

# RECLAMATION

*Managing Water in the West*

## Annual Operating Plans

North Platte River Area

**Water Year 2015**

*Summary of Actual Operations*

*and*

**Water Year 2016**

*Annual Operating Plans*



U.S. Department of Interior  
Bureau of Reclamation  
Great Plains Region  
Wyoming Area Office

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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 1985-2014, except for water year (WY) 2016 information which uses the years 1986-2015. 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 (WYAO) 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 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 2015. 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 in an irregular pattern 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 reregulating reservoir immediately downstream of Alcova Dam.

Major rivers which affect the water supply in the System are the North Platte River in Colorado and the Medicine Bow, and Sweetwater Rivers in Wyoming.

The System has seven main stem reservoirs, six of which have powerplants with generating capacities totaling 243,200 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)
Seminoe (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>	

<sup>1</sup> Storage capacity below elevation of lowest outlet

<sup>2</sup> Total storage minus dead storage

<sup>3</sup> 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)

<sup>4</sup> Minimum water surface elevation and capacity required for power generation this level is the top of inactive capacity

<sup>5</sup> 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.

<sup>6</sup> Top of dead capacity – spillway crest

<sup>7</sup> Minimum water surface elevation for power generation

<sup>8</sup> Elevation of the North Spillway Crest

## SYSTEM PLANNING AND CONTROL

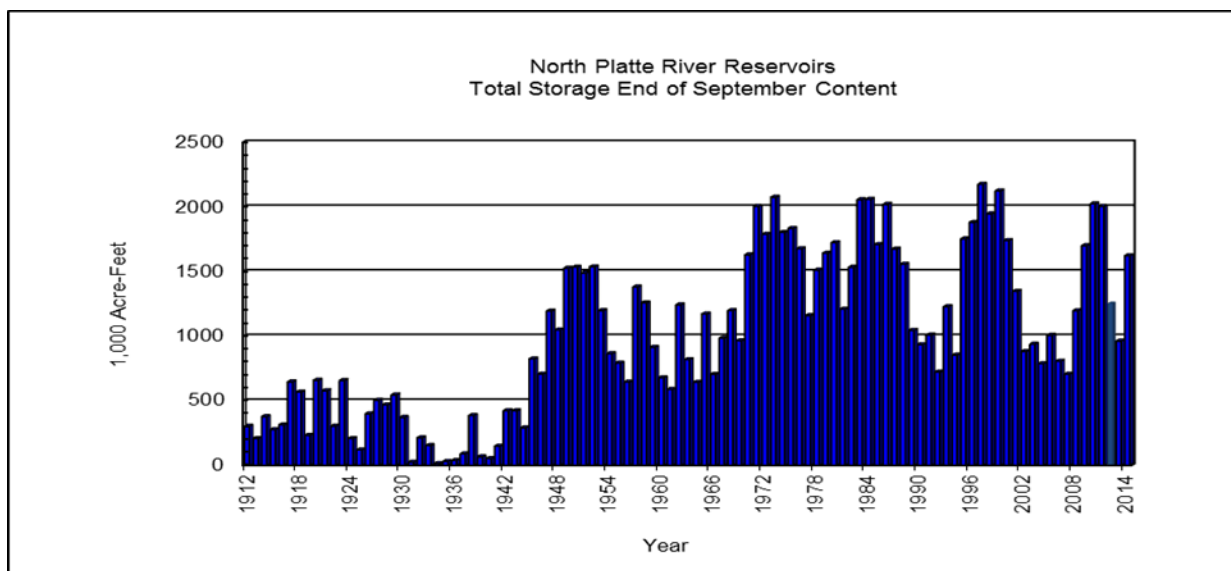
The North Platte River storage, power generation, and water delivery facilities are operated for irrigation, hydroelectric power production, municipal, and industrial water supply. The facilities provide year round flows in the river below each North Platte Dam except for Guernsey Dam. The

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 WYAO in Mills, Wyoming. WYAO 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 2015. Table 2 depicts A Summary of Reservoir Storage Content for WY 2015 (end of month). Table 9 depicts the Actual Reservoir Operations for WY 2015.



**Figure 1** North Platte River Reservoirs Total Storage End of September Content (1912-2015)

**Table 2** Summary of Reservoir Storage Content for Water Year 2015 (End of Month)

Seminole Reservoir			Pathfinder Reservoir			Alcova Reservoir <sup>3</sup>		
Month	Storage	Record <sup>1</sup>	Month	Storage	Record <sup>1</sup>	Month	Storage	Record <sup>1</sup>
October	700,213		October	668,055		October	157,509	
November	702,016		November	669,024		November	157,034	
December	706,389		December	680,904		December	157,012	
January	708,356		January	688,156		January	156,718	
February	713,520		February	697,292		February	157,238	
March	743,757		March	686,992		March	158,371	
April	713,977		April	657,477		April	180,059	
May	805,325		May	724,451		May	180,181	
June	896,061		June	873,022		June	179,937	
July	894,042		July	842,797		July	179,937	
August	850,527		August	784,451		August	180,254	
September	809,045		September	758,882		September	180,156	
Glendo Reservoir			Guernsey Reservoir			Total System <sup>2</sup>		
Month	Storage	Record <sup>1</sup>	Month	Storage	Record <sup>1</sup>	Month	Storage	Record <sup>1</sup>
October	121,663		October	14,413		October	1,667,963	
November	155,168		November	16,972		November	1,706,264	
December	188,639		December	19,705		December	1,758,731	
January	226,832		January	22,378		January	1,808,384	
February	259,465		February	24,654		February	1,858,386	
March	315,183		March	27,223		March	1,937,898	
April	417,836		April	29,574		April	2,005,405	
May	542,314		May	31,302		May	2,289,622	
June	497,825		June	33,051		June	2,485,675	
July	388,475		July	1,616		July	2,312,754	
August	195,664		August	28,004		August	2,044,932	
September	133,646		September	5,222		September	1,893,057	

<sup>1</sup> Record is the 30 year period from 1986-2015

<sup>2</sup> Total North Platte system includes storage in Seminole, Kortess, Pathfinder, Alcova, Gray Reef, Glendo and Guernsey Reservoirs

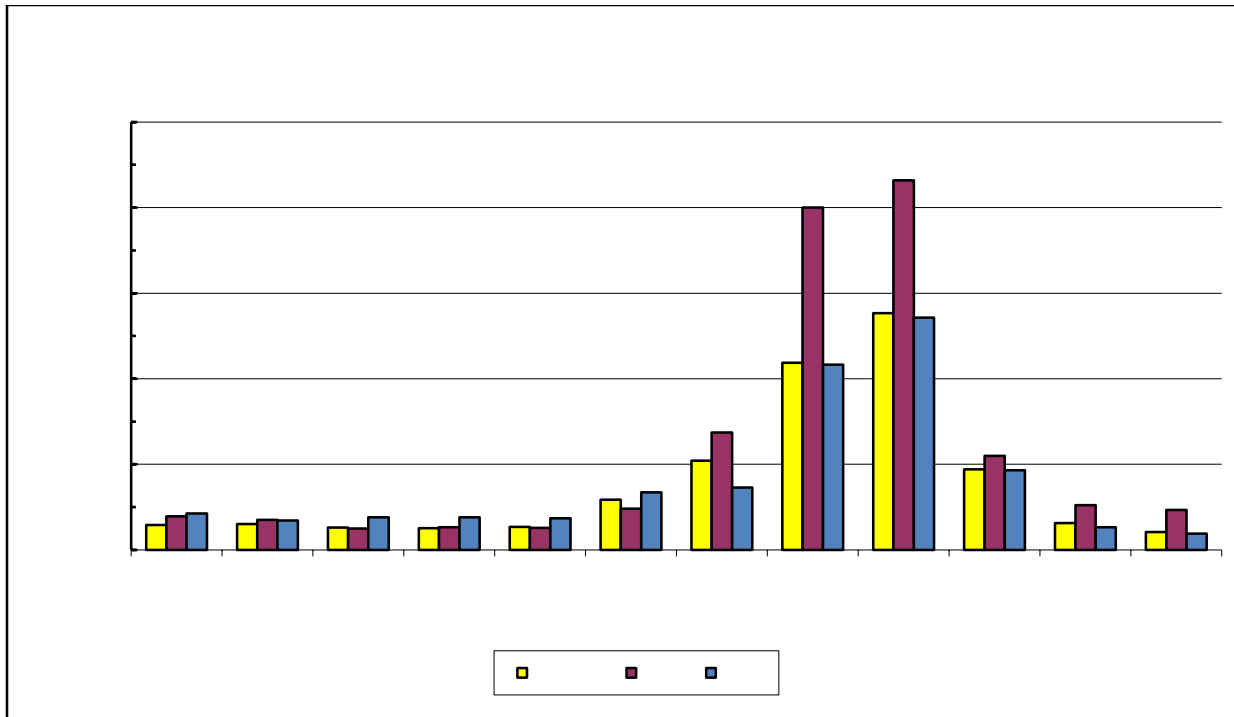
<sup>3</sup> Alcova Reservoir is normally maintained within either a winter operating range (between contents of 153,802 AF to 158,302 AF) or a summer operating range (between contents 177,070 AF to 181,943 AF)

## SYSTEM OPERATIONS WATER YEAR 2015

### Seminole Reservoir Inflow

Seminole Reservoir inflows were above the 30 year average for the year. A total of 956,500 acre-feet (AF) or 101 percent of the 30 year average entered the system above Seminole Reservoir during the WY 2015. The monthly inflows ranged from a high of 150 percent of average in January 2015 to a low of 70 percent in April 2015. The actual April-July 2015 inflow totaled 653,900 AF, which was 94 percent of the 30 year average of 693,700 AF. The Seminole computed inflow peaked for WY 2015 on June 13, 2015 at 6,911 cubic feet per second (cfs) compared to 13,950 cfs on May 30, 2015. Figure 2 depicts a comparison of average, WY 2014 and WY 2015 monthly inflows.





**Figure 2** Seminoe Reservoir Inflow

### **Seminoe Reservoir Storage and Releases**

Seminoe 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 51 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 2015, Seminoe Reservoir had a storage content of 694,226 AF, which was 117 percent of average and 68 percent of capacity. The maximum Seminoe Reservoir content was reached on July 15, 2015 at 907,883 AF. At the end of WY 2015, Seminoe Reservoir storage content was 809,045 AF, which was 137 percent of average and 80 percent of capacity. See Figure 3 for a comparison of average, WY 2014 and WY 2015 monthly storage.

