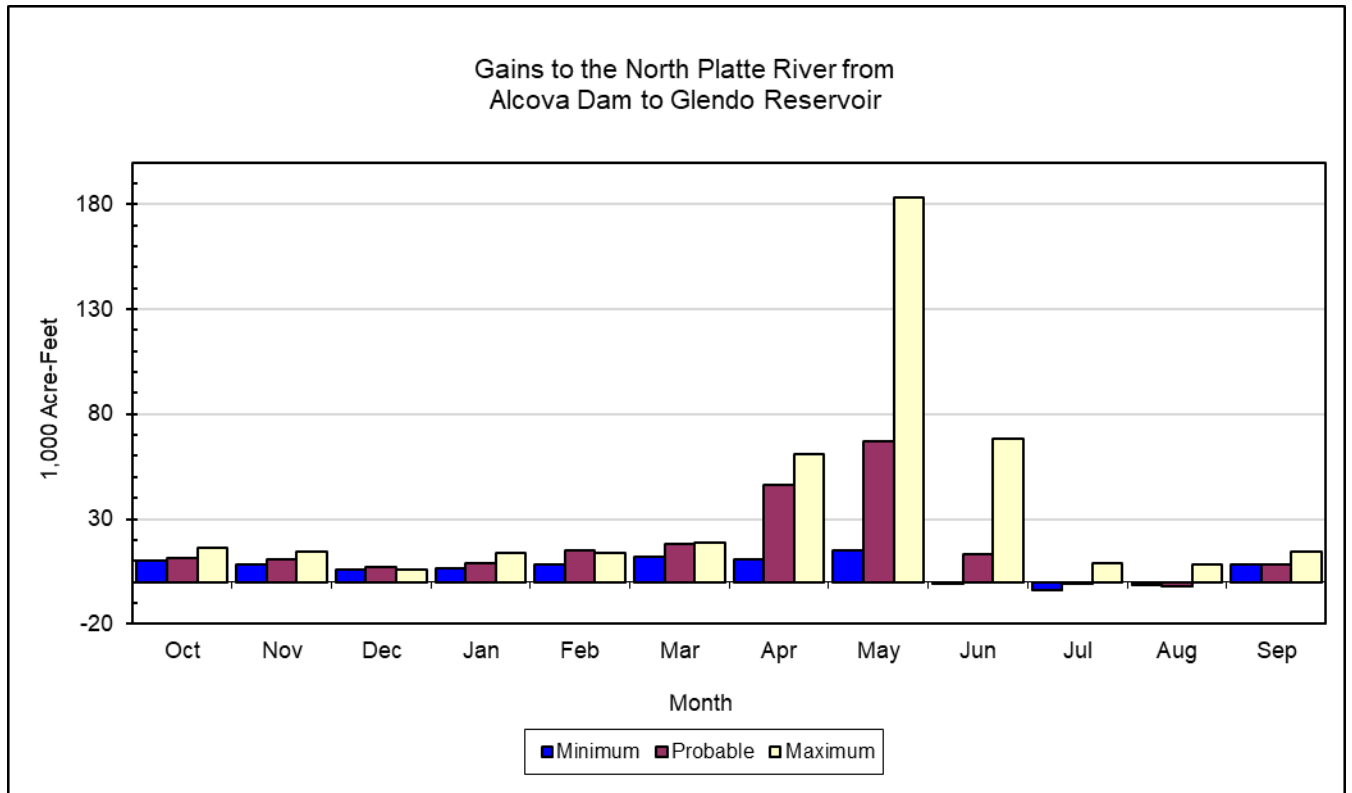


Figure 17: Gains to North Platte River from Alcova Dam to Glendo Reservoir (Predicted for Water Year 2021).



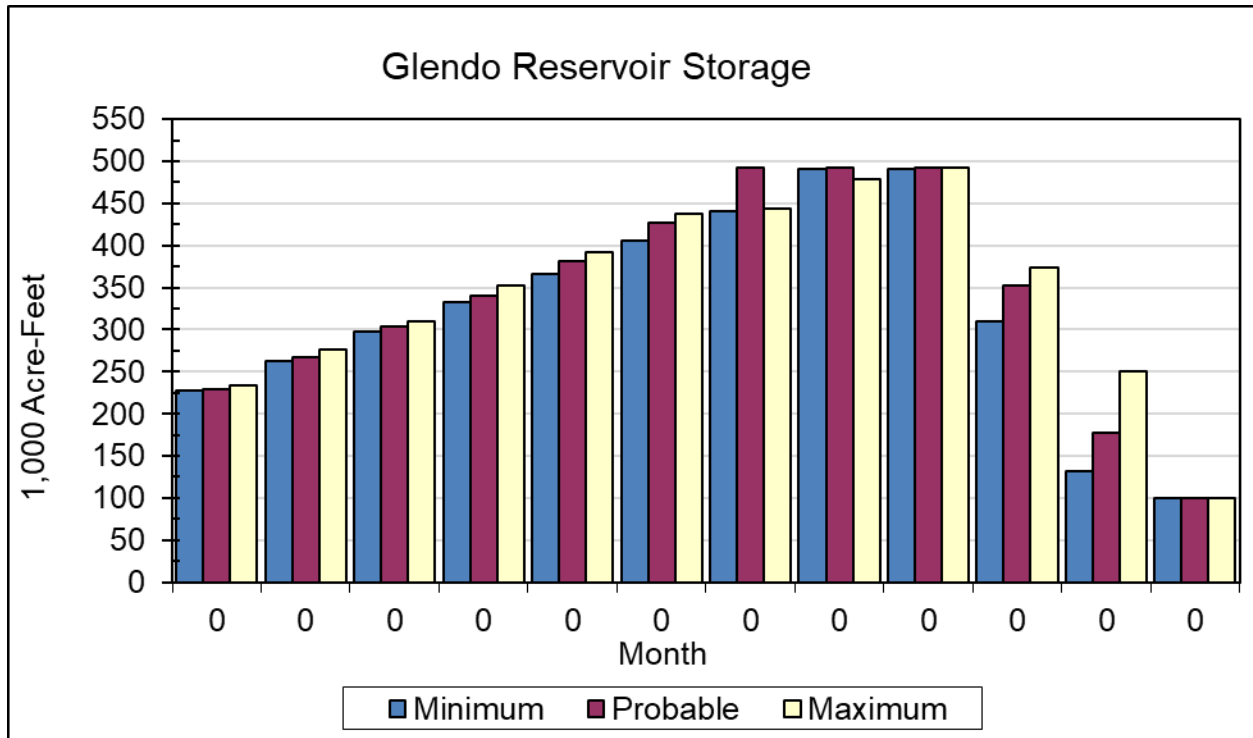


Figure 18: Glendo Reservoir Storage (Predicted for Water Year 2021).

## Ownerships

### Most Probable Condition - 2021

Stored water which is held in active conservation capacity accounts for various entities is referred to as their ownership. At the close of WY 2021, the North Platte Project storage ownership is expected to be at 539,400 AF (124 percent of average); the Kendrick Project storage ownership is expected to be at 965,700 AF (110 percent of average). Glendo storage ownership at the end of WY 2021 is expected to be 143,500 AF (109 percent of average).

### Reasonable Minimum Condition - 2021

The North Platte Project storage ownership is expected to be at 100 AF (2 percent of average) at the close of WY 2021. The Kendrick Project storage ownership is expected to be near 921,100 AF which is 105 percent of average at the close of the water year. The Kendrick Project ownership will not accrue any water under the reasonable minimum conditions, and Glendo storage ownership is expected to be 103,700 AF (79 percent of average) at the close of WY 2021.

### Reasonable Maximum Condition - 2021

The North Platte Project storage ownership is expected to be at 689.8 AF (158 percent of average) at the close of WY 2021. The Kendrick Project storage ownership is expected to be near 1,137,700 AF which is 130 percent of average at the close of the water year. Glendo storage ownership at the end of WY 2021 is expected to be 152,500 AF (116 percent of average).

Under reasonable maximum inflow conditions all storage water ownerships, in the North Platte River system, will fill during the WY 2021.

Figure 19 depicts a comparison of Minimum, Most Probable, and Maximum, Kendrick, North Platte Project, and Glendo Project Ownerships at the end of WY 2021.

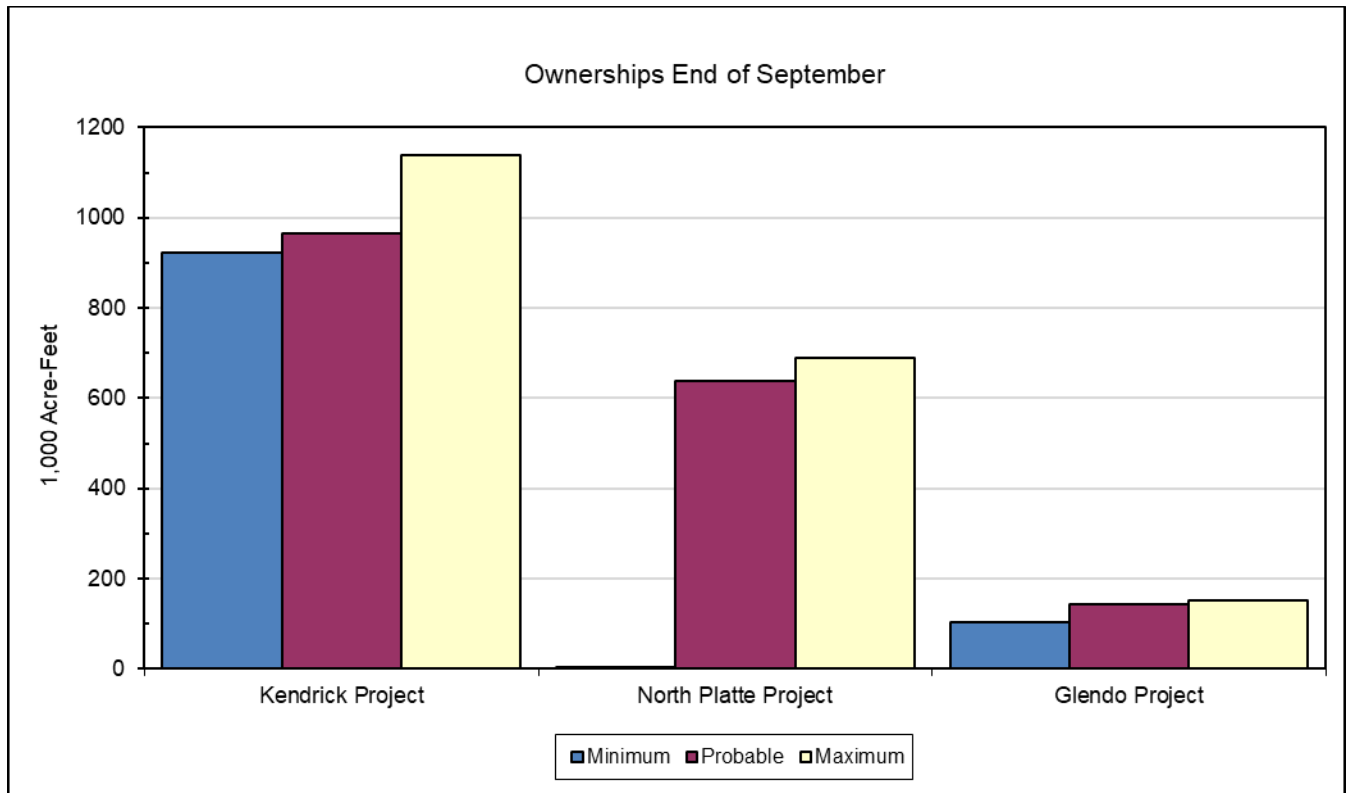


Figure 19: Ownerships at the End of September (Predicted for Water Year 2021).

## Most Probable Generation Water Year 2021

The most probable power generation breakdown for each powerplant.

Table 22: 2021

Powerplant generation predicted for the most probable inflow scenario

Powerplant	Gross generation <sup>1</sup> (GWh)	Percent of Average <sup>2</sup>
Seminoe	115.935	92
Kortes	158.754	120
Fremont Canyon	202.915	94
Alcova	106.191	100
Glendo	93.586	113
Guernsey	19.017	111
<b>Total Basin</b>	<b>696.398</b>	<b>120</b>

1 - Gross generation is based on October 2021 storage and most probable inflow. Gross generation is reported in giga-watt hours (GWh).

2 - 30 year average (1991-2020).

The Facilities Management Division creates a schedule of maintenance for all generating units. See Table 14 for the maintenance schedule for WY 2021.

Table 23: Proposed Generating Unit Maintenance Schedule (October 2020 through September 2021)

Facility and Unit No.	Scheduled Period	Description of Work
Seminoe Unit #1	2020-12-14 through 2021-01-17	Annual Maintenance
Seminoe Unit #2	2020-11-23 through 2020-12-17	Annual Maintenance
Seminoe Unit #3	2020-10-19 through 2020-11-26	Annual Maintenance
Kortes Unit #1	2020-10-19 through 2020-11-18	Annual Maintenance
Kortes Unit #2	2020-11-23 through 2020-12-17	Annual Maintenance
Kortes Unit #3	2021-01-25 through 2021-04-01	Annual Maintenance
Fremont Unit #1	2020-10-05 through 2020-11-16	Annual Maintenance
Fremont Unit #2	2020-11-24 through 2021-01-07	Annual Maintenance
Alcova Unit #1	2021-01-11 through 2021-02-25	Annual Maintenance
Alcova Unit #2	2021-03-08 through 2021-04-21	Annual Maintenance
Glendo Unit #1	2020-11-03 through 2020-12-04	Annual Maintenance
Glendo Unit #2	2021-01-11 through 2021-02-08	Annual Maintenance
Guernsey Unit #1	2020-12-04 through 2021-01-07	Annual Maintenance
Guernsey Unit #2	2021-02-08 through 2021-03-04	Annual Maintenance