Releases from Seminoe Dam averaged approximately 530 cfs from October 2014 through March 2015. The release was increased to approximately 1500 cfs in early April 2015; to a maximum of 3,534 cfs on June 9, 2015. The release was decreased to approximately 1,000 cfs at the beginning of August 2015 and remained so throughout the month. In early September 2015 the release was decreased to approximately 800 cfs and remained so throughout the month.



Table 3 depicts a summary of Seminole Reservoir information for WY 2015.

**Table 3** Seminole Reservoir Hydrologic Data for Water Year 2015

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		

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of water year	6,338.58	694,226	Oct 1, 2014 <sup>2</sup>
End of water year	6,345.80	809,045	Sep 30, 2015
Annual Low	6338.58	694,226	Oct 1, 2014
Historic Low <sup>1</sup>	6,253.30	56,390	Apr 20, 1961
Annual High	6,351.37	907,883	Jul 15, 2015
Historic High <sup>1</sup>	6,359.29	1,073,050	Jun 20, 1949

<sup>1</sup> The daily records for this table are only available from water year 1946.

<sup>2</sup> Represents 0001 hours on October 1

Inflow-Outflow Data	Inflow <sup>3</sup>	Date	Outflow	Date
Annual Total (AF)	956,354	Oct' 14 – Sep' 15	788,110	Oct' 14 – Sep' 15
Daily Peak (CFS)	6,911	Jun 13, 2015	3,534 <sup>4</sup>	Jun 9, 2015
Daily Minimum (CFS)	6	Sep 6, 2015	480 <sup>4</sup>	Oct 30, 2014

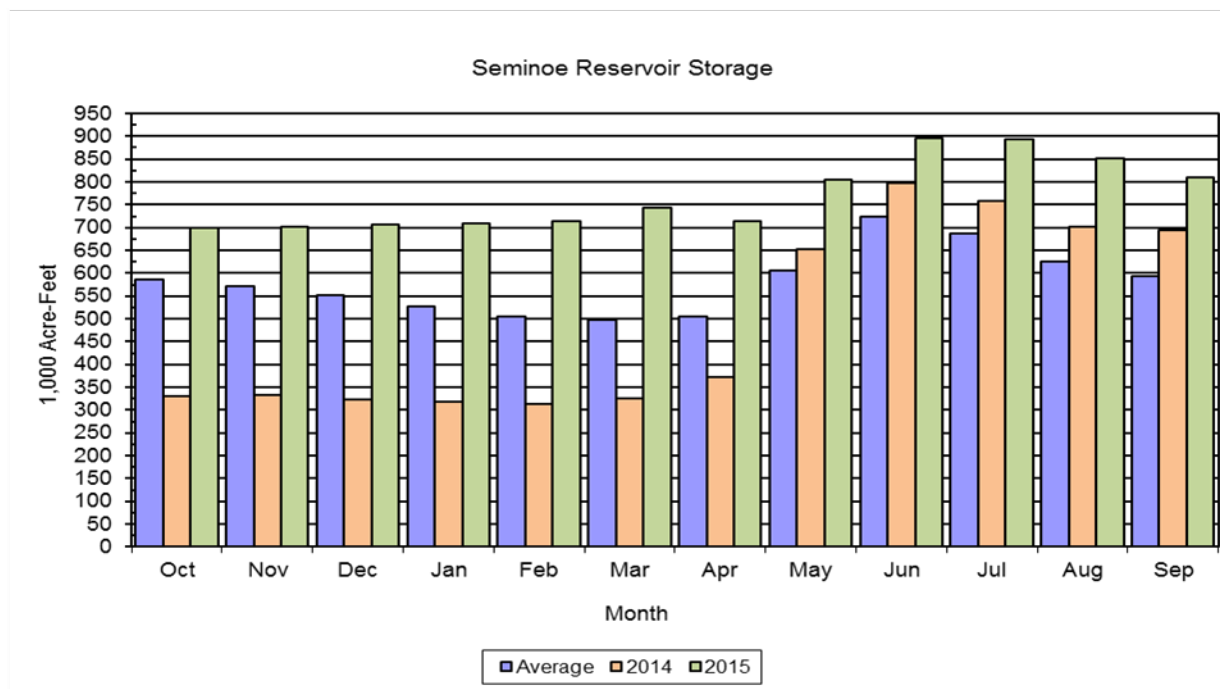
<sup>3</sup> Inflows are a computed number.

<sup>4</sup> Daily peak and minimum are releases to the river.

Month	Inflow		Outflow		Content <sup>6</sup>	
	KAF	% of Avg. <sup>5</sup>	KAF	% of Avg. <sup>5</sup>	KAF	% of Avg. <sup>5</sup>
October	42.4	145	33.1	81	700.2	119
November	34.4	114	32.0	75	702.0	123
December	38.1	146	33.1	71	706.4	128
January	37.9	150	33.1	69	708.4	134
February	37.1	138	30.0	61	713.5	141
March	67.4	115	33.7	52	743.8	150
April	72.9	70	97.9	105	714.0	141
May	216.6	99	121.1	107	805.3	133
June	271.4	98	172.3	114	896.1	124
July	93.0	99	85.9	69	894.0	130
August	26.3	83	61.8	73	850.5	136
September	19.0	92	54.0	108	809.0	137
Annual	956.5	101	788.0	87		

<sup>5</sup> The 30 year average is the period (1985-2014)

<sup>6</sup> End of month



**Figure 3** Seminole Reservoir Storage

### **Kortes Reservoir Storage and Releases**

Completed in 1951, Kortes Dam, Reservoir, and Powerplant of the Kortes Unit PS-MBP 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 an elevation of 6,142.0 feet which is 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 2,900 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.

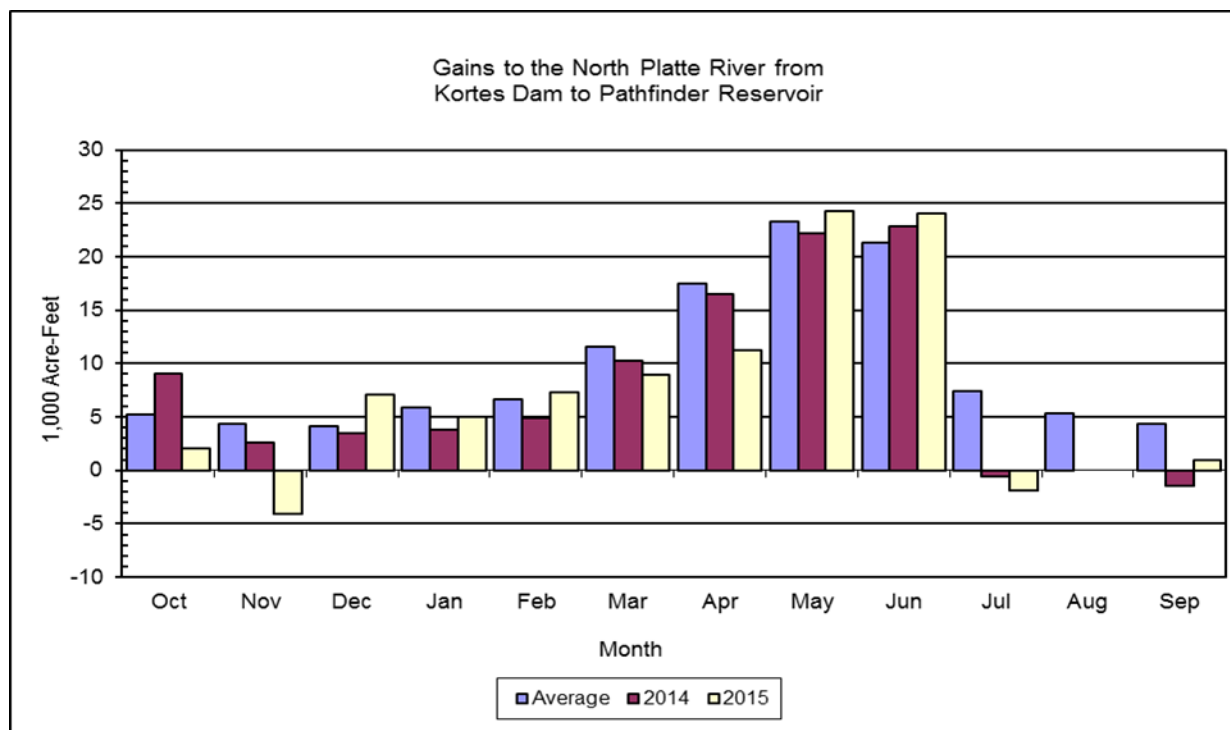
Senate Bill 2553 which was passed in the Ninetieth Congress authorized the modification of the operation of Kortes Dam and Powerplant to provide a minimum streamflow of 500 cfs in the North Platte River between Kortes Reservoir and the normal headwaters of Pathfinder Reservoir. The minimum flow permits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

Kortes releases averaged approximately 530 cfs from October 2014 through March 2015. In April 2015 the release was increased to approximately 1,500 cfs and increased again on April 14, 2015 to 1,800 cfs. The release was increased near the end of May 2015 to approximately 2,500 cfs and again in early June 2015 to 3,500 cfs. The Kortes release peaked at 3,534 cfs on June 9, 2015. Releases were decreased to approximately 1,500 cfs by the end of June 2015 and decreased to

approximately 1,200 cfs on July 21, 2015 which continued to the end of the month. Kortes releases were decreased to approximately 1,000 cfs on August 1, 2015 and maintained throughout the month. Early September 2015 the releases were decreased to approximately 870 cfs and maintained to the end of the month. In WY 2015 most releases were made through the Kortes Powerplant.

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

Kortes Dam to Pathfinder Dam river gains were below average for eight months of WY 2015. The Kortes Dam to Pathfinder Dam river gains ranged from 173 percent of average in December 2014 to 23 percent in September 2015. Gains in November 2014 and July 2015 were negative, making a comparison to average meaningless. The April - July 2015 river gains were 57,700 AF, which is 83 percent of the 30 year average of 69,400 AF. Figure 4 depicts a comparison of average, WY 2014 and WY 2015 monthly river gains.



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

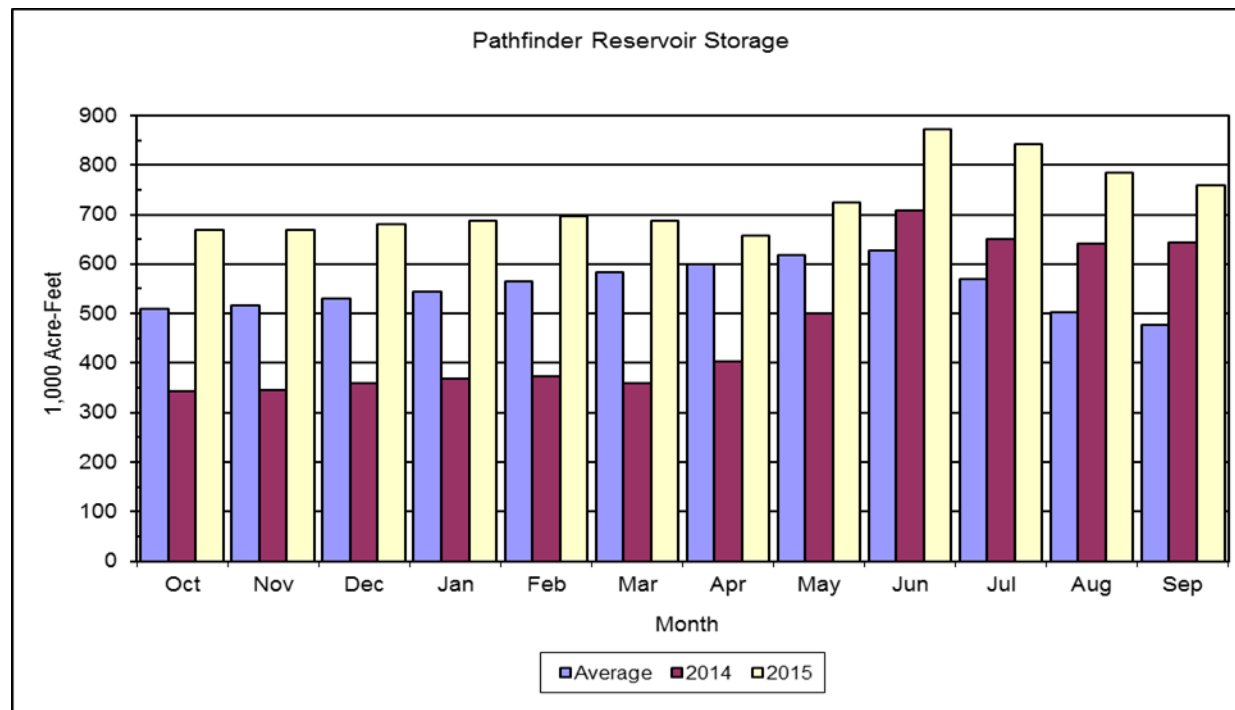
### Pathfinder Reservoir Storage and Releases

Pathfinder Dam and Reservoir, a major storage facility of the North Platte Project, has a total capacity of 1,070,000 AF at an elevation of 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 an elevation of 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 an elevation of 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 a reservoir elevation of 5,858.10 feet.

At the start of WY 2015, storage in Pathfinder Reservoir was 643,905 AF, which was 135 percent of average and 60 percent of capacity. Pathfinder storage was above the 30 year average for WY 2015. The maximum Pathfinder Reservoir content for the water year peaked on July 7, 2015, at 874,812 AF which is 82 percent of capacity. WY 2015 ended with 758,882 AF of water in storage in Pathfinder Reservoir, which was 159 percent of average and 71 percent of capacity. A continual release of water from Pathfinder Reservoir during October 2014 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 valves is needed to supplement Fremont Canyon releases to make required irrigation deliveries. The river below Pathfinder Dam reached a maximum flow of 494 cfs on November 13, 2014. Table 4 depicts a summary of Pathfinder Reservoir information for WY 2015.



**Figure 5** Pathfinder Reservoir Storage

**Table 4** Pathfinder Reservoir Hydrologic Data for Water Year 2015

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		

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of water year	5,830.35	643,905	Oct 1, 2014 <sup>3</sup>
End of water year	5,837.21	758,882	Sept 30, 2015
Annual Low	5,830.40	644,687	Oct 1, 2014
Historic Low <sup>2, 3</sup>	5,690.00	0	Sep 9, 1958
Annual High	5,843.34	874,812	Jul 7, 2015
Historic High <sup>1</sup>	5,853.11	1,083,755	Jul 7, 1983

<sup>1</sup> Daily records for this table are only available from water year 1946

<sup>2</sup> From September 1958 through January 1959, Pathfinder Reservoir was drained for construction of Fremont Canyon tunnel.

<sup>3</sup> Represents 0001 hours on October 1.

Inflow-Outflow Data	Inflow	Date	Outflow	Date
Annual Total (AF)	872,655	Oct, 2014 – Sep, 2015	693,673	Oct, 2014 – Sep, 2015
Daily Peak (CFS)	4,915	Jun 11, 2015	2,795	Apr 26, 2015
Daily Minimum (CFS)	60	Nov 29, 2014	8	Oct 2, 2014
Peak Jet Flow Valve (CFS)			494	Nov 13, 2014
Total Jet Flow Valve (AF)			86,831	Oct, 2014 – Sep, 2015

<sup>4</sup> 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. Additional releases were made in WY 2015 that resulted in a peak flow of 494 cfs.

Month	Gain from Kortes		Inflow <sup>6</sup>		Outflow		Content <sup>8</sup>	
	KAF	% of Avg. <sup>5</sup>	KAF	% of Avg. <sup>5</sup>	KAF	% of Avg. <sup>5</sup>	KAF	% of Avg. <sup>5</sup>
October	2.0	38	35.1	76	6.6	33	668.1	131
November	-4.1	NA <sup>7</sup>	27.9	60	26.3	69	669.0	130
December	7.1	173	40.2	79	27.7	76	680.9	129
January	5.0	85	38.1	71	27.8	76	688.2	126
February	7.3	111	37.3	67	26.1	77	697.3	123
March	8.9	77	42.6	56	49.2	89	687.0	118
April	11.2	64	108.9	99	133.1	144	657.5	110
May	24.3	104	145.4	107	74.2	66	724.5	117
June	24.1	113	196.6	114	38.3	24	873.0	139
July	-1.9	NA <sup>7</sup>	83.9	64	102.8	57	842.8	148
August	0.0	NA <sup>7</sup>	61.9	69	109.7	73	784.5	156
September	1.0	23	54.8	101	72.0	96	758.9	159
Annual	84.9	73	872.7	85	693.8	70		

<sup>5</sup> 30 year average is the period (1985-2014)

<sup>6</sup> The inflow includes the gain from Kortes Dam to Pathfinder Dam.

<sup>7</sup> Represents a negative number that makes the percentage meaningless.

<sup>8</sup> 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 an elevation of 5500 feet, of which only the top 30,600 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 operated within a two foot range during summer and winter but at levels 10 feet apart. 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 September 30, 2014 and continued through October 29, 2014 when the reservoir reached its normal winter operating range of 5,488 feet plus or minus one foot. The refill of Alcova Reservoir was initiated on March 31, 2015. The water surface elevation was raised to 5,498 feet on April 29, 2015, and the reservoir was maintained within one foot of an elevation of 5,498 feet throughout the summer.

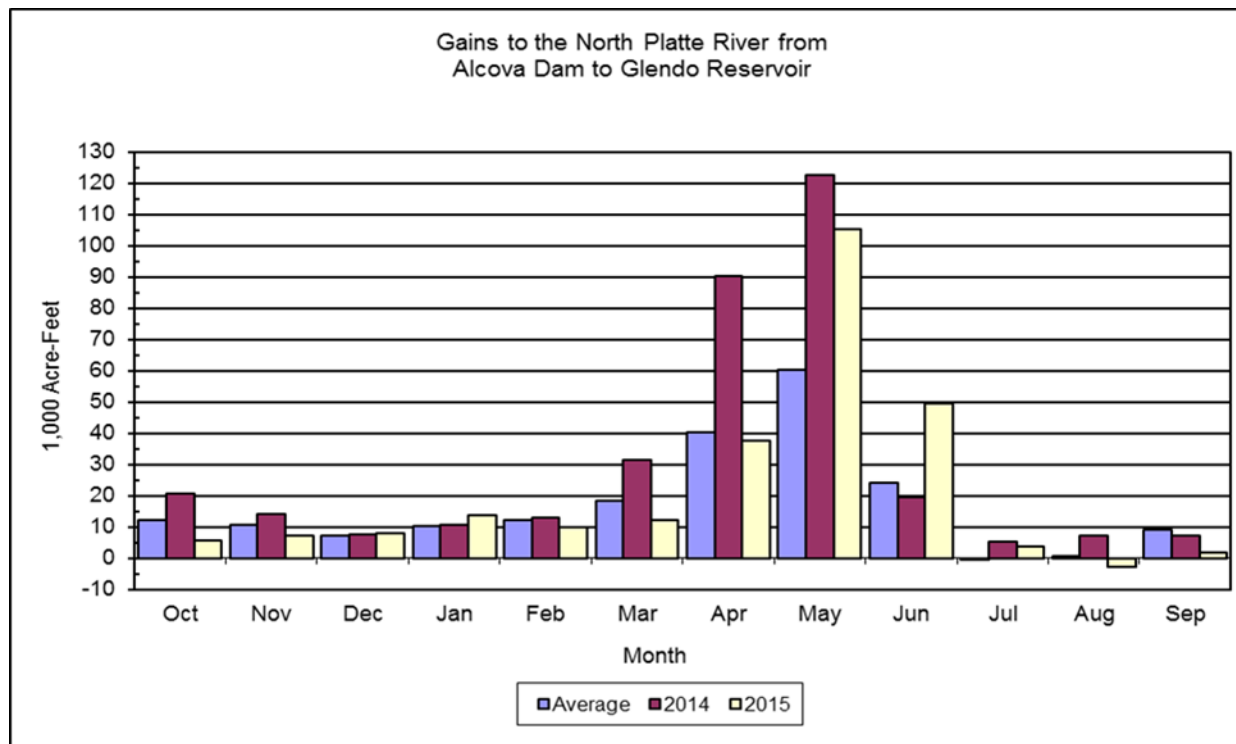
Gray Reef Dam and Reservoir is part of the Glendo Unit, Oregon Trail Division, PS-MBP. The dam which was completed in 1961 is a three-zoned rock and earthfill structure located about 2.5 miles below Alcova Dam. The reservoir has an active capacity of 1,744 AF. Gray Reef Reservoir is operated to reregulate 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, 2014 through October 8, 2014. On October 9, 2014 the Gray Reef release was dropped to 450 cfs to slow the rise of Glendo Reservoir for work being done on the toe drains and the dikes. At the request of the Wyoming Game and Fish Department, a series of flushing flows were initiated on March 16, 2015. The flushing flow was abandoned on March 17, 2015 due to technical difficulties. The flushing flow was continued on March 18, 2015 and continued through March 26, 2015 during which the flows were varied each day from 500 cfs to 4,000 cfs, for the purpose of flushing silt from spawning gravels used by trout. At the completion of the flushing flows, releases from Gray Reef were returned to 500 cfs until April 2, 2015. Releases for the remainder of WY 2015 were adjusted to meet irrigation demands below Guernsey Reservoir. The largest daily release of water for WY 2015 occurred on May 2, 2015, at 2,406 cfs.