# Appendix A: Operating Plans for Water Year 2021

Table 24: 2021 hydrologic operating plan for the most probable inflow scenario (762.4 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Seminole Reservoir (Initial content: 658.6 KAF)</b>														
Total Inflow	kaf	29.9	28.2	24.6	22.9	24.3	53.4	113.5	240.6	314.5	93.8	34.5	18.9	999.1
Total Inflow	cfs	486	474	400	372	438	868	1907	3913	5285	1526	561	318	NA
Turbine Release	kaf	32.7	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	0	0	0	709.8
Jetflow Release	kaf	0	0	0	0	0	0	0	0	0	147.6	34.2	31.5	213.3
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	32.7	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923.1
Total Release	cfs	532	529	974	530	529	1726	2020	2321	2600	2400	556	529	NA
Evaporation	kaf	4	2.2	1.2	1	1	2.1	3.9	4.1	7.8	9.1	7.4	5.5	49.3
End-month content	kaf	652.5	649.5	613.7	603.5	598	544	533.7	624.1	777.2	714.9	708.5	691.1	NA
End-month elevation	ft	6335.7	6335.5	6332.9	6332.2	6331.7	6327.5	6326.7	6333.7	6343.9	6340	6339.5	6338.4	NA
<b>Kortes Reservoir (Initial content: 4.7 KAF)</b>														
Total Inflow	kaf	32.7	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923.1
Total Inflow	cfs	532	529	974	530	529	1726	2020	2321	2600	2400	556	529	NA
Turbine Release	kaf	32.6	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	32.6	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923
Total Release	cfs	530	529	974	530	529	1726	2020	2321	2600	2400	556	529	NA
Min reservoir rels	cfs	530	530	974	530	530	1726	2020	2321	2200	2000	528	528	NA
Max reservoir rels	cfs	530	530	975	530	530	1725	2020	2320	2600	2400	2000	530	NA
<b>Pathfinder Reservoir (Initial content: 650.5 KAF)</b>														
Sweetwater Inflow	kaf	3.2	3.5	3.5	3.7	3.8	5	12.6	18.1	15.9	4.8	2.1	1.2	77.4
Kortes-Path Gain	kaf	1.3	-0.2	0.4	1	2	4.4	6.4	8.6	2.7	3.9	6.1	3.3	39.9
Inflow from Kortes	kaf	32.6	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Inflow	kaf	37.1	34.8	63.8	37.3	35.2	115.5	139.2	169.4	173.3	156.3	42.4	36	1040.3
Total Inflow	cfs	603	585	1038	607	634	1878	2339	2755	2912	2542	690	605	NA
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	54.5	102.5	163.6	169.1	110.8	53.6	730.7
Jetflow Release	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	4.6	13.3	31.6	4.6	4.5	199.6
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	4.6	30.1	88.4	30.9	28	31.1	59	107.1	176.9	200.7	115.4	58.1	930.3
Total Release	cfs	75	506	1438	503	504	506	992	1742	2973	3264	1877	976	NA
Evaporation	kaf	4.5	2.5	1.4	1.3	1.2	2.9	6	7.6	11.5	12.4	10.4	7.5	69.2
End-month content	kaf	678.5	680.7	654.7	659.8	665.8	747.3	821.5	876.2	861.1	804.3	720.9	691.3	NA
End-month elevation	ft	5832.5	5832.7	5831	5831.4	5831.7	5836.6	5840.6	5843.4	5842.7	5839.7	5835	5833.3	NA
Jetflow Release	cfs	75	506	1438	75	76	75	76	75	224	514	75	76	NA
Min Release	cfs	75	75	75	75	75	75	75	75	75	75	75	75	NA
<b>Alcova Reservoir (Initial content: 179.8 KAF)</b>														
Total Inflow	kaf	4.6	30.1	88.4	30.9	28	31.1	59	107.1	176.9	200.7	115.4	58.1	930.3
Total Inflow	cfs	75	506	1438	503	504	506	992	1742	2973	3264	1877	976	NA
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	34.7	96.6	162.2	180.8	98.5	47.7	795.1
Spillway Release	kaf	0	29.8	30.7	0	0	0	0	0	0	0	0	0	60.5
Casper Canal Release	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Total Release	kaf	85.4	29.8	30.7	30.7	27.8	30.7	34.7	106.1	175.5	199.1	114	57	921.5
Total Release	cfs	1389	501	499	499	501	499	583	1726	2949	3238	1854	958	NA
Evaporation	kaf	0.6	0.3	0.2	0.2	0.2	0.4	0.8	1	1.4	1.6	1.4	1.1	9.2
End-month content	kaf	98.4	98.4	155.9	155.9	155.9	155.9	179.4	179.4	179.4	179.4	179.4	179.4	NA
End-month elevation	ft	5459	5459	5487.9	5487.9	5487.9	5487.9	5498	5498	5498	5498	5498	5498	NA
<b>Gray Reef Reservoir (Initial content: 1.2 KAF)</b>														
Total Inflow	kaf	85.4	29.8	30.7	30.7	27.8	30.7	34.7	96.6	162.2	180.8	98.5	47.7	855.6
Total Inflow	cfs	1389	501	499	499	501	499	583	1571	2726	2940	1602	802	NA
Total Release	kaf	85.5	29.8	30.7	30.7	27.8	30.7	34.7	96.6	162.1	180.7	98.4	47.6	855.3
Total Release	cfs	1391	501	499	499	501	499	583	1571	2724	2939	1600	800	NA
Min reservoir rels	cfs	500	500	500	500	500	500	500	500	500	500	800	500	NA
Max reservoir rels	cfs	1500	500	500	500	500	500	583	1571	2725	3600	1600	800	NA

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Glendo Reservoir (Initial content: 135 KAF)</b>														
Alcova-Glendo Gain	kaf	11.4	10.9	7.3	9	15.2	18.3	46.3	67.2	13.5	-0.1	-2.3	8.5	205.2
Infl from Gray Reef	kaf	85.5	29.8	30.7	30.7	27.8	30.7	34.7	96.6	162.1	180.7	98.4	47.6	855.3
Total Inflow	kaf	96.9	40.7	38	39.7	43	49	81	163.8	175.6	180.6	96.1	56.1	1060.5
Total Inflow	cfs	1576	684	618	646	774	797	1361	2664	2951	2937	1563	943	NA
Turbine Release	kaf	0	0	0	0	0	0	11	156.9	167.3	231.4	221.4	129.1	917.1
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	17.8
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigation Release	kaf	0	0	0	0	0	0	0	0	0	80.2	41.8	0	122
Total Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	12.5	158.4	168.8	313.1	264.7	130.5	1056.9
Total Release	cfs	24	25	24	24	25	24	210	2576	2837	5092	4305	2193	NA
Evaporation	kaf	1.3	0.9	0.8	0.9	1	1.9	3.4	5.1	7	7	4.7	2.3	36.3
End-month content	kaf	229.1	267.4	303.1	340.4	381	426.6	491.7	492	491.8	351.9	176.7	100	NA
End-month elevation	ft	4607	4612	4616.3	4620.5	4624.8	4629.2	4635	4635	4635	4621.8	4599.2	4584.1	NA
<b>Guernsey Reservoir (Initial content: 4.5 KAF)</b>														
Glendo-Guerns Gain	kaf	3.3	2	1.8	1.5	1.1	0.7	5.1	9.2	3	2.3	0.6	5	35.6
Inflow from Glendo	kaf	1.5	1.5	1.5	1.5	1.4	1.5	12.5	158.4	168.8	313.1	264.7	130.5	1056.9
Total Inflow	kaf	4.8	3.5	3.3	3	2.5	2.2	17.6	167.6	171.8	315.4	265.3	135.5	1092.5
Total Inflow	cfs	78	59	54	49	45	36	296	2726	2887	5129	4315	2277	NA
Turbine Release	kaf	0	0	0	0	0	0	8.4	53.6	51.8	53.6	53.6	56	277
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Spillway Release	kaf	0	0	0	0	0	0	1.2	112.1	116	257.6	208.3	105.7	800.9
Total Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	10	166.9	170.8	314.3	264.4	162	1090
Total Release	cfs	5	3	5	5	4	5	168	2714	2870	5112	4300	2722	NA
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1	1.1	0.9	0.5	6
End-month content	kaf	8.8	11.9	14.7	17.2	19.3	20.9	28	28	28	28	28	1	NA
End-month elevation	ft	4399.1	4402	4404.1	4405.8	4407.1	4408.1	4411.9	4411.9	4411.9	4411.9	4411.9	4384.1	NA
Physical EOM Cont	kaf	1673.2	1713.8	1748	1782.7	1825.9	1900.6	2060.2	2205.6	2343.4	2084.4	1819.4	1668.7	NA

Table 25: 2021 ownership operating plan for the most probable inflow scenario (762.4 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>North Platte Pathfinder (initial ownership: 411.1 KAF)</b>														
Net Accrual	kaf	31.8	29.9	27.5	26.6	29	60.5	127.8	205.3	120.5	0	0	0	658.9
Evaporation	kaf	2.6	1.6	1	1	1.1	2.3	4.7	6.7	12.4	14.3	10.7	6.2	64.6
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	159.9	218.4	121.1	499.4
End-month Ownership	kaf	442.9	472.8	500.3	526.9	555.9	616.4	744.2	949.5	1070	895.8	666.7	539.4	NA
<b>North Platte Guernsey (Initial ownership: 0 KAF)</b>														
Net Accrual	kaf	0	0	8.8	10.2	16.1	10.5	0	0	0	0	0	0	45.6
Evaporation/Seepage	kaf	0	0	0.3	0.3	0.2	0.5	0.3	0.4	0.6	0.6	0	0	3.2
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	43.7	0	0	43.7
End-month Ownership	kaf	0	0	8.8	19	35.1	45.6	45.3	44.9	44.3	0	0	0	NA
<b>Inland Lakes (Initial ownership: 0 KAF)</b>														
Net Accrual	kaf	14.4	12.7	0	0	0	0	18.9	0	0	0	0	0	46
Evaporation/Seepage	kaf	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0	0	0	0	1.4
Trnsfr fm Ownership	kaf	0	0	0	0	0	0	10	35.2	0	0	0	0	45.2
End-month Ownership	kaf	14.4	27.1	27	26.9	26.8	26.7	35.6	0.1	0.1	0.1	0.1	0.1	NA
<b>Kendrick (Initial ownership: 1073.8 KAF)</b>														
Net Accrual	kaf	0	0	0	0	0	0	0	0	19.2	0	0	0	19.2
Evaporation	kaf	7	3.9	2.4	2.2	2.1	4.4	8.1	9.4	13.4	13.9	12.1	9.2	88.1
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	9.5	0	18.3	15.5	9.3	52.6
End-month Ownership	kaf	1066.8	1062.9	1060.5	1058.3	1056.2	1051.8	1043.7	1024.8	1044	1011.8	984.2	965.7	NA
<b>Glendo Unit (Initial ownership: 131.2 KAF)</b>														
Accrual	kaf	0	0	0	0	0	8	32.3	0	0	0	0	0	40.3
Evaporation	kaf	0.9	0.5	0.3	0.3	0.3	0.5	1.1	1.5	2.2	2.2	1.8	1.4	13
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	6	5	4	15
End-month Ownership	kaf	130.3	129.8	129.5	129.2	128.9	136.4	167.6	166.1	163.9	155.7	148.9	143.5	NA
<b>Re-regulation (Initial ownership: 0 KAF)</b>														
Accrual	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation/Seepage	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
End-month total	kaf	0	0	0	0	0	0	0	0	0	0	0	0	NA
<b>City of Cheyenne (Initial ownership: 8.3 KAF)</b>														
Inflow	kaf	0.7	2.5	0.7	0.5	0.6	0.8	0.3	0.6	2.7	1.1	0.7	0.7	11.9
Evaporation	kaf	0	0	0	0	0	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.9
Release	kaf	0	0	0	0	0	0	0	4	1.6	0.5	0	0	6.1
Ownership	kaf	9	11.5	12.2	12.7	13.3	14	14.2	10.7	11.7	12.1	12.6	13.2	NA
<b>Pacificorp (Initial ownership: 2 KAF)</b>														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Ownership	kaf	2	2	2	2	2	2	2	2	2	2	2	2	NA
<b>Other (Initial ownership: 7.9 KAF)</b>														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0.1	0.1	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Release	kaf	0	0	0	0	0	0	0	0	0	0.4	1.9	0	2.3
Ownership	kaf	7.8	7.7	7.7	7.7	7.7	7.7	7.6	7.5	7.4	6.9	4.9	4.8	NA



Table 26: 2021 irrigation operating plan for the most probable inflow scenario (762.4 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Kendrick (Casper Canal)</b>														
Requested	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Delivered	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
<b>Kendrick (River)</b>														
Requested	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivered	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Guernsey Deliveries</b>														
North Platte Req	kaf	0	0	0	0	0	0	0	131.7	168.8	308.3	259.4	158	1026.2
Glendo Req	kaf	0	0	0	0	0	0	0	0	2	6	5	4	17
Inland Lakes Req	kaf	0	0	0	0	0	0	10	35.2	0	0	0	0	45.2
Total Requirement	kaf	0	0	0	0	0	0	10	166.9	170.8	314.3	264.4	162	1088.4
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Actual Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	10	166.9	170.8	314.3	264.4	162	1090
Ownership EOM Cont	kaf	1673.2	1713.8	1748	1782.7	1825.9	1900.6	2060.2	2205.6	2343.4	2084.4	1819.4	1668.7	NA

Table 27: 2021 power generation operating plan for the most probable inflow scenario (762.4 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Seminole Power Plant</b>														
Turbine Release	kaf	32.7	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	0	0	0	709.8
Bypass	kaf	0	0	0	0	0	0	0	0	0	147.6	34.2	31.5	213.3
Maximum generation	gwh	32.652	31.519	32.199	31.781	28.567	31.08	29.491	31.218	32.399	0	0	0	280.906
Actual generation	gwh	5.437	5.223	9.876	5.332	4.786	17.06	19.058	23.058	26.105	0	0	0	115.935
Percent max generation	NA	17	17	31	17	17	55	65	74	81	0	0	0	41
Average kwh/af	NA	166	166	165	164	163	161	159	162	169	0	0	0	163
<b>Kortes Power Plant</b>														
Turbine Release	kaf	32.6	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923
Bypass	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum generation	gwh	28.346	26.712	27.606	27.606	24.94	27.606	26.712	27.606	26.712	27.606	27.606	26.712	325.77
Actual generation	gwh	5.607	5.418	10.303	5.607	5.057	18.249	20.674	24.544	26.608	25.387	5.882	5.418	158.754
Percent max generation	NA	20	20	37	20	20	66	77	89	100	92	21	20	49
Average kwh/af	NA	172	172	172	172	172	172	172	172	172	172	172	172	172
<b>Fremont Canyon</b>														
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	54.5	102.5	163.6	169.1	110.8	53.6	730.7
Bypass	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	4.6	13.3	31.6	4.6	4.5	199.6
Maximum generation	gwh	0	0	0	45.891	41.486	46.336	45.508	47.214	45.692	47.202	46.842	44.825	410.996
Actual generation	gwh	0	0	0	7.137	6.466	7.261	15.16	28.619	45.692	47.202	30.692	14.686	202.915
Percent max generation	NA	0	0	0	16	16	16	33	61	100	100	66	33	49
Average kwh/af	NA	0	0	0	271	272	274	278	279	279	279	277	274	278
<b>Alcova Power Plant</b>														
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	34.7	96.6	162.2	180.8	98.5	47.7	795.1
Bypass	kaf	0	29.8	30.7	0	0	0	0	0	0	0	0	0	60.5
Maximum generation	gwh	18.777	0	0	27.472	24.82	27.472	26.275	27.552	26.656	27.552	27.552	26.656	260.784
Actual generation	gwh	7.259	0	0	4.175	3.781	4.175	4.789	13.524	22.708	25.312	13.79	6.678	106.191
Percent max generation	NA	39	0	0	15	15	15	18	49	85	92	50	25	41
Average kwh/af	NA	85	0	0	136	136	136	138	140	140	140	140	140	134

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Glendo Power Plant</b>														
Turbine Release	kaf	0	0	0	0	0	0	11	156.9	167.3	231.4	221.4	129.1	917.1
Bypass	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	81.7	43.3	1.4	139.8
Maximum generation	gwh	0	0	0	0	0	0	2.562	27.389	26.516	25.332	20.729	14.302	116.83
Actual generation	gwh	0	0	0	0	0	0	1.236	18.026	19.221	25.332	20.729	9.042	93.586
Percent max generation	NA	0	0	0	0	0	0	48	66	72	100	100	63	80
Average kwh/af	NA	0	0	0	0	0	0	112	115	115	109	94	70	102
<b>Guernsey Power Plant</b>														
Turbine Release	kaf	0	0	0	0	0	0	8.4	53.6	51.8	53.6	53.6	56	277
Bypass	kaf	0.3	0.2	0.3	0.3	0.2	0.3	1.6	113.3	119	260.7	210.8	106	813
Maximum generation	gwh	0	0	0	0	0	0	0.577	3.795	3.667	3.795	3.795	3.388	19.017
Actual generation	gwh	0	0	0	0	0	0	0.577	3.795	3.667	3.795	3.795	3.388	19.017
Percent max generation	NA	0	0	0	0	0	0	100	100	100	100	100	100	100
Average kwh/af	NA	0	0	0	0	0	0	69	71	71	71	71	61	69

Table 28: 2021 hydrologic operating plan for the minimum probable inflow scenario (340 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Seminole Reservoir (Initial content: 658.6 KAF)</b>														
Total Inflow	kaf	23.6	23.1	21.3	18.8	21	44	71.5	118.3	117.7	32.3	19.1	13.4	524.1
Total Inflow	cfs	384	388	346	306	378	716	1202	1924	1978	525	311	225	NA
Turbine Release	kaf	32.7	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	0	0	0	526
Jetflow Release	kaf	0	0	0	0	0	0	0	0	0	58.6	58.6	47.6	164.8
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	32.7	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.8
Total Release	cfs	532	529	976	530	529	530	634	2550	1894	953	953	800	NA
Evaporation	kaf	3.9	2.1	1.2	1	1	2.1	4.3	4.1	6.5	7.1	5.8	3.9	43
End-month content	kaf	646.3	638.3	599.1	584.8	576	586.1	615.9	569.9	569.5	536.7	492.1	454.7	NA
End-month elevation	ft	6335.3	6334.7	6331.8	6330.7	6330.1	6330.8	6333.1	6329.6	6329.6	6326.9	6323.1	6319.7	NA
<b>Kortes Reservoir (Initial content: 4.7 KAF)</b>														
Total Inflow	kaf	32.7	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.8
Total Inflow	cfs	532	529	976	530	529	530	634	2550	1894	953	953	800	NA
Turbine Release	kaf	32.6	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.7
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	32.6	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.7
Total Release	cfs	530	529	976	530	529	530	634	2550	1894	953	953	800	NA
Min reservoir rels	cfs	528	528	974	528	528	528	528	528	528	528	528	528	NA
Max reservoir rels	cfs	530	530	975	530	530	530	634	2550	3000	1700	1700	800	NA
<b>Pathfinder Reservoir (Initial content: 650.5 KAF)</b>														
Sweetwater Inflow	kaf	2	2.4	2.2	2.1	1.9	3.8	9.2	6.4	3.9	1.3	0.8	0.7	36.7
Kortes-Path Gain	kaf	-0.9	-1.1	-1.6	0	0.8	3	2.5	2.1	-3.1	-3.5	-1.1	-1	-3.9
Inflow from Kortes	kaf	32.6	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.7
Total Inflow	kaf	33.7	32.8	60.6	34.7	32.1	39.4	49.4	165.3	113.5	56.4	58.3	47.3	723.5
Total Inflow	cfs	548	551	986	564	578	641	830	2688	1907	917	948	795	NA
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	67.4	169.1	163.6	164.1	107.7	53.6	802.1
Jetflow Release	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	32.9	31.8	4.6	4.6	4.5	219.4

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	4.6	30.1	88.4	30.9	28	31.1	71.9	202	195.4	168.7	112.3	58.1	1021.5
Total Release	cfs	75	506	1438	503	504	506	1208	3285	3284	2744	1826	976	NA
Evaporation	kaf	4.6	2.6	1.4	1.4	1.4	2.7	5.1	5.9	7.8	7.1	5.2	3.7	48.9
End-month content	kaf	675	675.1	645.9	648.3	651	656.6	629	586.4	496.7	377.3	318.1	303.6	NA
End-month elevation	ft	5832.3	5832.3	5830.5	5830.6	5830.8	5831.2	5829.4	5826.5	5819.8	5809	5802.5	5800.8	NA
Jetflow Release	cfs	75	506	1438	75	76	75	76	535	534	75	75	76	NA
Min Release	cfs	75	75	75	75	75	75	75	75	75	75	75	75	NA
<b>Alcova Reservoir (Initial content: 179.8 KAF)</b>														
Total Inflow	kaf	4.6	30.1	88.4	30.9	28	31.1	71.9	202	195.4	168.7	112.3	58.1	1021.5
Total Inflow	cfs	75	506	1438	503	504	506	1208	3285	3284	2744	1826	976	NA
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	47.6	191.5	180.7	148.8	95.4	47.7	886.3
Spillway Release	kaf	0	29.8	30.7	0	0	0	0	0	0	0	0	0	60.5
Casper Canal Release	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Total Release	kaf	85.4	29.8	30.7	30.7	27.8	30.7	47.6	201	194	167.1	110.9	57	1012.7
Total Release	cfs	1389	501	499	499	501	499	800	3269	3260	2718	1804	958	NA
Evaporation	kaf	0.6	0.3	0.2	0.2	0.2	0.4	0.8	1	1.4	1.6	1.4	1.1	9.2
End-month content	kaf	98.4	98.4	155.9	155.9	155.9	155.9	179.4	179.4	179.4	179.4	179.4	179.4	NA
End-month elevation	ft	5459	5459	5487.9	5487.9	5487.9	5487.9	5498	5498	5498	5498	5498	5498	NA
<b>Gray Reef Reservoir (Initial content: 1.2 KAF)</b>														
Total Inflow	kaf	85.4	29.8	30.7	30.7	27.8	30.7	47.6	191.5	180.7	148.8	95.4	47.7	946.8
Total Inflow	cfs	1389	501	499	499	501	499	800	3114	3037	2420	1552	802	NA
Total Release	kaf	85.5	29.8	30.7	30.7	27.8	30.7	47.6	191.5	180.6	148.7	95.3	47.6	946.5
Total Release	cfs	1391	501	499	499	501	499	800	3114	3035	2418	1550	800	NA
Min reservoir rels	cfs	500	500	500	500	500	500	800	3114	3035	2418	1550	800	NA
Max reservoir rels	cfs	3000	500	500	500	500	500	800	3115	3035	3600	3600	800	NA
<b>Glendo Reservoir (Initial content: 135 KAF)</b>														
Alcova-Glendo Gain	kaf	10.1	8.2	5.9	6.3	8.4	11.8	10.8	15.3	-0.6	-3.7	-1.6	8.4	79.3
Infl from Gray Reef	kaf	85.5	29.8	30.7	30.7	27.8	30.7	47.6	191.5	180.6	148.7	95.3	47.6	946.5
Total Inflow	kaf	95.6	38	36.6	37	36.2	42.5	58.4	206.8	180	145	93.7	56	1025.8

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Inflow	cfs	1555	639	595	602	652	691	981	3363	3025	2358	1524	941	NA
Turbine Release	kaf	0	0	0	0	0	0	17.9	150.4	171.7	229.2	221.4	83.9	874.5
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	17.9
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigation Release	kaf	0	0	0	0	0	0	0	0	0	87.6	43.8	0	131.4
Total Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	19.4	151.9	173.2	318.3	266.7	85.4	1023.8
Total Release	cfs	24	25	24	24	25	24	326	2470	2911	5177	4337	1435	NA
Evaporation	kaf	1.3	0.9	0.8	0.9	1	1.9	3.1	4.9	7	6.7	4.2	2	34.7
End-month content	kaf	227.8	263.4	297.7	332.3	366.1	405.2	441.1	491.1	490.9	310.5	131.4	100	NA
End-month elevation	ft	4606.8	4611.5	4615.7	4619.6	4623.3	4627.2	4630.6	4634.9	4634.9	4617.2	4591	4584.1	NA
<b>Guernsey Reservoir (Initial content: 4.5 KAF)</b>														
Glendo-Guerns Gain	kaf	2.2	1.5	1.2	1	1.2	1.2	0.3	2.6	-1.4	-2.9	-1.4	2.1	7.6
Inflow from Glendo	kaf	1.5	1.5	1.5	1.5	1.4	1.5	19.4	151.9	173.2	318.3	266.7	85.4	1023.8
Total Inflow	kaf	3.7	3	2.7	2.5	2.6	2.7	19.7	154.5	171.8	315.4	265.3	87.5	1031.4
Total Inflow	cfs	60	50	44	41	47	44	331	2513	2887	5129	4315	1470	NA
Turbine Release	kaf	0	0	0	0	0	0	8.4	53.6	51.8	53.6	53.6	56	277
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Spillway Release	kaf	0	0	0	0	0	0	1.2	99	116	257.6	208.3	57.7	739.8
Total Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	10	153.8	170.8	314.3	264.4	114	1028.9
Total Release	cfs	5	3	5	5	4	5	168	2501	2870	5112	4300	1916	NA
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1	1.1	0.9	0.5	6
End-month content	kaf	7.7	10.3	12.5	14.5	16.7	18.8	28	28	28	28	28	1	NA
End-month elevation	ft	4398	4400.6	4402.4	4403.9	4405.5	4406.8	4411.9	4411.9	4411.9	4411.9	4411.9	4384.1	NA
Physical EOM Cont	kaf	1661.1	1691.4	1717	1741.7	1771.6	1828.5	1899.3	1860.7	1770.4	1437.8	1154.9	1044.6	NA

Table 29: 2021 ownership operating plan for the minimum probable inflow scenario (340 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>North Platte Pathfinder (initial ownership: 411.1 KAF)</b>														
Net Accrual	kaf	22.1	22.8	20.9	19.9	22.6	48.6	78.9	7.3	0	0	0	0	243.1
Evaporation	kaf	2.6	1.6	1	1	1.1	2.2	4.3	5.7	8.4	8.4	4.1	0.9	41.3
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	17.5	284.8	243.6	86.4	632.3
End-month Ownership	kaf	433.2	456	476.9	496.8	519.4	568	646.9	654.2	628.3	335.1	87.4	0.1	NA
<b>North Platte Guernsey (Initial ownership: 0 KAF)</b>														
Net Accrual	kaf	0	0	6.8	7	9.4	12.6	0	0	0	0	0	0	35.8
Evaporation/Seepage	kaf	0	0	0.3	0.3	0.2	0.4	0.3	0.3	0.4	0	0	0	2.2
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	34.8	0	0	0	34.8
End-month Ownership	kaf	0	0	6.8	13.8	23.2	35.8	35.5	35.2	0	0	0	0	NA
<b>Inland Lakes (Initial ownership: 0 KAF)</b>														
Net Accrual	kaf	12	9.5	0	0	0	0	11	0	0	0	0	0	32.5
Evaporation/Seepage	kaf	0.3	0.2	0.1	0	0	0.1	0.1	0.2	0	0	0	0	1
Trnsfr fm Ownership	kaf	0	0	0	0	0	0	10	22.1	0	0	0	0	32.1
End-month Ownership	kaf	12	21.5	21.4	21.4	21.4	21.3	22.3	0	0	0	0	0	NA
<b>Kendrick (Initial ownership: 1073.8 KAF)</b>														
Net Accrual	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	7	3.9	2.4	2.3	2.3	4.4	7.9	9.1	13.1	13.4	11.8	9.2	86.8
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
End-month Ownership	kaf	1066.8	1062.9	1060.5	1058.2	1055.9	1051.5	1043.6	1025	998.6	966.9	939.6	921.1	NA
<b>Glendo Unit (Initial ownership: 131.2 KAF)</b>														
Accrual	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0.9	0.5	0.3	0.3	0.3	0.5	1	1.1	1.6	1.6	1.4	1	10.5
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	2	6	5	4	17
End-month Ownership	kaf	130.3	129.8	129.5	129.2	128.9	128.4	127.4	126.3	122.7	115.1	108.7	103.7	NA
<b>Re-regulation (Initial ownership: 0 KAF)</b>														
Accrual	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation/Seepage	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
End-month total	kaf	0	0	0	0	0	0	0	0	0	0	0	0	NA
<b>City of Cheyenne (Initial ownership: 8.3 KAF)</b>														
Inflow	kaf	0.7	2.5	0.7	0.5	0.6	0.8	0.3	0.6	2.7	1.1	0.7	0.7	11.9
Evaporation	kaf	0	0	0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	1.2
Release	kaf	0	0	0	0	0	0	0	4	1.6	0.5	0	0	6.1
Ownership	kaf	9	11.5	12.2	12.6	13.1	13.8	14	10.5	11.4	11.8	12.3	12.9	NA
<b>Pacificorp (Initial ownership: 2 KAF)</b>														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Ownership	kaf	2	2	2	2	2	2	2	2	2	2	2	2	NA
<b>Other (Initial ownership: 7.9 KAF)</b>														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0.1	0.1	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Release	kaf	0	0	0	0	0	0	0	0	0	0.4	1.9	0	2.3
Ownership	kaf	7.8	7.7	7.7	7.7	7.7	7.7	7.6	7.5	7.4	6.9	4.9	4.8	NA



Table 30: 2021 irrigation operating plan for the minimum probable inflow scenario (340 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Kendrick (Casper Canal)</b>														
Requested	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Delivered	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
<b>Kendrick (River)</b>														
Requested	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivered	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Guernsey Deliveries</b>														
North Platte Req	kaf	0	0	0	0	0	0	0	131.7	168.8	308.3	259.4	110	978.2
Glendo Req	kaf	0	0	0	0	0	0	0	0	2	6	5	4	17
Inland Lakes Req	kaf	0	0	0	0	0	0	10	22.1	0	0	0	0	32.1
Total Requirement	kaf	0	0	0	0	0	0	10	153.8	170.8	314.3	264.4	114	1027.3
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Actual Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	10	153.8	170.8	314.3	264.4	114	1028.9
Ownership EOM Cont	kaf	1661.1	1691.4	1717	1741.7	1771.6	1828.5	1899.3	1860.7	1770.4	1437.8	1154.9	1044.6	NA