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

River gains from Alcova Dam to Glendo Reservoir were above average for December 2014, January, May, June and July 2015 and below average for the other months of WY 2015. The Alcova Dam to Glendo Reservoir river gains ranged from a high of 208 percent in June 2015 to a low of 21 percent in September 2015. The 30-year average gain in July is negative, making a

comparison to the July 2015 gain meaningless. The actual April - July 2015 gain was 195,944 AF, which was 158 percent of average. The maximum computed daily river gain of 3,647 cfs occurred on May 25, 2015 and the daily computed Glendo Reservoir inflow peaked on May 25, 2015 at 3,988 cfs. Figure 6 depicts a comparison of average, WY 2014 and WY 2015 monthly river gains.



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

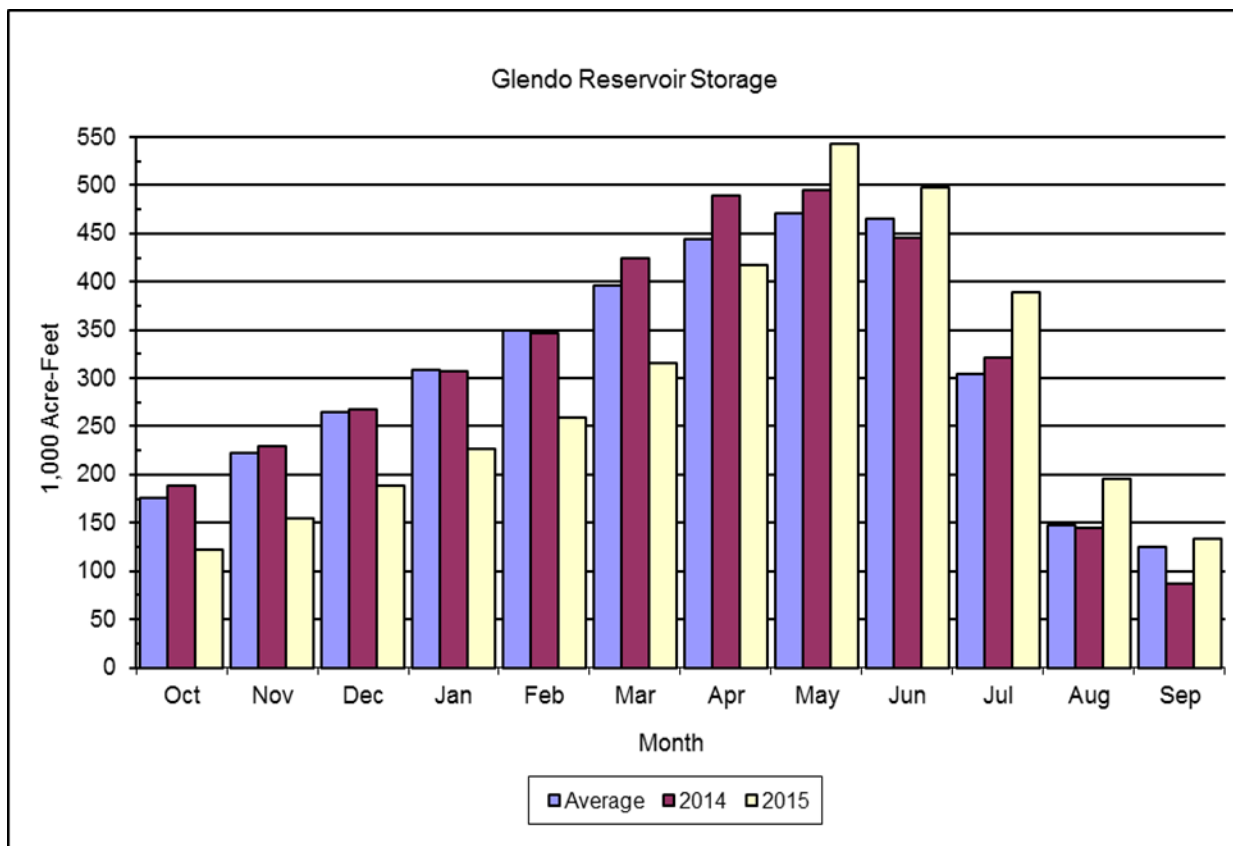
### Glendo Reservoir Storage and Releases

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 an elevation of 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 an elevation of 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 and results in associated fish and wildlife benefits.



Glendo Reservoir storage was 87,056 AF at the beginning of WY 2015, which was 50 percent of average and 18 percent of the active conservation of 492,022 AF. Water releases from Glendo Reservoir were initiated on April 9, 2015, in order to move water to the Inland Lakes. The reservoir reached a maximum storage for the year of 555,198 AF, an elevation of 4,639.91 feet on June 4, 2015. At the end of WY 2015, Glendo Reservoir contained 133,646 AF of water (water surface elevation of 4,591.49 feet) which was 107 percent of average and 26 percent of top of active conservation. Figure 7 depicts WY 2014 and WY 2015 end of month reservoir storage compared to average. Table 5 depicts a summary of Glendo Reservoir information for WY 2015.



**Figure 7** Glendo Reservoir Storage

**Table 5** Glendo Reservoir Hydrologic Data for Water Year 2014

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)	4,675.00		

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of water year	4,580.78	87,056	Oct 1, 2014 <sup>1</sup>
End of water year	4,591.49	133,646	Sep 30, 2015
Annual Low	4,580.98	87,822	Oct 1, 2014
Historic Low	4,548.10	15,140	Sep 28, 1966
Annual High	4,639.91	555,198	June 4, 2015
Historic High	4,650.94	758,830	May 28, 1973

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

Inflow-Outflow Data	Inflow	Date	Outflow <sup>2</sup>	Date
Annual Total (AF)	899,454	Oct, 2014 – Sep, 2015	825,366	Oct, 2014 – Sep, 2015
Daily Peak (CFS)	3,988		7,998	Aug 4, 2015
Daily Minimum (CFS)	125	May 25, 2015	12 <sup>3</sup>	Oct 5, 2014
Peak Bypass Release (CFS)		Dec 31, 2014	4,529	Aug 4, 2015
Total Bypass Release (AF)			52,445 <sup>3</sup>	Oct, 2014 – Sep, 2015

<sup>2</sup> Includes the average daily release of approximately 25 cfs from the low flow outlet works for Apr-Sep.

<sup>3</sup> A low flow outlet works was completed in 1993 to allow for a release of 25 cfs.

Month	Gain from Alcova		Inflow <sup>7</sup>		Outflow		Content <sup>8</sup>	
	KAF	% of Avg. <sup>5</sup>	KAF	% of Avg. <sup>5</sup>	KAF	% of Avg. <sup>5</sup>	KAF	% of Avg. <sup>5</sup>
October	5.6	47	38.1	66	2.5	125 <sup>6</sup>	121.7	69
November	7.3	68	35.5	71	1.6	107 <sup>6</sup>	155.2	70
December	7.8	107	35.4	80	1.7	100 <sup>6</sup>	188.6	71
January	13.5	134	40.2	87	1.7	100 <sup>6</sup>	226.8	73
February	9.8	81	34.9	79	1.5	71 <sup>6</sup>	259.5	74
March	12.2	67	59.0	86	1.7	9 <sup>6</sup>	315.2	79
April	37.4	93	123.2	116	18.0	32	417.8	94
May	105.4	175	176.5	113	48.9	39	542.3	115
June	49.6	208	89.8	56	128.3	81	497.8	107
July	3.5	NA <sup>4</sup>	88.3	55	192.0	61	388.5	127
August	-3.0	NA <sup>4</sup>	105.7	78	194.4	68	195.7	132
September	1.9	21	73.0	93	133.0	133	133.6	107
Annual	251	123	899.6	81	725.3	68		

<sup>4</sup> Represents a negative number that makes the percentage meaningless.

<sup>5</sup> 30 year average is the period (1985-2014)

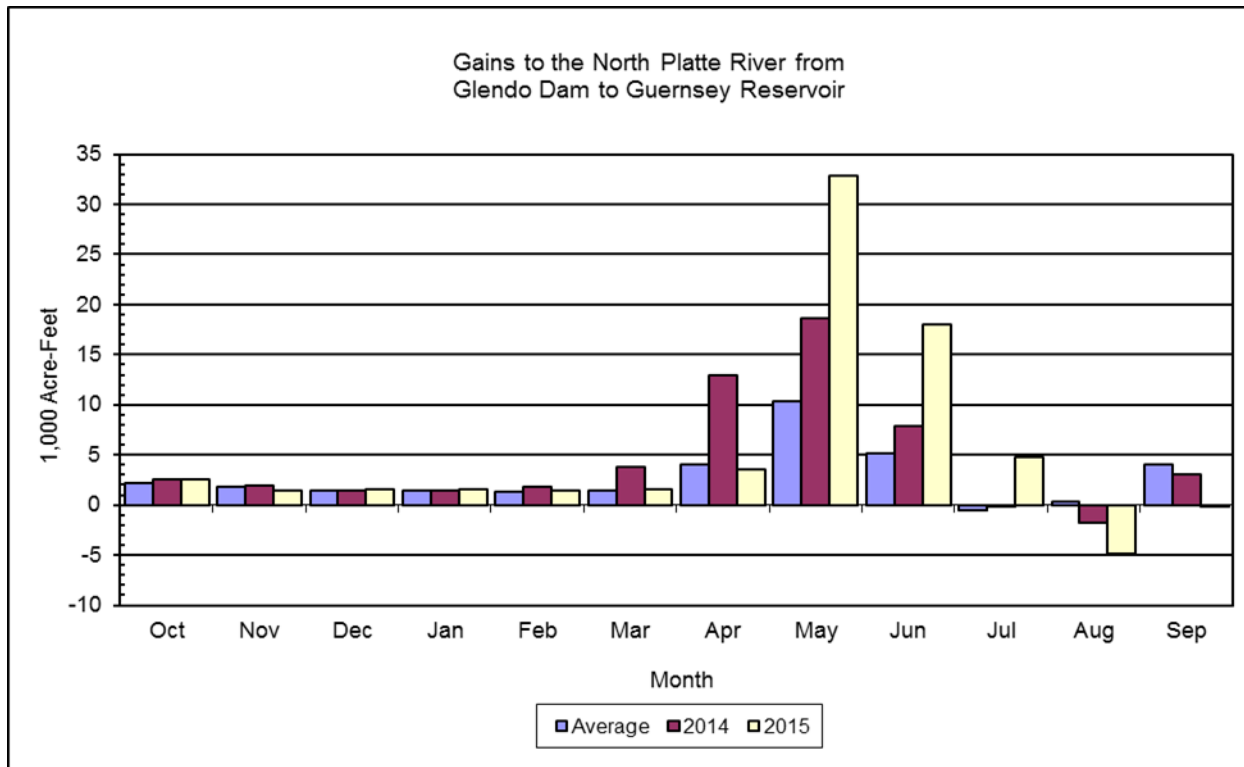
<sup>6</sup> 21 year average is the period (1994-2014) In 1993 a low flow valve was installed at Glendo Dam which allowed the release of 25 cfs during the non irrigation season. Therefore, a 21 year average is used for the months of October through March.

<sup>7</sup> Inflow include the gain from Alcova Dam to Glendo Dam.

<sup>8</sup> End of month

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

The river gains between Glendo Dam and Guernsey Dam during WY 2015 were below average during November 2014, and April, August and September 2015, and above average the rest of the year. The Glendo Dam to Guernsey Reservoir river gains ranged from a high of 310 percent of average in June 2015 to a low of 78 percent in November 2014. The months of July, August and September 2015 had negative values which made a percentage value meaningless. On August 3, 2015, the daily computed inflow to Guernsey Reservoir peaked at 8,555 cfs. Figure 8 depicts a comparison of average, WY 2014 and WY 2015 monthly river gains.



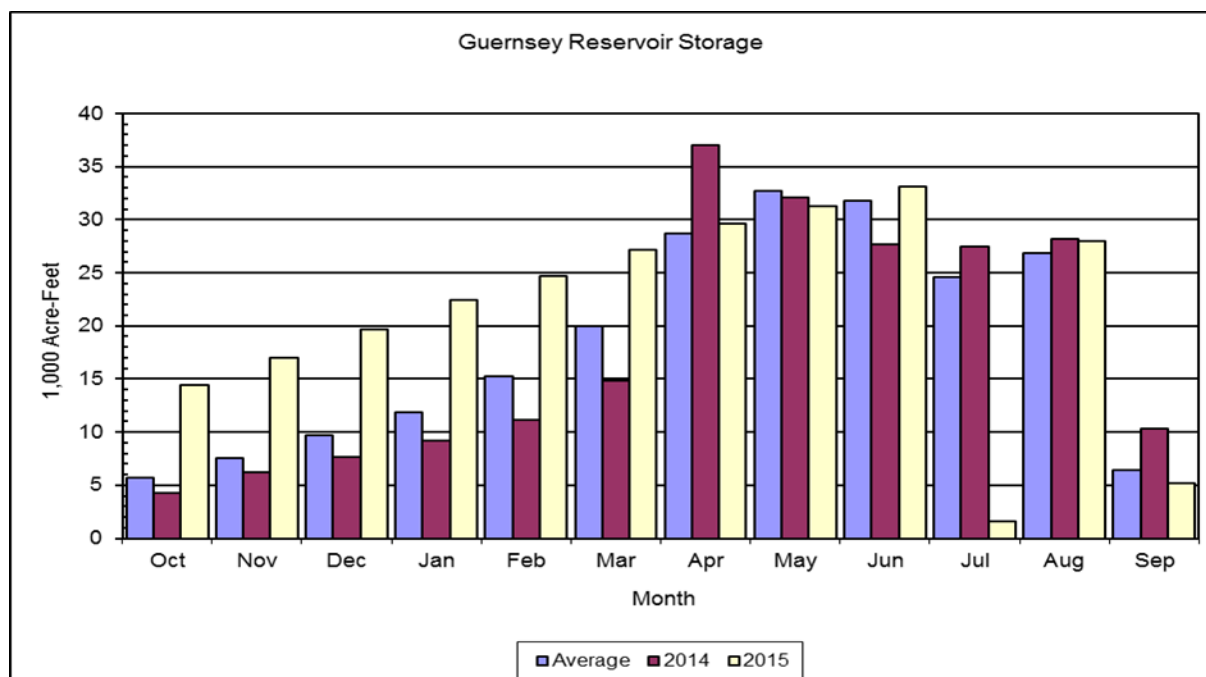
**Figure 8** Gains to the North Platte River from Glendo Dam to Guernsey Reservoir

### 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 45,600 AF of available storage.

At the beginning of WY 2015, storage in Guernsey Reservoir was at 10,291 AF. Releases from Guernsey Reservoir were started on April 20, 2015, as water was moved into the Inland Lakes. The annual silt run from the reservoir was initiated on July 19, 2015 and continued for 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 1,546 AF occurred on July 29, 2015. Following the silt run, the reservoir was refilled to approximately 28,000 AF. The reservoir reached a low storage of 1,546 AF on July 29, 2015 and peaked at 34,368 AF on June 19, 2015. See Figure 9 for WY 2014 and WY 2015 storage compared to average.

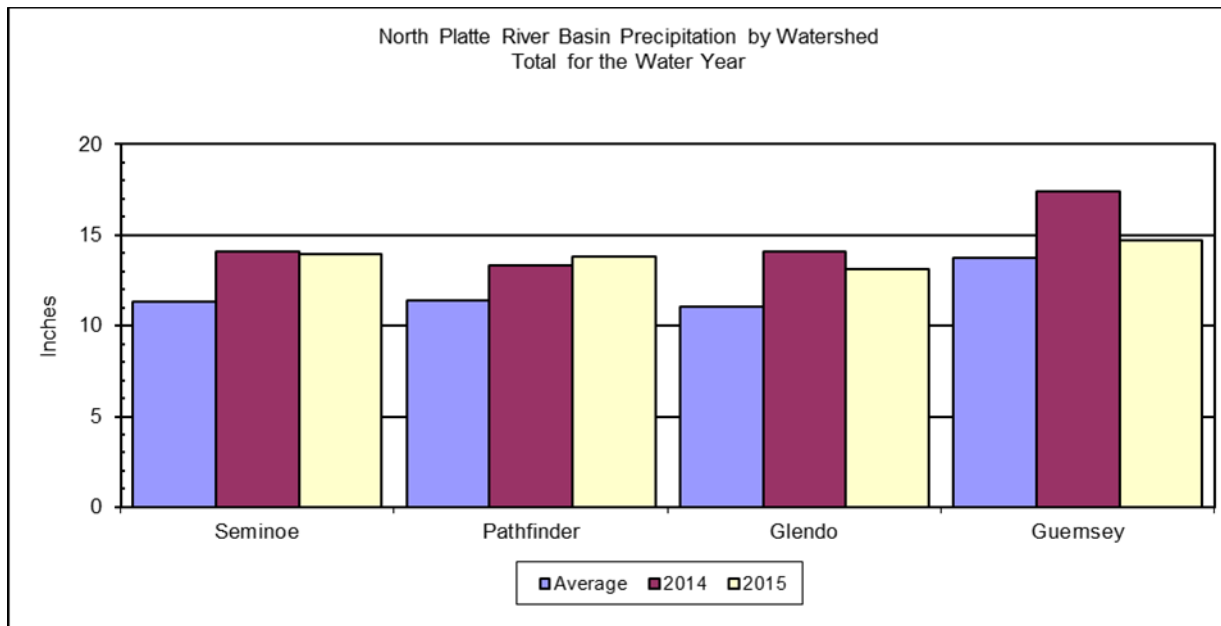


**Figure 9** Guernsey Reservoir Storage

### Precipitation Summary for Water Year 2015

The 2015 precipitation was above average for the entire North Platte River Basin. Six months of the year precipitation was above the 30 year average for Seminoe and Glendo Reservoirs, and five months for Pathfinder and Guernsey Reservoirs. The percent of average for WY 2015 ranged from 121 percent in the Pathfinder basin to 118 percent in the Glendo basin. Seminoe basin was at 123 percent of average and Guernsey basin was at 107 percent of average for WY 2015. Watershed precipitation in each basin is an average of the precipitation readings using several stations as indicators.

There was a significant amount of precipitation that fell in the Glendo and Guernsey watersheds in late April and early May 2015. The Glendo basin precipitation was 206 percent of average for April 2015 and 222 percent of average for May 2015. The Guernsey basin precipitation was 151 percent of average for April 2015 and 186 percent of average for May 2015. See Figure 10 for a comparison of average, WY 2014 and WY 2015 total precipitation.