Table 31: 2021 power generation operating plan for the minimum probable inflow scenario (340 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Seminole Power Plant</b>														
Turbine Release	kaf	32.7	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	0	0	0	526
Bypass	kaf	0	0	0	0	0	0	0	0	0	58.6	58.6	47.6	164.8
Maximum generation	gwh	32.592	31.367	31.964	31.46	28.223	31.26	30.623	31.493	30.059	0	0	0	279.041
Actual generation	gwh	5.426	5.198	9.84	5.281	4.755	5.275	6.138	25.402	18.106	0	0	0	85.421
Percent max generation	NA	17	17	31	17	17	17	20	81	60	0	0	0	31
Average kwh/af	NA	166	165	164	162	162	162	163	162	161	0	0	0	162
<b>Kortes Power Plant</b>														
Turbine Release	kaf	32.6	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.7
Bypass	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum generation	gwh	28.346	26.712	27.606	27.606	24.94	27.606	26.712	27.606	26.712	27.606	27.606	26.712	325.77
Actual generation	gwh	5.607	5.418	10.32	5.607	5.057	5.607	6.484	26.97	19.384	10.079	10.079	8.187	118.799
Percent max generation	NA	20	20	37	20	20	20	24	98	73	37	37	31	36
Average kwh/af	NA	172	172	172	172	172	172	172	172	172	172	172	172	172
<b>Fremont Canyon</b>														
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	67.4	169.1	163.6	164.1	107.7	53.6	802.1
Bypass	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	32.9	31.8	4.6	4.6	4.5	219.4
Maximum generation	gwh	0	0	0	45.792	41.378	45.86	44.253	45.325	43.094	43.283	42.067	40.096	391.148
Actual generation	gwh	0	0	0	7.122	6.449	7.187	18.231	45.325	43.094	42.003	26.793	13.137	209.341
Percent max generation	NA	0	0	0	16	16	16	41	100	100	97	64	33	54
Average kwh/af	NA	0	0	0	271	271	271	270	268	263	256	249	245	261
<b>Alcova Power Plant</b>														
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	47.6	191.5	180.7	148.8	95.4	47.7	886.3
Bypass	kaf	0	29.8	30.7	0	0	0	0	0	0	0	0	0	60.5
Maximum generation	gwh	18.777	0	0	27.472	24.82	27.472	26.275	27.552	26.656	27.552	27.552	26.656	260.784
Actual generation	gwh	7.259	0	0	4.175	3.781	4.175	6.569	26.81	25.298	20.832	13.356	6.678	118.933
Percent max generation	NA	39	0	0	15	15	15	25	97	95	76	48	25	46
Average kwh/af	NA	85	0	0	136	136	136	138	140	140	140	140	140	134

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Glendo Power Plant</b>														
Turbine Release	kaf	0	0	0	0	0	0	17.9	150.4	171.7	229.2	221.4	83.9	874.5
Bypass	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	89.1	45.3	1.5	149.3
Maximum generation	gwh	0	0	0	0	0	0	2.454	26.62	26.489	24.716	19.409	13.047	112.735
Actual generation	gwh	0	0	0	0	0	0	1.961	16.979	19.715	24.716	19.409	5.46	88.24
Percent max generation	NA	0	0	0	0	0	0	80	64	74	100	100	42	78
Average kwh/af	NA	0	0	0	0	0	0	110	113	115	108	88	65	101
<b>Guernsey Power Plant</b>														
Turbine Release	kaf	0	0	0	0	0	0	8.4	53.6	51.8	53.6	53.6	56	277
Bypass	kaf	0.3	0.2	0.3	0.3	0.2	0.3	1.6	100.2	119	260.7	210.8	58	751.9
Maximum generation	gwh	0	0	0	0	0	0	0.572	3.795	3.667	3.795	3.795	3.388	19.012
Actual generation	gwh	0	0	0	0	0	0	0.572	3.795	3.667	3.795	3.795	3.388	19.012
Percent max generation	NA	0	0	0	0	0	0	100	100	100	100	100	100	100
Average kwh/af	NA	0	0	0	0	0	0	68	71	71	71	71	61	69

Table 32: 2021 hydrologic operating plan for the maximum probable inflow scenario (1659 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Seminole Reservoir (Initial content: 658.6 KAF)</b>														
Total Inflow	kaf	36.9	34.1	28.4	26.5	29	61	159.3	392.8	576.1	218.2	60.9	36.2	1659.4
Total Inflow	cfs	600	573	462	431	522	992	2677	6388	9682	3549	990	608	NA
Turbine Release	kaf	32.7	31.5	60	32.6	29.4	118.1	186.1	192.2	187.5	0	0	0	870.1
Jetflow Release	kaf	0	0	0	0	0	0	43	77.6	37.8	201.7	107.4	68.5	536
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	6.2	0	0	6.2
Total Release	kaf	32.7	31.5	60	32.6	29.4	118.1	229.1	269.8	225.3	207.9	107.4	68.5	1412.3
Total Release	cfs	532	529	976	530	529	1921	3850	4388	3786	3381	1747	1151	NA
Evaporation	kaf	4	2.2	1.2	1	1.2	2.3	3.9	3.9	8.3	10.9	9.2	6.4	54.5
End-month content	kaf	659.5	662.4	630.3	623.7	622.7	564.1	490.7	606.4	950	950	895	857	NA
End-month elevation	ft	6336.2	6336.4	6334.1	6333.7	6333.6	6329.1	6323	6332.4	6353.6	6353.6	6350.7	6348.6	NA
<b>Kortes Reservoir (Initial content: 4.7 KAF)</b>														
Total Inflow	kaf	32.7	31.5	60	32.6	29.4	118.1	229.1	269.8	225.3	207.9	107.4	68.5	1412.3
Total Inflow	cfs	532	529	976	530	529	1921	3850	4388	3786	3381	1747	1151	NA
Turbine Release	kaf	32.6	31.5	60	32.6	29.4	118.1	155.3	160.5	155.3	160.5	107.4	68.5	1111.7
Spillway Release	kaf	0	0	0	0	0	0	73.8	109.3	70	47.4	0	0	300.5
Total Release	kaf	32.6	31.5	60	32.6	29.4	118.1	229.1	269.8	225.3	207.9	107.4	68.5	1412.2
Total Release	cfs	530	529	976	530	529	1921	3850	4388	3786	3381	1747	1151	NA
Min reservoir rels	cfs	530	530	974	530	530	528	528	530	3786	2400	1275	530	NA
Max reservoir rels	cfs	530	530	975	530	530	1920	3850	4550	5000	5000	3000	1300	NA
<b>Pathfinder Reservoir (Initial content: 650.5 KAF)</b>														
Sweetwater Inflow	kaf	3.4	3.6	2.7	2.5	2.7	6.4	19.1	45.3	44.8	13.3	4.8	3	151.6
Kortes-Path Gain	kaf	4.5	2.1	2.1	4.5	6.1	8.6	11.4	16.4	11	8.7	6.9	6.9	89.2
Inflow from Kortes	kaf	32.6	31.5	60	32.6	29.4	118.1	229.1	269.8	225.3	207.9	107.4	68.5	1412.2
Total Inflow	kaf	40.5	37.2	64.8	39.6	38.2	133.1	259.6	331.5	281.1	229.9	119.1	78.4	1653
Total Inflow	cfs	659	625	1054	644	688	2165	4363	5391	4724	3739	1937	1318	NA
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	147.3	141.5	163.6	169.1	169.1	119.9	987.1
Jetflow Release	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	4.6	89.3	72.3	69.3	4.5	381

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	4.6	30.1	88.4	30.9	28	31.1	151.8	146.1	252.9	241.4	238.4	124.4	1368.1
Total Release	cfs	75	506	1438	503	504	506	2551	2376	4250	3926	3877	2091	NA
Evaporation	kaf	4.5	2.5	1.4	1.3	1.4	3	6.2	8.5	13.4	14.8	12.5	9	78.5
End-month content	kaf	681.9	686.5	661.5	668.9	677.7	776.7	878.3	1055.2	1070	1043.7	911.9	856.9	NA
End-month elevation	ft	5832.7	5833	5831.5	5831.9	5832.5	5838.2	5843.5	5851.8	5852.5	5851.3	5845.2	5842.4	NA
Jetflow Release	cfs	75	506	1438	75	76	75	76	75	1501	1176	1127	76	NA
Min Release	cfs	75	75	75	75	75	75	75	75	75	75	75	75	NA
<b>Alcova Reservoir (Initial content: 179.8 KAF)</b>														
Total Inflow	kaf	4.6	30.1	88.4	30.9	28	31.1	151.8	146.1	252.9	241.4	238.4	124.4	1368.1
Total Inflow	cfs	75	506	1438	503	504	506	2551	2376	4250	3926	3877	2091	NA
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	127.5	135.6	190.4	196.8	196.8	114	1135.7
Spillway Release	kaf	0	29.8	30.7	0	0	0	0	0	47.8	24.7	24.7	0	157.7
Casper Canal Release	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Total Release	kaf	85.4	29.8	30.7	30.7	27.8	30.7	127.5	145.1	251.5	239.8	237	123.3	1359.3
Total Release	cfs	1389	501	499	499	501	499	2143	2360	4227	3900	3854	2072	NA
Evaporation	kaf	0.6	0.3	0.2	0.2	0.2	0.4	0.8	1	1.4	1.6	1.4	1.1	9.2
End-month content	kaf	98.4	98.4	155.9	155.9	155.9	155.9	179.4	179.4	179.4	179.4	179.4	179.4	NA
End-month elevation	ft	5459	5459	5487.9	5487.9	5487.9	5487.9	5498	5498	5498	5498	5498	5498	NA
<b>Gray Reef Reservoir (Initial content: 1.2 KAF)</b>														
Total Inflow	kaf	85.4	29.8	30.7	30.7	27.8	30.7	127.5	135.6	238.2	221.5	221.5	114	1293.4
Total Inflow	cfs	1389	501	499	499	501	499	2143	2205	4003	3602	3602	1916	NA
Total Release	kaf	85.5	29.8	30.7	30.7	27.8	30.7	127.5	135.6	238.1	221.4	221.4	113.9	1293.1
Total Release	cfs	1391	501	499	499	501	499	2143	2205	4001	3601	3601	1914	NA
Min reservoir rels	cfs	500	500	500	500	500	500	2100	2200	3105	3599	1298	500	NA
Max reservoir rels	cfs	1500	500	500	500	500	500	2143	2206	4002	3600	3600	1914	NA
<b>Glendo Reservoir (Initial content: 135 KAF)</b>														
Alcova-Glendo Gain	kaf	16.2	14.3	6.1	14.1	13.6	19	60.8	182.9	68.3	8.8	8.3	14.2	426.6
Infl from Gray Reef	kaf	85.5	29.8	30.7	30.7	27.8	30.7	127.5	135.6	238.1	221.4	221.4	113.9	1293.1
Total Inflow	kaf	101.7	44.1	36.8	44.8	41.4	49.7	188.3	318.5	306.4	230.2	229.7	128.1	1719.7

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Inflow	cfs	1654	741	598	729	745	808	3164	5180	5149	3744	3736	2153	NA
Turbine Release	kaf	0	0	0	0	0	0	22.6	235.3	230.1	232.5	221.4	209.4	1151.3
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	17.8
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigation Release	kaf	0	0	0	0	0	0	155.2	42.1	54.3	106.8	123.3	65	546.7
Total Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	179.3	278.9	285.9	340.8	346.2	275.8	1715.8
Total Release	cfs	24	25	24	24	25	24	3013	4536	4805	5543	5630	4635	NA
Evaporation	kaf	1.3	0.9	0.8	0.9	1	1.9	3.3	4.7	6.9	7.1	5.1	2.7	36.6
End-month content	kaf	233.9	275.6	310.1	352.5	391.5	437.8	443.5	478.4	492	373.9	250.4	100	NA
End-month elevation	ft	4607.6	4613	4617.1	4621.8	4625.8	4630.3	4630.8	4633.9	4635	4624.1	4609.8	4584.1	NA
<b>Guernsey Reservoir (Initial content: 4.5 KAF)</b>														
Glendo-Guerns Gain	kaf	3.2	1.7	1.5	1.8	1.2	1	7.7	32.9	22.3	6.3	-0.3	4.3	83.6
Inflow from Glendo	kaf	1.5	1.5	1.5	1.5	1.4	1.5	179.3	278.9	285.9	340.8	346.2	275.8	1715.8
Total Inflow	kaf	4.7	3.2	3	3.3	2.6	2.5	187	311.8	308.2	347.1	345.9	280.1	1799.4
Total Inflow	cfs	76	54	49	54	47	41	3143	5071	5179	5645	5626	4707	NA
Turbine Release	kaf	0	0	0	0	0	0	45.7	53.6	51.8	53.6	53.6	56	314.3
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Spillway Release	kaf	0	0	0	0	0	0	133.3	256.3	252.4	289.3	288.9	250.3	1470.5
Total Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	179.4	311.1	307.2	346	345	306.6	1796.9
Total Release	cfs	5	3	5	5	4	5	3015	5060	5163	5627	5611	5153	NA
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1	1.1	0.9	0.5	6
End-month content	kaf	8.7	11.5	14	16.8	19	20.9	28	28	28	28	28	1	NA
End-month elevation	ft	4399	4401.6	4403.6	4405.5	4406.9	4408.1	4411.9	4411.9	4411.9	4411.9	4411.9	4384.1	NA
Physical EOM Cont	kaf	1688.3	1740.3	1777.7	1823.7	1872.7	1961.3	2025.8	2353.3	2725.3	2580.9	2270.6	2000.2	NA

Table 33: 2021 ownership operating plan for the maximum probable inflow scenario (1659 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>North Platte Pathfinder (initial ownership: 411.1 KAF)</b>														
Net Accrual	kaf	42.2	38.2	32.1	32.4	36.6	73.5	184.8	343.3	0	0	0	0	783.1
Evaporation	kaf	2.6	1.6	1.1	1.1	1.2	2.5	5	6.7	14.2	13.8	11.8	8.2	69.8
Deliv fm Ownership	kaf	0	0	0	0	0	0	124.2	0	0	0	94.2	238	456.4
End-month Ownership	kaf	453.3	491.5	523.6	556	592.6	666.1	726.7	1070	1055.8	1042	936	689.8	NA
<b>North Platte Guernsey (Initial ownership: 0 KAF)</b>														
Net Accrual	kaf	0	0	7.3	15.6	14.5	8.2	0	0	0	0	0	0	45.6
Evaporation/Seepage	kaf	0	0	0.3	0.3	0.3	0.5	0.4	0	0	0	0	0	1.8
Deliv fm Ownership	kaf	0	0	0	0	0	0	45.2	0	0	0	0	0	45.2
End-month Ownership	kaf	0	0	7.3	22.9	37.4	45.6	0	0	0	0	0	0	NA
<b>Inland Lakes (Initial ownership: 0 KAF)</b>														
Net Accrual	kaf	19.1	15.7	0	0	0	0	11.2	0	0	0	0	0	46
Evaporation/Seepage	kaf	0.3	0.3	0.1	0.1	0.1	0.1	0.2	0.3	0	0	0	0	1.5
Trnsfr fm Ownership	kaf	0	0	0	0	0	0	10	35.2	0	0	0	0	45.2
End-month Ownership	kaf	19.1	34.8	34.7	34.6	34.5	34.4	35.6	0.1	0.1	0.1	0.1	0.1	NA
<b>Kendrick (Initial ownership: 1073.8 KAF)</b>														
Net Accrual	kaf	0	0	0	0	0	0	0	25.2	132.7	0	0	0	157.9
Evaporation	kaf	7	3.9	2.3	2.1	2.3	4.5	7.9	9.7	14.1	15.7	13.4	10.1	93
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	0	15.5	9.3	24.8
End-month Ownership	kaf	1066.8	1062.9	1060.6	1058.5	1056.2	1051.7	1043.8	1069	1201.7	1186	1157.1	1137.7	NA
<b>Glendo Unit (Initial ownership: 131.2 KAF)</b>														
Accrual	kaf	0	0	0	0	0	11.3	32	0	0	0	0	0	43.3
Evaporation	kaf	0.9	0.5	0.3	0.3	0.3	0.5	1	1.6	2.2	2.2	1.9	1.3	13
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	0	5	4	9
End-month Ownership	kaf	130.3	129.8	129.5	129.2	128.9	139.7	170.7	169.1	166.9	164.7	157.8	152.5	NA
<b>Re-regulation (Initial ownership: 0 KAF)</b>														
Accrual	kaf	0	0	0	0	0	0	25.1	0	255.2	0	0	0	280.3
Evaporation/Seepage	kaf	0	0	0	0	0	0	0	0.3	0.3	3.6	1.9	0	6.1

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Release	kaf	0	0	0	0	0	0	0	0	0	109	165.2	0	274.2
End-month total	kaf	0	0	0	0	0	0	25.1	24.8	279.7	167.1	0	0	NA
<b>City of Cheyenne (Initial ownership: 8.3 KAF)</b>														
Inflow	kaf	0.7	2.5	0.7	0.5	0.6	0.8	0.3	0.6	2.7	1.1	0.7	0.7	11.9
Evaporation	kaf	0	0	0	0	0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.9
Release	kaf	0	0	0	0	0	0	0	4	1.6	0.5	0	0	6.1
Ownership	kaf	9	11.5	12.2	12.7	13.3	14	14.2	10.7	11.6	12	12.6	13.2	NA
<b>Pacificorp (Initial ownership: 2 KAF)</b>														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Ownership	kaf	2	2	2	2	2	2	2	2	2	2	2	2	NA
<b>Other (Initial ownership: 7.9 KAF)</b>														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0.1	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.7
Release	kaf	0	0	0	0	0	0	0	0	0	0.4	1.9	0	2.3
Ownership	kaf	7.8	7.8	7.8	7.8	7.8	7.8	7.7	7.6	7.5	7	5	4.9	NA



Table 34: 2021 irrigation operating plan for the maximum probable inflow scenario (1659 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Kendrick (Casper Canal)</b>														
Requested	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Delivered	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
<b>Kendrick (River)</b>														
Requested	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivered	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Guernsey Deliveries</b>														
North Platte Req	kaf	0	0	0	0	0	0	169.4	275.9	305.2	340	340	302.6	1733.1
Glendo Req	kaf	0	0	0	0	0	0	0	0	2	6	5	4	17
Inland Lakes Req	kaf	0	0	0	0	0	0	10	35.2	0	0	0	0	45.2
Total Requirement	kaf	0	0	0	0	0	0	179.4	311.1	307.2	346	345	306.6	1795.3
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Actual Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	179.4	311.1	307.2	346	345	306.6	1796.9
Ownership EOM Cont	kaf	1688.3	1740.3	1777.7	1823.7	1872.7	1961.3	2025.8	2353.3	2725.3	2580.9	2270.6	2000.2	NA

Table 35: 2021 power generation operating plan for the maximum probable inflow scenario (1659 KAF April - July inflow into Seminole Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Seminole Power Plant</b>														
Turbine Release	kaf	32.7	31.5	60	32.6	29.4	118.1	186.1	192.2	187.5	0	0	0	870.1
Bypass	kaf	0	0	0	0	0	0	43	77.6	37.8	207.9	107.4	68.5	542.2
Maximum generation	gwh	32.721	31.691	32.488	32.125	28.95	31.502	29.294	30.662	32.335	0	0	0	281.768
Actual generation	gwh	5.448	5.254	9.92	5.36	4.822	19.138	29.294	30.662	32.335	0	0	0	142.233
Percent max generation	NA	17	17	31	17	17	61	100	100	100	0	0	0	50
Average kwh/af	NA	167	167	165	164	164	162	157	160	172	0	0	0	163
<b>Kortes Power Plant</b>														
Turbine Release	kaf	32.6	31.5	60	32.6	29.4	118.1	155.3	160.5	155.3	160.5	107.4	68.5	1111.7
Bypass	kaf	0	0	0	0	0	0	73.8	109.3	70	47.4	0	0	300.5
Maximum generation	gwh	28.346	26.712	27.606	27.606	24.94	27.606	26.712	27.606	26.712	27.606	27.606	26.712	325.77
Actual generation	gwh	5.607	5.418	10.32	5.607	5.057	20.313	26.712	27.606	26.712	27.606	18.473	11.782	191.213
Percent max generation	NA	20	20	37	20	20	74	100	100	100	100	67	44	59
Average kwh/af	NA	172	172	172	172	172	172	172	172	172	172	172	172	172
<b>Fremont Canyon</b>														
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	147.3	141.5	163.6	169.1	169.1	119.9	987.1
Bypass	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	4.6	89.3	72.3	69.3	4.5	381
Maximum generation	gwh	0	0	0	45.963	41.571	46.522	45.663	47.298	45.808	47.348	47.306	45.703	413.182
Actual generation	gwh	0	0	0	7.149	6.479	7.291	41.114	39.579	45.808	47.348	47.306	33.495	275.569
Percent max generation	NA	0	0	0	16	16	16	90	84	100	100	100	73	67
Average kwh/af	NA	0	0	0	272	272	275	279	280	280	280	280	279	279
<b>Alcova Power Plant</b>														
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	127.5	135.6	190.4	196.8	196.8	114	1135.7
Bypass	kaf	0	29.8	30.7	0	0	0	0	0	47.8	24.7	24.7	0	157.7
Maximum generation	gwh	18.777	0	0	27.472	24.82	27.472	26.275	27.552	26.656	27.552	27.552	26.656	260.784
Actual generation	gwh	7.259	0	0	4.175	3.781	4.175	17.595	18.984	26.656	27.552	27.552	15.96	153.689
Percent max generation	NA	39	0	0	15	15	15	67	69	100	100	100	60	59
Average kwh/af	NA	85	0	0	136	136	136	138	140	140	140	140	140	135

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
<b>Glendo Power Plant</b>														
Turbine Release	kaf	0	0	0	0	0	0	22.6	235.3	230.1	232.5	221.4	209.4	1151.3
Bypass	kaf	1.5	1.5	1.5	1.5	1.4	1.5	156.7	43.6	55.8	108.3	124.8	66.4	564.5
Maximum generation	gwh	0	0	0	0	0	0	2.507	26.47	26.317	25.652	22.186	16.351	119.483
Actual generation	gwh	0	0	0	0	0	0	2.507	26.47	26.317	25.652	22.186	16.351	119.483
Percent max generation	NA	0	0	0	0	0	0	100	100	100	100	100	100	100
Average kwh/af	NA	0	0	0	0	0	0	111	112	114	110	100	78	104
<b>Guernsey Power Plant</b>														
Turbine Release	kaf	0	0	0	0	0	0	45.7	53.6	51.8	53.6	53.6	56	314.3
Bypass	kaf	0.3	0.2	0.3	0.3	0.2	0.3	133.7	257.5	255.4	292.4	291.4	250.6	1482.6
Maximum generation	gwh	0	0	0	0	0	0	3.138	3.795	3.667	3.795	3.795	3.388	21.578
Actual generation	gwh	0	0	0	0	0	0	3.138	3.795	3.667	3.795	3.795	3.388	21.578
Percent max generation	NA	0	0	0	0	0	0	100	100	100	100	100	100	100
Average kwh/af	NA	0	0	0	0	0	0	69	71	71	71	71	61	69

## Appendix B: Glossary

**Annual Operating Plan (AOP)** - An annual publication which is prepared, reviewed, and presented to the public, with a summary of the actual operations and outlook for the coming water year.

**Acre-Foot (AF)** - A measure of volume of water equal to an area of 1 acre covered with water 1 foot deep (43,560 cubic feet).

**Basin** - The watershed from which overland runoff flows into the North Platte River. When used alone in this report it refers to the North Platte River Drainage Basin upstream of Guernsey Dam.

**Bypass** - That amount of water released from a reservoir other than through the powerplant for those reservoirs which have a powerplant connected to them.

**Cubic foot per second (cfs)** - The rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute. The volume of water represented by a flow of 1 cubic foot per second for 24 hours is equivalent to 86,400 cubic feet, approximately 1.983 AF, or 646,272 gallons.

**Evaporation pool** - A volume of water set aside in the accounting process from which reservoir evaporation is subtracted as it occurs (used in Glendo storage accounting).

**Flood pool** - A physical space in the reservoir which is to be occupied only by water from flood events. In Glendo Reservoir, the volume between reservoir elevations 4635.0 feet and 4653.0 feet is reserved exclusively for flood control.

**Gains** - Water which enters a river in a defined reach from a source other than an upstream release. When flow released into a reach is greater than the river flow exiting the lower end of the reach, the net gain is negative (loss of water in the reach).

**Giga Watt hour (GWh)** - A unit of power equal to one billion watt hours.

**Head** - The difference in elevation between the reservoir water surface and the power generating turbines at a powerplant which is connected to a reservoir.

**Hydromet** - Computer software designed for the acquisition, processing, storage, and retrieval of hydrological and meteorological data which is gathered via satellite from remote sites.

**Inflow** - As used in this report is any water which enters a reservoir irrespective of whether it originated in the reach or was released from an upstream storage reservoir.

**Inland Lakes** - A series of four off-stream storage reservoirs on the Interstate Canal system in Nebraska which are used to store and re-release irrigation water (Lake Alice, Lake Minatare, Little Lake Alice, and Lake Winters Creek).

**Megawatt (MW)** - A unit of power equal to one million watts.

**Natural flow** - River flow which has originated from a source other than reservoir storage.

**NRCS** – The Natural Resources Conservation Service which is a government agency under the Department of Agriculture.

**Power pool** - That space in a reservoir which must be full in order to efficiently generate electrical power through an associated turbine generator.

**Precipitation** - A deposit on the earth of hail, mist, rain, sleet, or snow.

**Runoff** - That part of precipitation on the Basin which appears as flow in the North Platte River.

**Silt Run** - The name given to the practice of flushing silt from Guernsey Reservoir into the North Platte River downstream where the silt laden water is diverted by irrigators. The silt tends to settle in the slower moving water of canals and laterals helping to seal the wetted perimeter and reduce seepage losses.

**SNOTEL** - Snowpack telemetry network. A network of NRCS automated sites which continually monitor snowpack and weather conditions and transmit data to a data retrieval center in Portland, Oregon.

**System** - As used in the report the System includes all storage, delivery, and power generating facilities on the mainstem of the North Platte River in Wyoming.

**SWE** – Snow Water Equivalent is the amount of water in the snowpack expressed in inches.

**Water Year (WY)** - October 1 through September 30.

## Appendix C: Historical Watershed Runoff

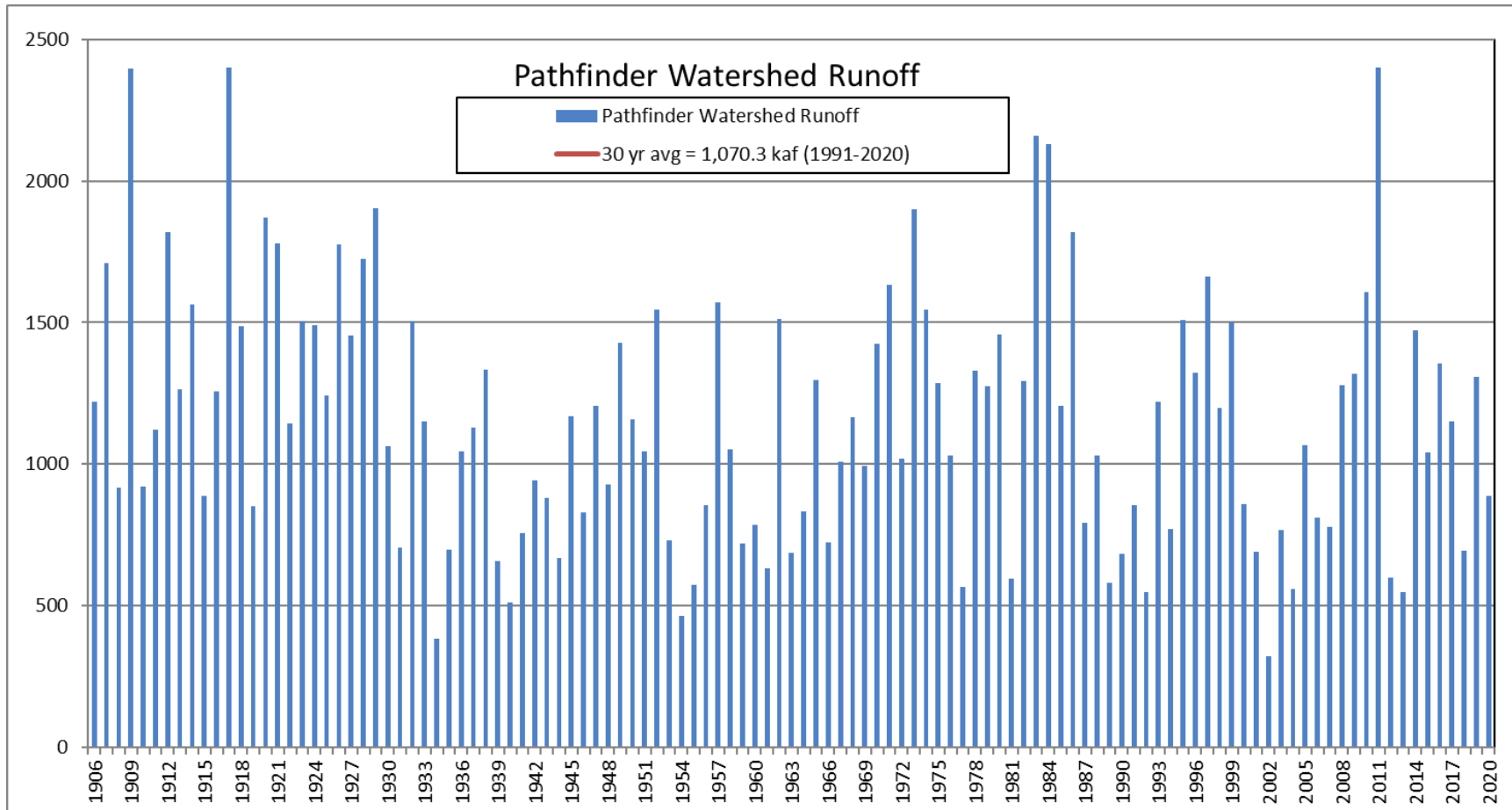


Figure 20: Pathfinder Watershed Runoff 1906-2020

# Appendix D: Reservoir Data Definition Sheets

## A. General:

Dam design and reservoir operation utilize reservoir capacity and water surface elevation data. To insure uniformity in the establishment, use, and publication of this data the following standard definitions of water surface elevations and reservoir capacities shall be used.

## B. Water Surface Elevation Definitions:

Maximum Water Surface - The highest acceptable water surface elevation with all factors affecting the safety of the structure considered. Normally it is the highest water surface elevation resulting from a computed routing of the inflow design flood through the reservoir on the basis of established operating criteria. It is the top of surcharge capacity.

Top of Exclusive Flood Control Capacity - The reservoir water surface elevation at the top of the reservoir capacity allocated to exclusive use for the regulating of flood inflows to reduce damage downstream.

Maximum Controllable Water Surface Elevation - The highest reservoir water surface elevation at which gravity flows from the reservoir can be completely shut off.

Top of Joint Use Capacity - The reservoir water surface elevation at the top of the reservoir capacity allocated to joint use, i.e., flood control and conservation purposes.

Top of Active Conservation Capacity - The reservoir water surface elevation at the top of the capacity allocated to the storage of water for conservation purposes only.