**Figure 10** North Platte River Basin Precipitation by Watershed Total for Water Year 2015

### Snow Pack Summary for Water Year 2015

Reclamation relies on the Natural Resources Conservation Service (NRCS) to provide snow water equivalent (SWE) information for the three drainage areas in which Reclamation forecasts snowmelt runoff. From February 1, 2015 through April 1, 2015, the watershed percentage above Seminoe Reservoir snow pack SWE was consistent in the mid 70's. By May 1, 2015 the SWE, above Seminoe Reservoir, had dropped to 67 percent of median. In the Sweetwater River watershed, the SWE was 63 to 75 percent of median from February 1, 2015 through April 1, 2015. By May 1, 2015 the SWE in the Sweetwater River watershed was 63 percent of median. Snow in the Alcova Dam to Glendo Reservoir watershed began at 75 percent of median on February 1, 2015 but increased to 78 percent of median by March 1, 2015, and dropped to 61 percent of median by April 1, 2015. By May 1, 2015 the SWE had increased to 68 percent of median.

Table 6 shows a summary of snowpack for WY 2015.

**Table 6** North Platte Snowpack Water Content for 2015

Watershed	Feb 1		Mar 1		Apr 1		May 1	
	SWE <sup>1</sup>	% of Median <sup>2</sup>	SWE <sup>1</sup>	% of Median <sup>2</sup>	SWE <sup>1</sup>	% of Median <sup>2</sup>	SWE <sup>1</sup>	% of Median <sup>2</sup>
Seminoe Reservoir	10.9	75	14.4	76	17.5	74	16.9	67
Pathfinder Reservoir	6.4	69	8.4	75	9.3	63	10.1	63
Glendo Reservoir	4.6	75	6.6	78	6.7	61	6.2	68

<sup>1</sup> SWE (Snow Water Equivalent) is the amount of water in the snowpack expressed in inches).

<sup>2</sup> Median is based on the 1981-2010 period.

## Allocation for Water Year 2015

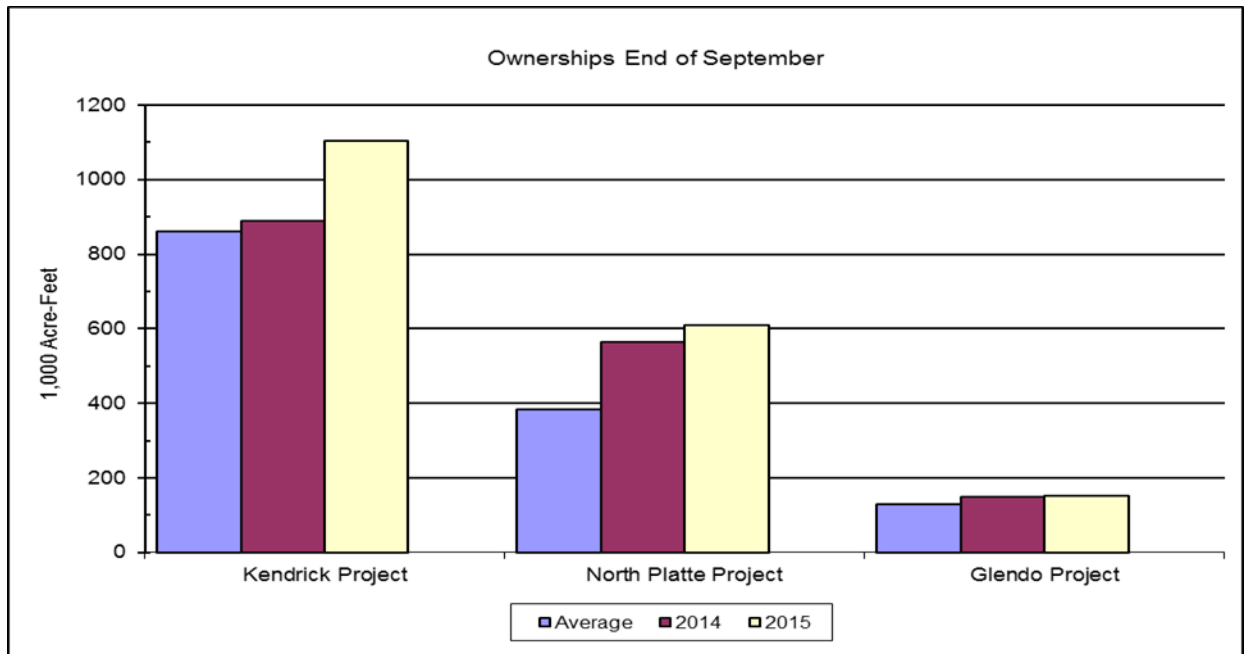
Due to the above average carryover entering the water year and timely spring precipitation, an allocation was not required for WY 2015.

## Ownerships for Water Year 2015

Stored water which is held in accounts for various entities is referred to as their ownership. At the beginning of WY 2015, the North Platte Project ownership, which includes North Platte Pathfinder and North Platte Guernsey, contained 564,936 AF of water, which is 147 percent of average. The Kendrick ownership contained 889,189 AF of water, which is 103 percent of average. The Glendo ownership contained 150,323 AF of water, which is 117 percent of average.

The total amount of water stored at the end of WY 2015 in the mainstem reservoirs for use in WY 2016 was 1,893,057 AF which was 136 percent of average.

At the end of WY 2015, the North Platte Project ownership, which includes North Platte Pathfinder and North Platte Guernsey, contained 610,265 AF of water which is 159 percent of average. The Glendo ownership contained 152,788 AF of water which is 119 percent of average. The Kendrick ownership contained 1,105,229 AF, which is 128 percent of average. The Operational/Re-regulation water account contained 17,134 AF. Also stored in the North Platte storage system was 5,652 AF for the city of Cheyenne, zero 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 2015.



**Figure 11** Ownership End of September

## North Platte River Forecast 2015

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 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 2015.

**Table 7** Summary of Forecasts of April-July Runoff for Water Year 2015

Forecast Points	Feb 1		Mar 1		Apr 1		May 1		Actual April-July KAF	% of Apr-Jul Avg. <sup>1</sup>
	KAF	% of Avg.	KAF	% of Avg.	KAF	% of Avg.	KAF	% of Avg.		
Seminoe Reservoir	450	65	400	58	250	36	250 <sup>2</sup>	36	653.9	94
Sweetwater River	35	67	35	67	20	38	20 <sup>3</sup>	38	40.9	78
Alcova to Glendo	80	65	80	65	40	32	50 <sup>4</sup>	40	195.9	158

<sup>1</sup> Average is based on the 1985-2014 period.

<sup>2</sup> The May 1 forecast includes an actual April inflow of 72,900 AF.

<sup>3</sup> The May 1 forecast includes an actual April inflow of 5,300 AF.

<sup>4</sup> The May 1 forecast includes an actual April inflow of 37,400 AF.



**Table 8** Summary of North Platte River System Ownership for Water Year 2015

Summary of North Platte River Systems Ownerships for Water Year 2015 (Acre-Feet)													
Months	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL													
<b>Pathfinder Ownership</b>													
Evaporation		-4,232	-627	-642	-3,149	-2,390	-3,911	-6,450	-5,655	-11,714	-12,701	-11,930	-7,980
Accural		47,635	31,188	44,539	41,120	44,031	75,144	60,075	184,830	0	0	0	0
Delivery		0	0	0	0	0	0	0	0	0	-70,788	-217,979	-128,360
A/ PP&L payback		0	0	0	0	0	0	0	806	780	675	0	0
Evaporation payback										3,014			
Re-Regulation transfer												0	0
Ownership total		608,339	638,900	682,797	720,768	762,409	833,642	887,267	1,067,248	1,059,328	976,514	746,605	610,265
Actual Ownership	564,936	608,339	638,900	682,797	720,768	762,409	833,642	887,267	1,067,248	1,059,328	976,514	746,605	610,265
<b>Kendrick Ownership</b>													
Evaporation		-4,102	-679	-682	-3,344	-2,199	-3,620	-5,436	-4,368	-9,923	-11,121	-10,033	-8,506
Accural		0	0	0	0	0	0	0	58,805	271,890	0	0	0
Delivery		0	0	0	0	0	0	0	-4,316	-5,478	-15,292	-15,656	-13,272
Evaporation payback										2,483	889	0	0
Re-Regulation transfer							0	0	0	0	0	0	0
Ownership total		885,087	884,408	883,726	880,382	878,183	874,563	869,127	919,248	1,178,220	1,152,696	1,127,007	1,105,229
Actual Ownership	889,189	885,087	884,408	883,726	880,382	878,183	874,563	869,127	919,248	1,178,220	1,152,696	1,127,007	1,105,229
<b>Glendo Ownership</b>													
Evaporation		-1,265	-338	-174	-213	-485	-772	-1,153	-1,581	-2,914	-3,225	-3,318	-2,465
Accural		0	0	0	0	0	882	10,437	10,021	0	0	0	0
B/ Delivery		0	0	0	0	0	0	0	-16	-30	-183	-6,739	-3,173
Evaporation payback										8,895	274	0	0
Ownership total		149,058	148,720	148,546	148,333	147,848	147,958	157,242	165,666	171,617	168,483	158,426	152,788
Actual Ownership	150,323	149,058	148,720	148,546	148,333	147,848	147,958	157,242	165,666	171,617	168,483	158,426	152,788
<b>Guernsey Ownership</b>													
Evaporation		0	0	-22	-71	-202	-424	-716	-489	-1,054	-543	0	0
Accural		0	0	8,934	14,558	10,752	12,057	0	0	0	0	0	0
B/ Delivery		0	0	0	0	0	0	0	0	0	-45,194	0	0
Evaporation payback										2,289	125	0	0
Re-Regulation transfer												0	0
Ownership total		0	0	8,912	23,399	33,949	45,582	44,866	44,377	45,612	0	0	0
Actual Ownership	0	0	0	8,912	23,399	33,949	45,582	44,866	44,377	45,612	0	0	0
<b>Inland Lakes</b>													
Evaporation		-44	-22	-31	-39	-59	-86	-154	-57	0	0	0	0
Accural		7,558	8,320	0	0	0	0	30,279	0	0	0	0	0
C/ Delivery		0	0	0	0	0	0	-18,452	-27,213	0	0	0	0
Ownership total		7,514	15,812	15,781	15,742	15,683	15,597	27,270	0	0	0	0	0
Actual Ownership	0	7,514	15,812	15,781	15,742	15,683	15,597	27,270	0	0	0	0	0