Top of Inactive Capacity - The reservoir water surface elevation below which the reservoir will not be evacuated under normal conditions.

Top of Dead Capacity - The lowest elevation in the reservoir from which water can be drawn by gravity.

Streambed at the Dam Axis - The elevation of the lowest point in the streambed at the axis of the dam prior to construction. This elevation normally defines the zero for the area-capacity tables.

## C. Capacity Definitions:

Surcharge Capacity - The reservoir capacity provided for use in passing the inflow design flood through the reservoir. It is the reservoir capacity between the maximum water surface elevation and the highest of the following elevations:

- a) Top of exclusive flood control capacity
- b) Top of joint use capacity

c) Top of active conservation capacity

Total Capacity - The reservoir capacity below the highest of the elevations representing the top of exclusive flood control capacity, the top of joint use capacity, or the top of active conservation capacity. In the case of a natural lake which has been enlarged, the total capacity includes the dead capacity of the lake. Total capacity is used to express the total quantity of water which can be impounded and is exclusive of surcharge capacity.

Live Capacity - The part of the total capacity from which water can be withdrawn by gravity. It is equal to the total capacity less the dead capacity.

Active Capacity - The reservoir capacity normally usable for storage and regulation of reservoir inflows to meet established reservoir operating requirements. Active capacity extends from the highest of the top of exclusive flood control capacity, the top of joint use capacity, or the top of active conservation capacity to the top of inactive capacity. It is the total capacity less the sum of the inactive and dead capacities.

Exclusive Flood Control Capacity - The reservoir capacity assigned to the sole purpose of regulating flood inflows to reduce flood damage downstream.

Joint Use Capacity - The reservoir capacity assigned to flood control purposes during certain periods of the year and to conservation purposes during other periods of the year.

Active Conservation Capacity - The reservoir capacity assigned to regulate reservoir inflow for irrigation, power, municipal, and industrial, fish and wildlife, navigation, recreation, water quality, and other purposes. It does not include exclusive flood control or joint use capacity. The active conservation capacity extends from the top of the active conservation capacity to the top of the inactive capacity.



# SEMINOE RESERVOIR ALLOCATIONS

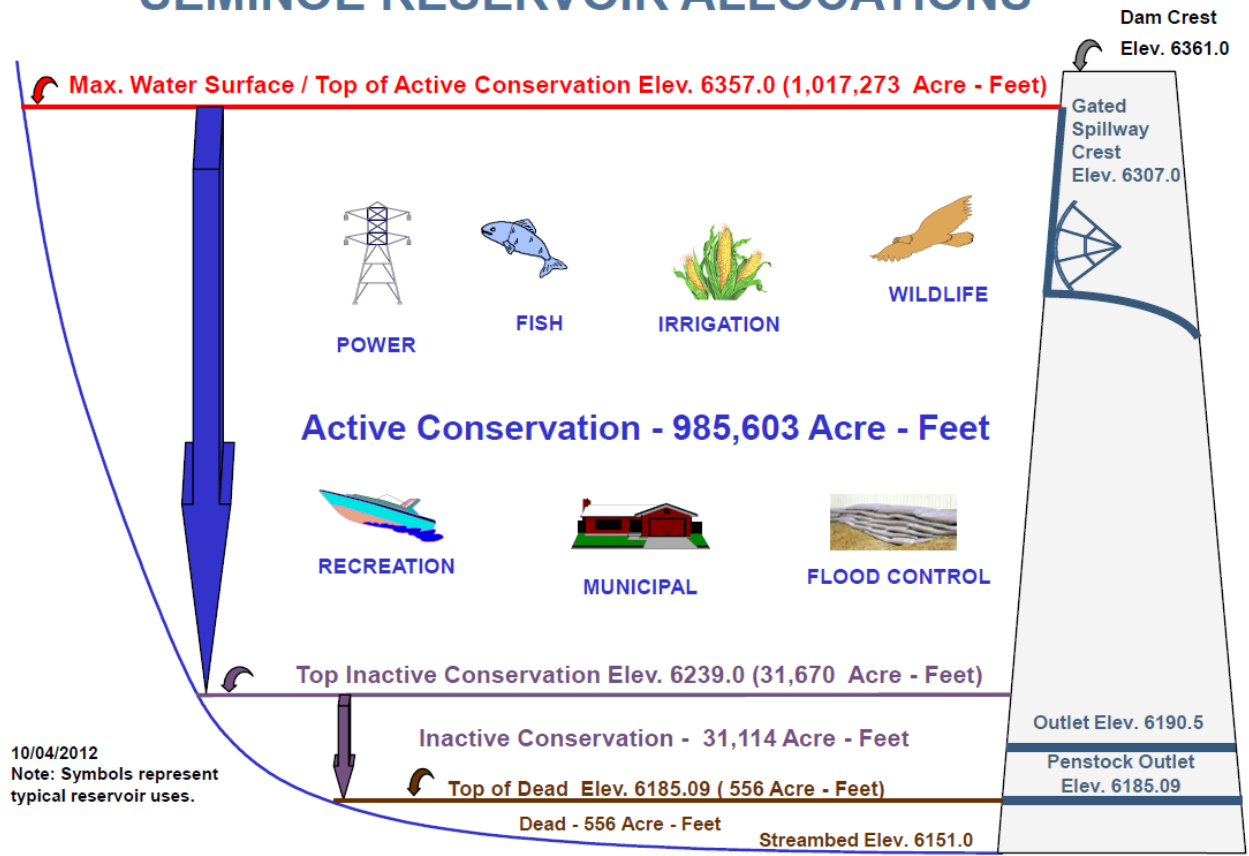


Figure 21: Seminoe Reservoir Allocation

# KORTES RESERVOIR ALLOCATIONS

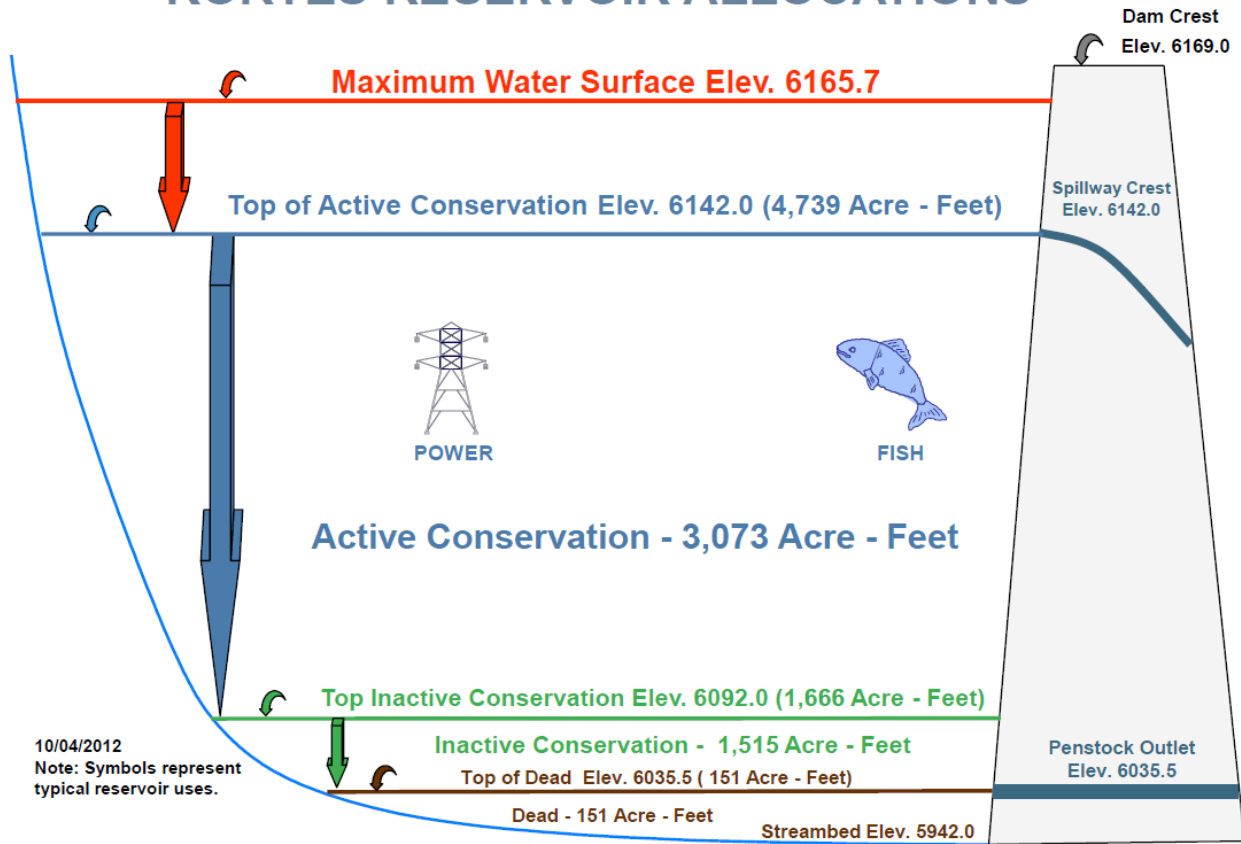


Figure 22: Kortes Reservoir Allocation

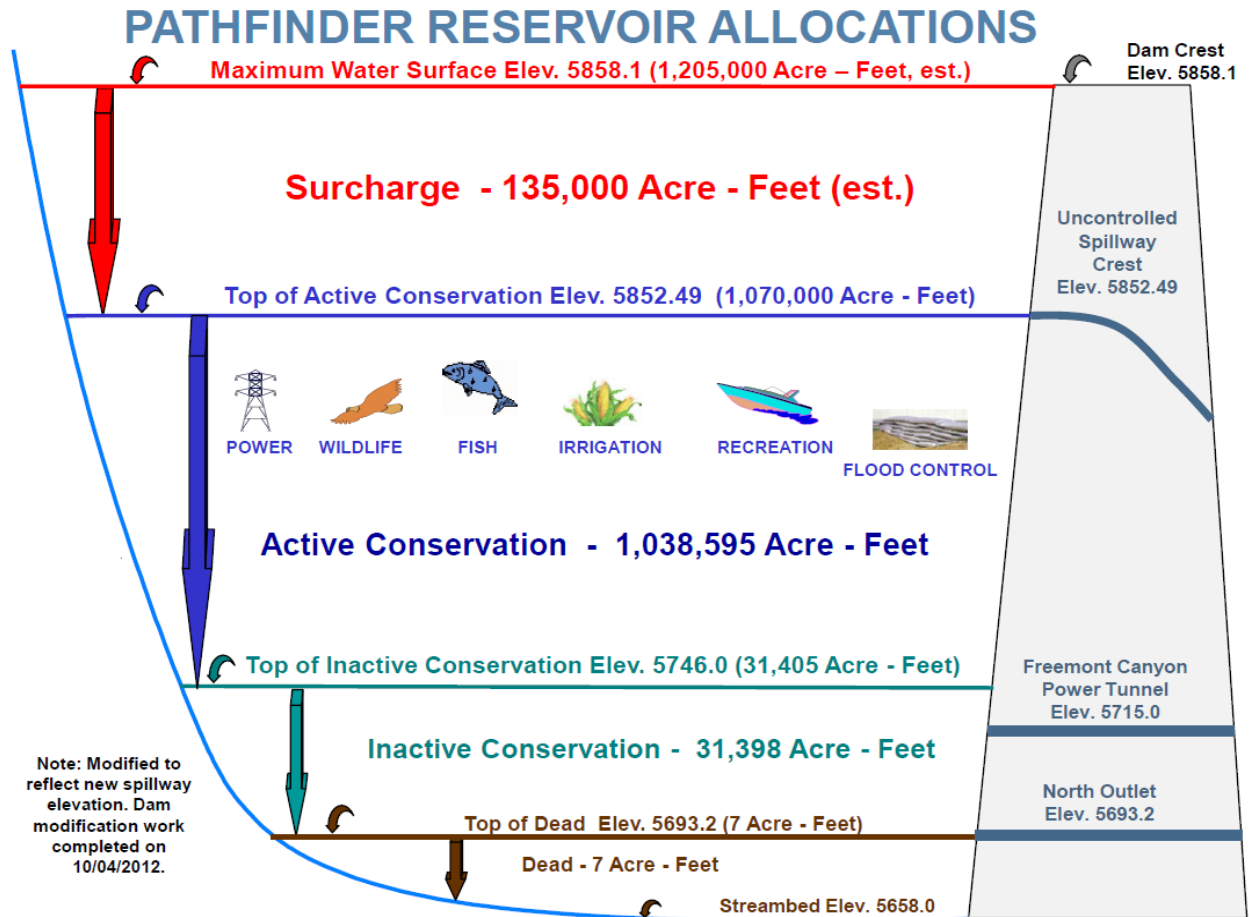


Figure 23: Pathfinder Reservoir Allocation

# ALCOVA RESERVOIR ALLOCATIONS

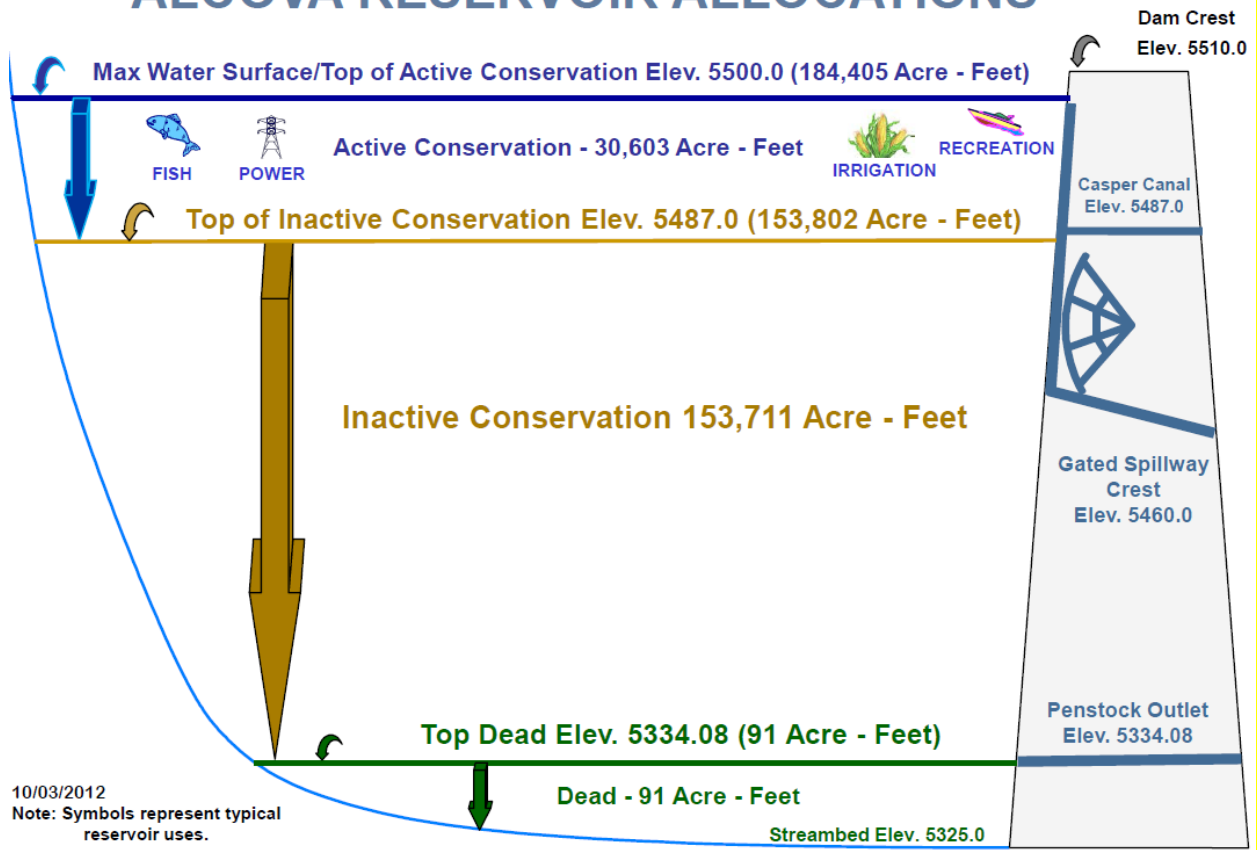


Figure 24: Alcova Reservoir Allocation

# GRAY REEF RESERVOIR ALLOCATIONS

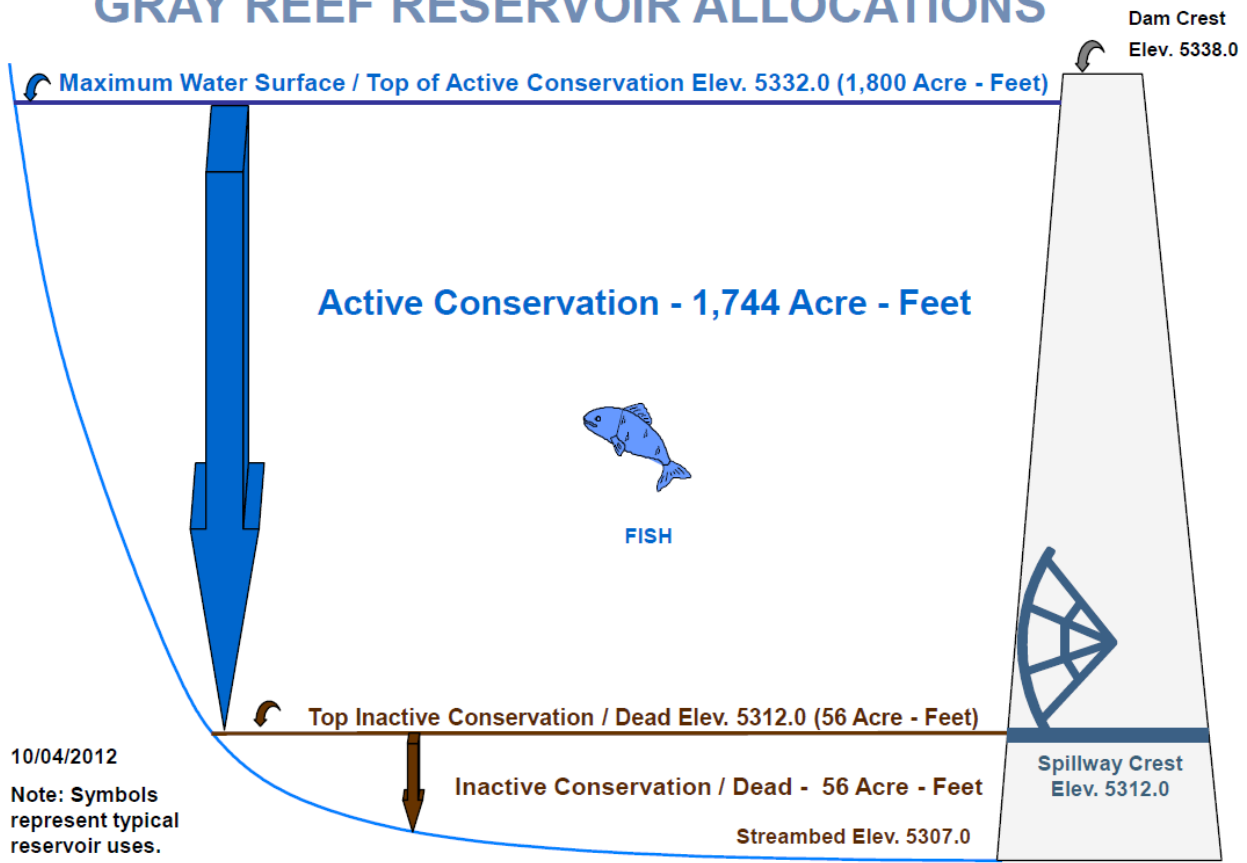


Figure 25: Gray Reef Reservoir Allocation

# GLENDO RESERVOIR ALLOCATIONS

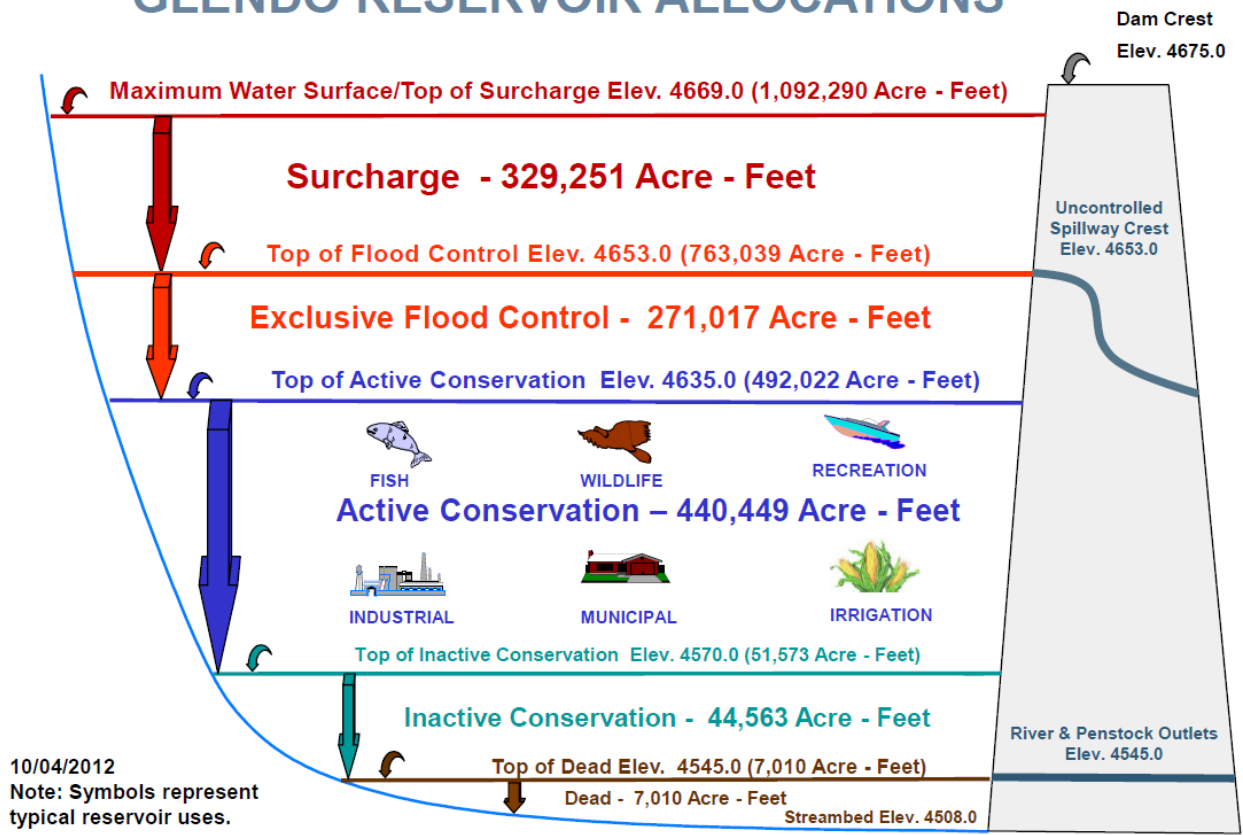


Figure 26: Glendo Reservoir Allocation