**Table 8 (Continued) Summary of North Platte River System Ownership for Water Year 2015**

Summary of North Platte River Systems Ownerships for Water Year 2015 (Acre-Feet)													
Months	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL													
<b>City of Cheyenne</b>													
Evaporation		-12	0	0	-17	-12	-23	-43	-17	-19	-31	-36	-44
Stored		767	774	707	903	607	302	-730	-4,003	1,167	772	1,196	1,154
Used		-43	-263	-162	-81	0	0	0	0	174	0	0	-259
Ownership total		3,636	4,147	4,692	5,497	6,092	6,371	5,598	1,578	2,900	3,641	4,801	5,652
Actual Ownership	2,924	3,636	4,147	4,692	5,497	6,092	6,371	5,598	1,578	2,900	3,641	4,801	5,652
<b>Pacific Corp (PP&amp;L)</b>													
Evaporation		-18	-3	0	-2	-4	-8	-12	-13	-26	-27	-31	-28
Accrual		0	0	0	0	0	0	0	60	26	27	31	24
Delivery		0	0	0	0	0	0	0	0	0	0	0	-7
Ownership total		1,982	1,979	1,979	1,977	1,973	1,965	1,953	2,000	2,000	2,000	2,000	1,989
Actual Ownership	2,000	1,982	1,979	1,979	1,977	1,973	1,965	1,953	2,000	2,000	2,000	2,000	1,989
<b>WWDC Ownership</b>													
Evaporation		0	0	0	0	0	0	0	0	0	0	0	0
Accrual		0	0	0	0	0	0	0	0	0	0	0	0
Delivery		0	0	0	0	0	0	0	0	0	0	0	0
Ownership total		0	0	0	0	0	0	0	0	0	0	0	0
Actual Ownership	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Operational Ownership</b>													
Evaporation		-75	-14	0	-5	-16	-33	-55	-76	-165	-133	-124	-78
Accrual		0	0	0	0	0	49	0	6,906	0	13	0	0
Delivery		0	0	0	0	0	0	0	0	0	-5,460	-3,203	-878
Evaporation payback										210	0	0	0
Ownership total		8,199	8,185	8,185	8,180	8,164	8,180	8,125	14,955	15,000	9,420	6,093	5,137
Actual Ownership	8,274	8,199	8,185	8,185	8,180	8,164	8,180	8,125	14,955	15,000	9,420	6,093	5,137

A/ In 1992 the Wyoming State Engineer granted an exchange which allows Pacific Power to exchange direct flows in the winter months (Oct-Apr) 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, 2015 until July 26, 2015 when the last 25 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. In April and May 45,665 AF was transferred to the Inland Lakes.

D/ Wyoming Water Development Commission did not contract with the Bureau of reclamation for storage space

**Table 9 Actual Reservoir Operations for Water Year 2015**

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2014

HYDROLOGY OPERATIONS

Seminole Reservoir Operations

		Initial Content 694.2 Kaf						Operating Limits: Max 1017.3 Kaf, 6357.00 Ft. Min 31.7 Kaf, 6239.02 Ft.					
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	42.4	34.4	38.1	37.9	37.1	67.4	72.9	216.6	271.4	93.0	26.3	19.0
Total Inflow	cfs	690.	578.	620.	616.	668.	1096.	1225.	3523.	4561.	1512.	428.	319.
Turbine Release	kaf	32.9	31.7	33.0	33.1	30.0	33.7	97.9	121.1	155.0	85.8	61.8	54.0
Jetflow Release	kaf	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	17.3	0.1	0.0	0.0
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	33.1	32.0	33.1	33.1	30.0	33.7	97.9	121.1	172.3	85.9	61.8	54.0
Total Release	cfs	538.	538.	538.	539.	540.	548.	1645.	1969.	2895.	1397.	1005.	908.
Evaporation	kaf	3.3	0.5	.6	2.8	1.9	3.5	4.8	4.1	8.3	9.1	8.0	6.5
End-month content	kaf	700.2*	702.0*	706.4*	708.4*	713.5*	743.8*	714.0*	805.3*	896.1*	894.0*	850.5*	809.0*
End-month elevation	ft	6339.0	6339.1	6339.4	6339.5	6339.9	6341.8	6339.9	6345.6	6350.7	6350.6	6348.2	6345.8

Kortes Reservoir Operations

		Initial Content 4.7 Kaf						Operating Limits: Max 4.8 Kaf, 6142.73 Ft. Min 1.7 Kaf, 6092.73 Ft.					
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	32.9	32.8	33.1	35.2	31.3	35.2	97.9	116.8	172.7	85.3	61.7	55.0
Total Inflow	cfs	535.	551.	538.	572.	564.	572.	1645.	1900.	2902.	1387.	1003.	924.
Turbine Release	kaf	33.1	31.4	33.1	33.1	29.9	33.4	68.3	82.8	104.3	85.9	61.9	53.5
Spillway Release	kaf	0.0	0.6	0.0	0.0	0.5	1.0	67.3	38.3	68.1	0.0	0.0	0.3
Total Release	kaf	33.1	32.0	33.1	33.1	30.4	34.4	135.6	121.1	172.4	85.9	61.9	53.8
Total Release	cfs	538.	538.	538.	539.	547.	559.	2205.	1969.	2898.	1397.	1007.	904.

Pathfinder Reservoir Operations

		Initial Content 643.8 Kaf						Operating Limits: Max 1070.0 Kaf, 5852.48 Ft. Min 31.4 Kaf, 5746.00 Ft.					
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Sweetwater Inflow	kaf	3.8	3.0	3.5	3.7	3.9	5.0	5.3	13.3	17.0	5.4	2.0	0.9
Kortes-Path Gain	kaf	2.0	-4.1	7.1	5.0	7.3	8.9	11.2	24.3	24.1	-1.9	0.0	1.0
Inflow from Kortes	kaf	32.8	32.8	33.1	35.2	31.3	35.2	97.9	116.8	172.7	85.3	61.7	55.0
Total Inflow	kaf	38.6	31.7	43.7	43.9	42.5	49.1	114.4	154.4	213.8	88.8	63.7	56.9
Total Inflow	cfs	628.	533.	711.	714.	765.	799.	1923.	2511.	3593.	1444.	1036.	956.
Turbine Release	kaf	0.0	0.0	21.9	23.3	21.3	44.3	124.9	69.0	33.3	97.8	104.7	66.9
Jetflow Release	kaf	6.6	26.3	5.8	4.5	4.8	4.9	8.2	5.2	5.0	5.0	5.0	5.1
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	9.9	26.3	27.7	27.8	26.1	49.2	133.1	74.2	38.3	102.8	109.7	72.0
Total Release	cfs	161.	472.	450.	452.	470.	800.	2237.	1207.	644.	1672.	1784.	1210.
Evaporation	kaf	4.4	0.6	0.6	3.1	2.1	3.7	5.3	4.3	9.7	11.3	10.5	8.4
End-month content	kaf	668.0	669.0	682.9	697.8	713.2	711.7	689.1	737.0	880.6	844.4	760.7	723.1
End-month elevation	ft	5831.9	5831.9	5832.8	5833.7	5834.6	5834.5	5833.2	5836.0	5843.6	5841.8	5837.3	5835.2

Alcova Reservoir Operations

		Initial Content 180.5 Kaf						Operating Limits: Max 184.4 Kaf, 5500.00 Ft. Min 145.3 Kaf, 5483.12 Ft.					
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	9.9	28.2	28.4	27.6	25.7	47.7	131.5	99.8	59.1	112.1	136.5	86.6
Total Inflow	cfs	161.	474.	462.	449.	463.	776.	2210.	1623.	993.	1823.	2220.	1455.
Turbine Release	kaf	28.9	26.7	27.6	27.6	25.2	47.5	110.2	69.1	30.1	84.9	92.4	57.7
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0
Casper Canal Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	7.2	16.4	15.7	13.3
Total Release	kaf	28.9	26.7	27.6	27.6	25.2	47.5	110.6	73.4	31.3	101.4	108.1	71.0
Total Release	cfs	470.	449.	449.	449.	454.	772.	1859.	1194.	526.	1649.	1758.	1193.
Evaporation	kaf	0.7	0.1	0.1	0.4	0.3	0.5	0.8	0.6	1.3	1.4	1.4	1.1
End-month content	kaf	157.5*	157.0*	157.0*	156.7*	157.2*	158.4*	180.1*	180.2*	179.9*	179.9*	180.3*	180.2*
End-month elevation	ft	5488.7	5488.4	5488.4	5488.3	5488.5	5489.0	5498.3	5498.3	5498.2	5498.2	5498.3	5498.3