# GUERNSEY RESERVOIR ALLOCATIONS

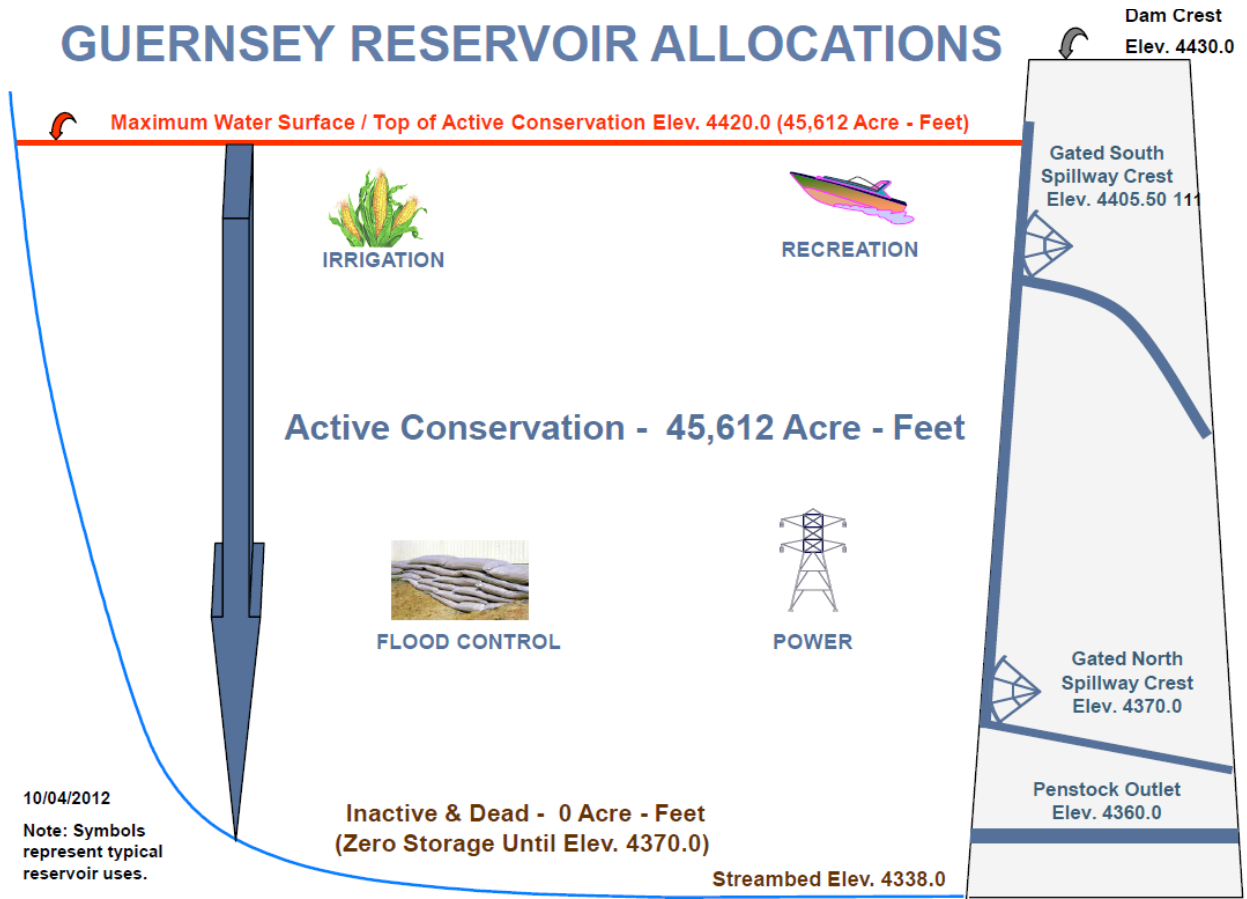


Figure 27: Guernsey Reservoir Allocation

# LAKE ALICE RESERVOIR ALLOCATIONS

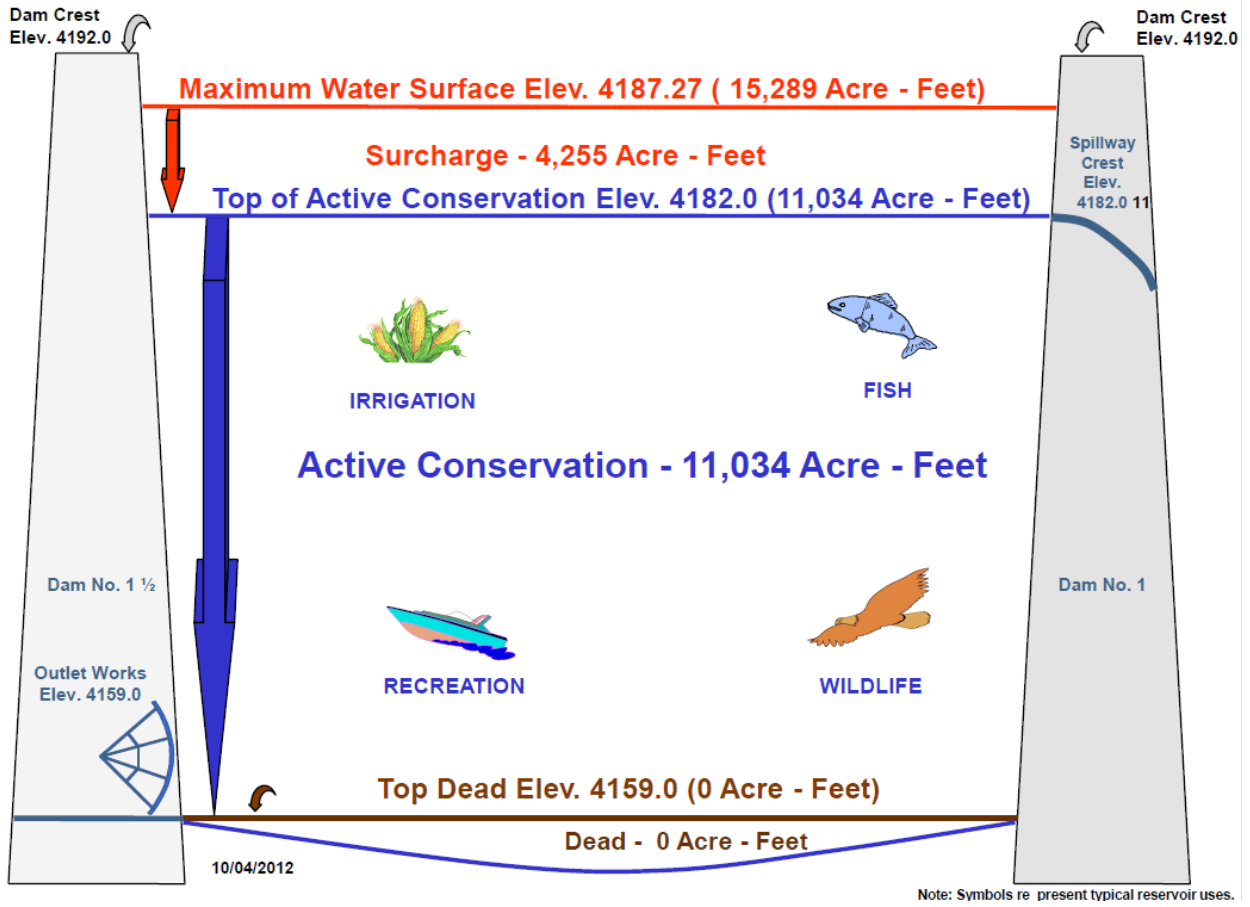


Figure 28: Lake Alice Reservoir Allocation



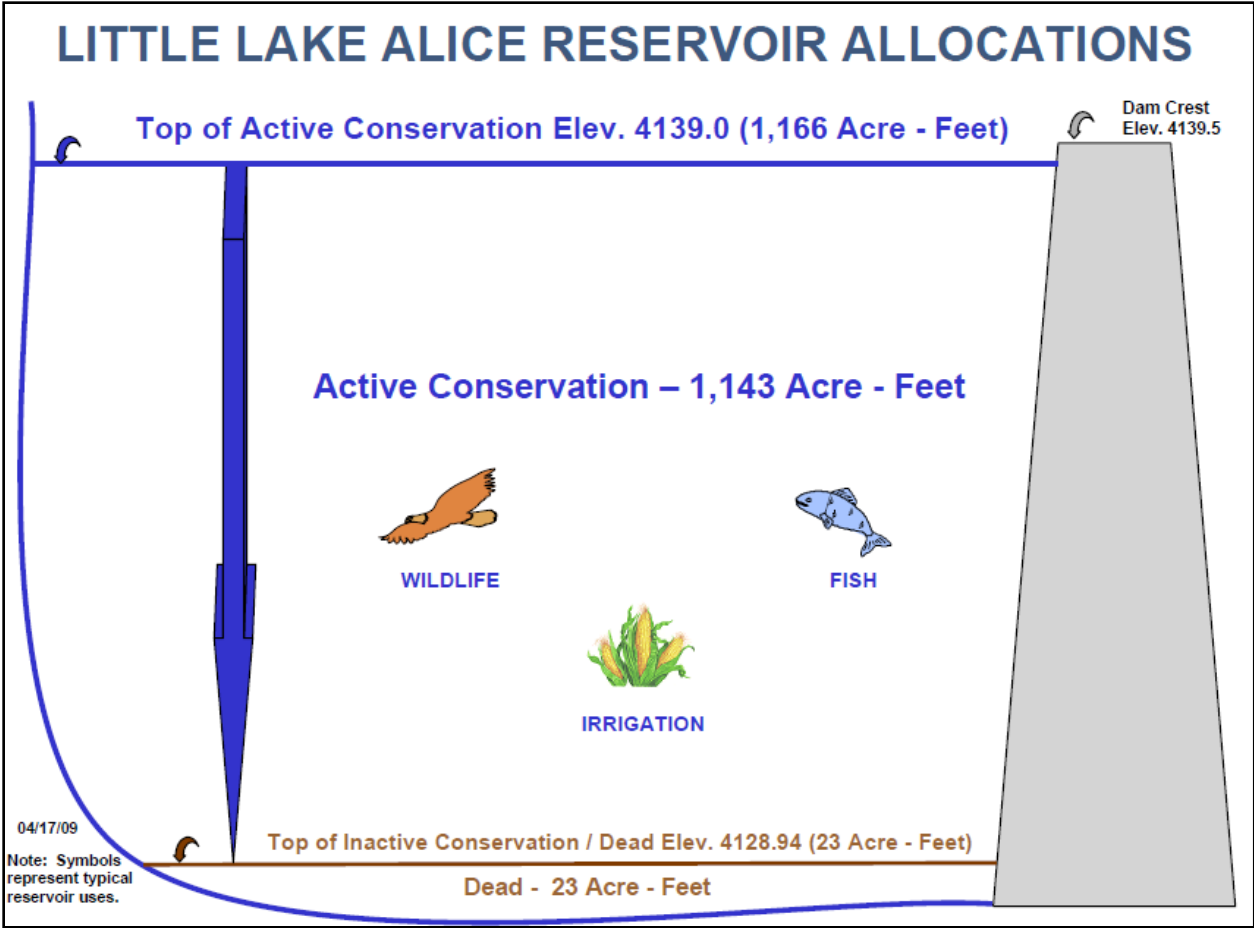


Figure 29: Little Lake Alice Reservoir Allocation

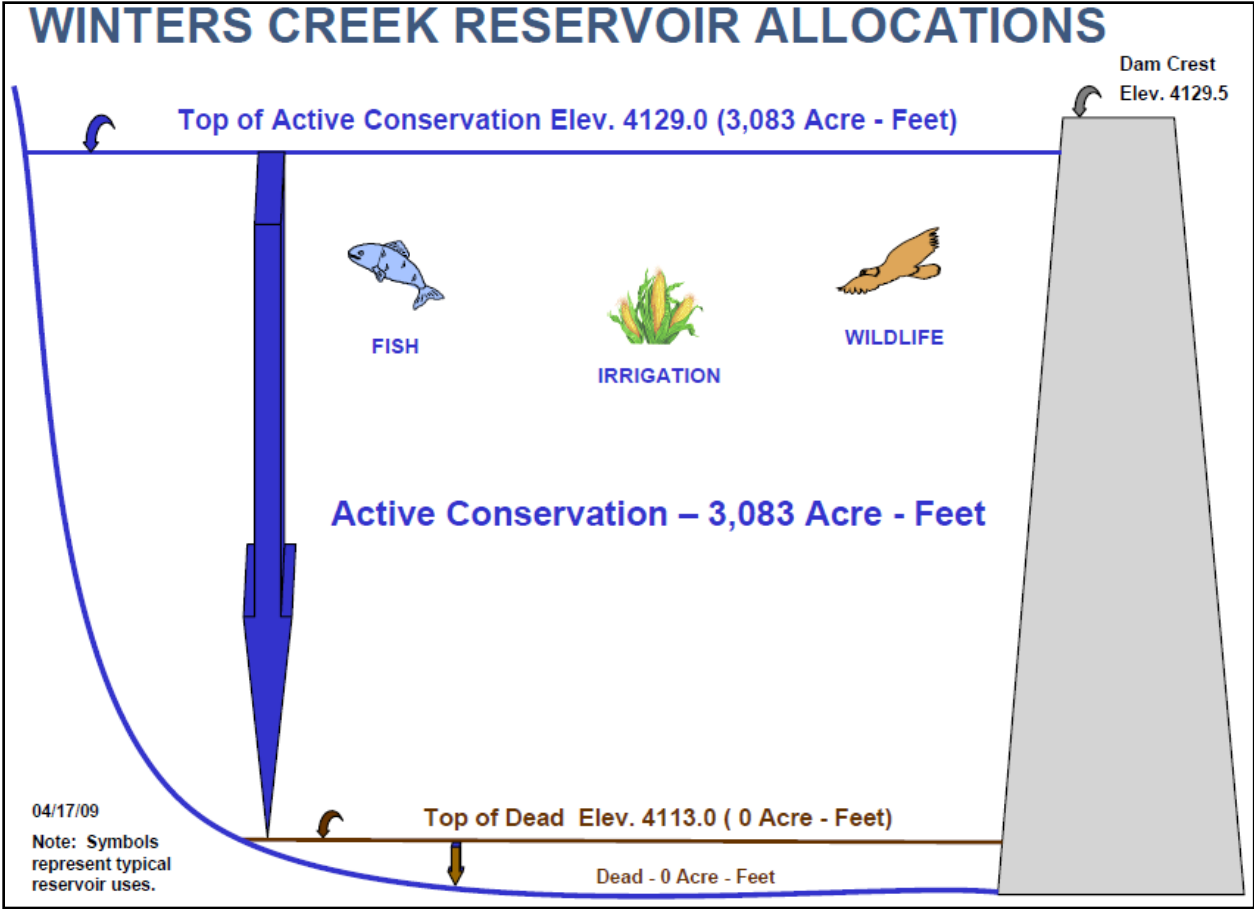


Figure 30: Winters Creek Reservoir Allocation

# LAKE MINATARE RESERVOIR ALLOCATIONS

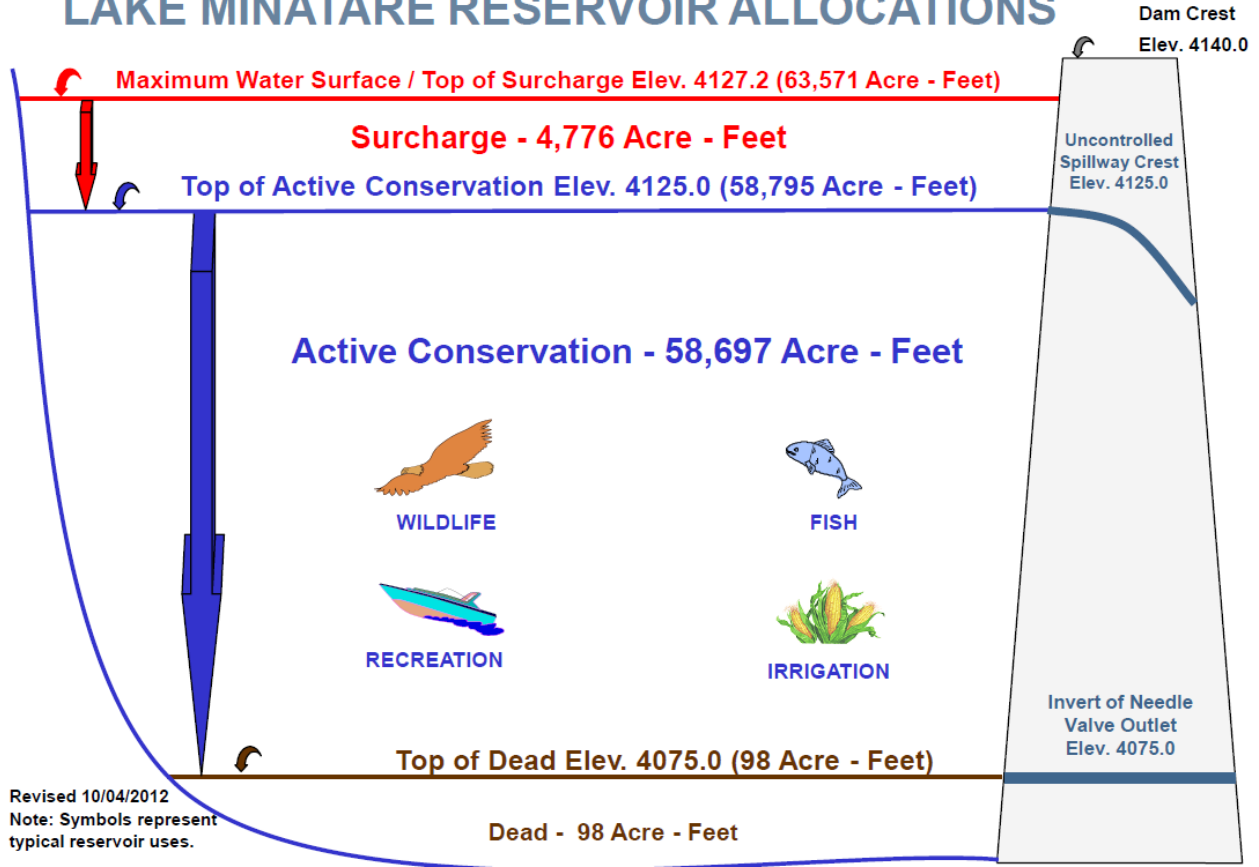


Figure 31: Lake Minatare Reservoir Allocation

# Appendix E: Basin Map

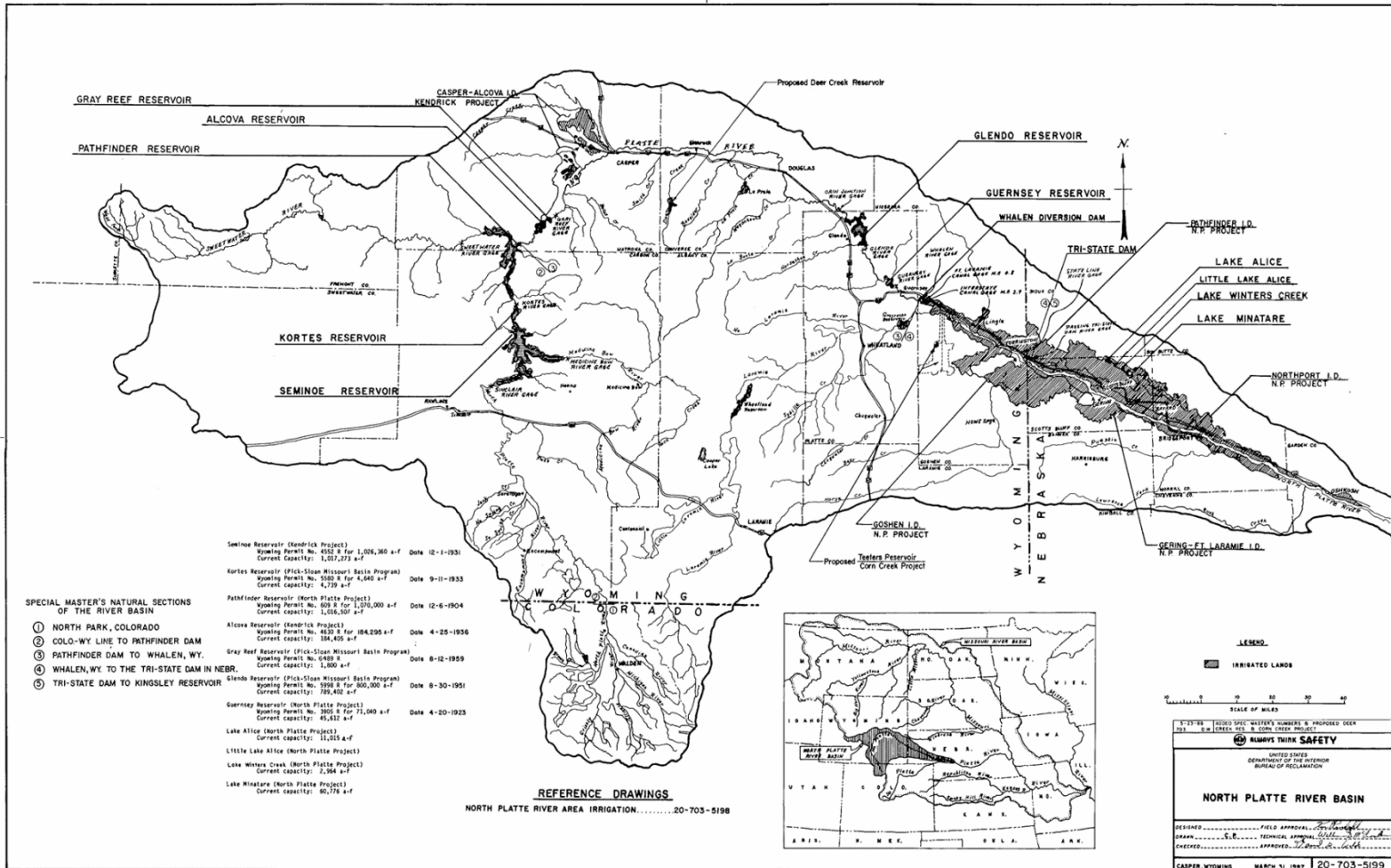


Figure 32: North Platte River Basin Map