**Table 9 (Continued) Actual Reservoir Operations for Water Year 2015**

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2014

Gray Reef Reservoir Operations			Initial Content				1.3 Kaf		Operating Limits: Max Min			1.1 Kaf, 5327.42 Ft. 0.0 Kaf, 5306.00 Ft.		
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	32.2	28.4	28.2	27.7	25.0	46.1	109.0	88.7	44.0	93.5	116.3	75.6	
Total Inflow	cfs	524.	477.	459.	450.	450.	750.	1832.	1443.	739.	1521.	1891.	1270.	
Total Release	kaf	32.4	28.4	28.2	27.7	25.0	46.1	109.0	88.7	43.9	93.4	116.2	75.5	
Total Release	cfs	527.	477.	459.	450.	450.	750.	1832.	1443.	738.	1519.	1890.	1269.	
Glendo Reservoir Operations			Initial Content				87.1 Kaf		Operating Limits: Max Min			789.4 Kaf, 4654.45 Ft. 63.2 Kaf, 4573.94 Ft.		
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Alcova-Glendo Gain	kaf	5.6	7.3	7.8	13.5	9.8	12.2	37.4	105.4	49.6	3.5	-3.0	1.9	
Infl from Gray Reef	kaf	32.4	28.4	28.2	27.7	25.0	46.1	109.0	88.7	43.9	93.4	116.2	75.5	
Total Inflow	kaf	38.0	35.7	36.0	41.2	34.8	58.3	146.4	194.1	93.5	96.9	113.2	77.4	
Total Inflow	cfs	618.	600.	585.	670.	627.	948.	2460.	3157.	1571.	1576.	1841.	1301.	
Turbine Release	kaf	0.0	0.0	0.0	0.3	0.0	0.0	14.4	42.1	125.9	190.5	270.9	129.2	
Low Flow Release	kaf	2.5	1.6	1.7	1.5	1.5	1.7	1.5	6.8	1.5	1.5	1.5	1.5	
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Irrigation Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.9	0.0	22.0	2.3	
Total Release	kaf	2.5	1.6	1.7	1.7	1.5	1.7	18.0	48.9	128.3	192.0	294.4	136.9	
Total Release	cfs	41.	27.	28.	28.	27.	28.	302.	795.	2156.	3122.	4788.	2301.	
Evaporation	kaf	1.0	0.3	0.2	0.4	0.8	1.5	2.5	3.1	6.0	5.6	4.1	2.0	
End-month content	kaf	121.7*	155.2*	188.6*	227.4#	260.0#	315.2*	417.8*	542.3*	497.8*	388.5*	195.7*	133.6*	
End-month elevation	ft	4589.0	4595.6	4601.1	4606.7	4611.1	4617.7	4628.4	4639.0	4635.5	4625.5	4602.2	4591.5	
Guernsey Reservoir Operations			Initial Content				10.3 Kaf		Operating Limits: Max Min			45.6 Kaf, 4419.99 Ft. 0.0 Kaf, 4370.00 Ft.		
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Glendo-Guerns Gain	kaf	2.5	1.4	1.6	1.6	1.4	1.6	3.5	32.9	18.0	4.8	-4.9	-0.1	
Inflow from Glendo	kaf	2.5	1.6	2.0	1.8	1.5	1.6	48.0	64.6	130.6	198.6	299.2	136.9	
Total Inflow	kaf	5.0	3.0	3.6	3.4	2.9	3.2	51.5	97.5	148.6	203.4	294.3	136.8	
Total Inflow	cfs	81.	50.	59.	55.	52.	52.	865.	1586.	2497.	3308.	4786.	2299.	
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	12.8	57.0	57.7	34.0	52.9	56.0	
Seepage	kaf	0.5	0.4	0.5	0.5	0.4	0.4	0.4	1.2	3.0	3.1	2.5	0.3	
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	5.4	21.4	82.9	190.7	206.8	98.6	
Total Release	kaf	0.5	0.4	0.5	0.5	0.4	0.4	18.6	79.6	143.6	227.8	262.2	154.9	
Total Release	cfs	8.	7.	8.	8.	7.	7.	313.	1295.	2413.	3705.	4264.	2603.	
Evaporation	kaf	0.3	0.1	0.1	0.1	0.2	0.4	0.6	0.4	0.9	0.5	0.9	0.7	
End-month content	kaf	14.4*	16.8*	19.7*	22.4*	24.7*	27.2*	29.6*	31.3*	33.1*	1.6*	28.0*	5.2*	
End-month elevation	ft	4403.9	4405.5	4407.4	4408.9	4410.2	4411.5	4412.7	4413.6	4414.4	4386.6	4411.9	4394.8	

### Flood Benefits for Water Year 2015

**Table 10** Flood Damage Prevented by Dams for WY 2015 (on the North Platte River Basin System)

DAMS	WATER YEAR 2015	PRIOR TO 2015 <sup>2</sup>	ACCUMULATED TOTAL <sup>1</sup>
SEMINOE	\$778,500	\$83,771,900	\$84,550,400
PATHFINDER	\$687,100	\$27,793,600	\$28,480,700
ALCOVA	\$92,000	\$2,187,100	\$2,279,100
GLENDO	\$6,974,100	\$188,554,500	\$195,528,600
TOTAL	\$8,531,700	\$302,307,100	\$310,838,800

<sup>1</sup> This data is received from the Army Corps of Engineers Omaha District Office and is revised every October.

<sup>2</sup> The period of assessment is 1970 through 2015 except for Glendo Dam, which is 1964 through 2015.

### Generation for Water Year 2015

Power generation was above average at the Guernsey Powerplant and below average for all other powerplants in the North Platte River Basin in WY 2015. See Table 11 for a breakdown of generation by powerplant.

**Table 11** Power Generation Water Year 2015

Powerplant	Gross generation <sup>1</sup> (GWh)	Percent of Average <sup>2</sup>
Seminoe	117.8	93
Kortes	107.8	80
Fremont Canyon	180.1	83
Alcova	78.8	67
Glendo	70.8	88
Guernsey	18.6	103
Total Basin	573.9	83

<sup>1</sup> Generation is reported in giga-watt hours (GWh).

<sup>2</sup> 30 year average (1985-2014)

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

**Table 12** North Platte River Powerplant Data

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	17,000	51,000	97-227	4,050	127.2
Kortes	3	12,000	36,000	192-204	2,910	134.0
Fremont Canyon	2	33,400	66,800	247-363	3,080	216.0
Alcova	2	19,500	39,000	153-165	4,100	110.4
Glendo	2	19,000	38,000	73-156	3,400	80.6
Guernsey	2	3,200	6,400	89-91	1,340	18.0
Total	14	---	237,200	---	---	686.2

<sup>1</sup> 1985-2014<sup>2</sup> Installed capacity from Monthly Report of Power Operations-Powerplant (Form PO&M 59)

### **PROPOSED OPERATIONS FOR WATER YEAR 2016**

Three operation studies were developed for the System to establish an AOP for WY 2016. 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 statistical minimum, statistical maximum, and statistical most probable inflow estimates. The statistical most probable inflow is based on long-term averages and approximates a 50 percent chance of occurrence. The three studies for WY 2016 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 1,893,100 AF at the beginning of the WY 2016. This amount was 136 percent of the 30 year average (1986-2015) and 67 percent of capacity.

#### **Seminole Reservoir**

##### **Most Probable Condition - 2016**

October through March -- Seminole Reservoir has a storage of 809,045 AF at the beginning of WY 2016, which is 137 percent of the 30-year average and 80 percent of capacity. Planned turbine releases from Seminole Reservoir are approximately 530 cfs for October 2015 through February 2016 with an increase to 1,300 cfs in March 2016. Reservoir storage would decrease to

about 741,000 AF by March 31, 2016. The releases are based on an estimated Seminoe inflow for the October 2015 through March 2016 period of 180,600 AF. The planned Seminoe 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 1,800 cfs for April 2016, approximately 3,000 cfs for May and June 2016, then decreasing to 1,750 cfs in July 2016, to 1,000 cfs in August 2016, and 900 cfs in September 2016. There is an expected bypass of water through the jetflow during June in WY 2016. With most probable inflow conditions, the Seminoe Reservoir storage will reach a maximum of 906,600 AF by the end of June 2016. Projected carryover storage of about 816,100 AF at the end of WY 2016 would be 138 percent of average and 89 percent of capacity.

### **Reasonable Minimum Condition - 2016**

October through March -- Planned water release for this period under reasonable minimum inflow condition will be the same as in the most probable condition at approximately 530 cfs through February 2016 with an increase to 600 cfs in March 2016. 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 153,400 AF for the period, which is 27,200 AF less than the most probable condition. The March 31, 2016 reservoir content is expected to be approximately 757,400 AF under these conditions.

April through September -- Seminoe water releases will be at 1,000 cfs through April 2016, increasing to 1,350 cfs in May 2016, then increasing to 1,600 cfs in June 2016. Releases will decrease to 1,500 cfs in July 2016, then to 1,300 cfs in August 2016, and 800 cfs in September 2016 in order to meet irrigation requirements and provide power production. Under a minimum condition the June 2016 content will be approximately 811,400 AF, and WY 2016 will end with a content of 639,100 AF which is 108 percent of average and 63 percent of capacity.

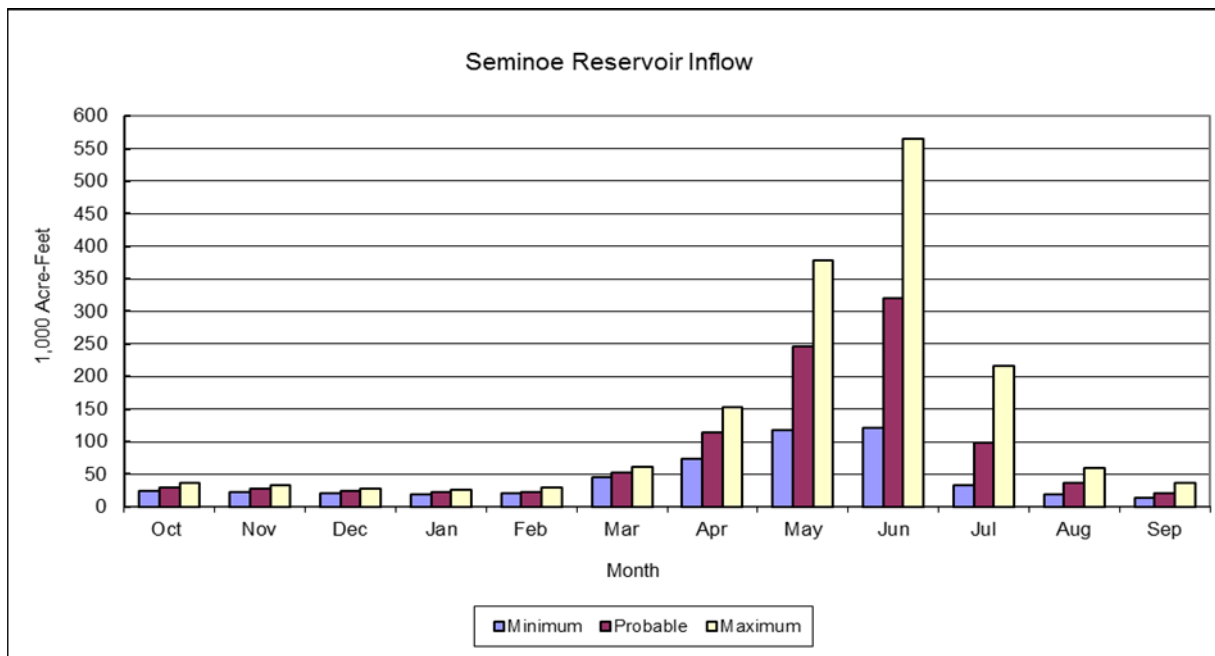
### **Reasonable Maximum Condition - 2016**

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 Seminoe Reservoir for the spring runoff. Although inflows to Seminoe 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 2015 through March 2016 inflows under this condition would be 213,900 AF, which is 33,300 AF more than the most probable runoff condition. The reservoir content would increase from 664,400 AF at the end of March 2016 to 988,000 AF by the end of June 2016 under these conditions.

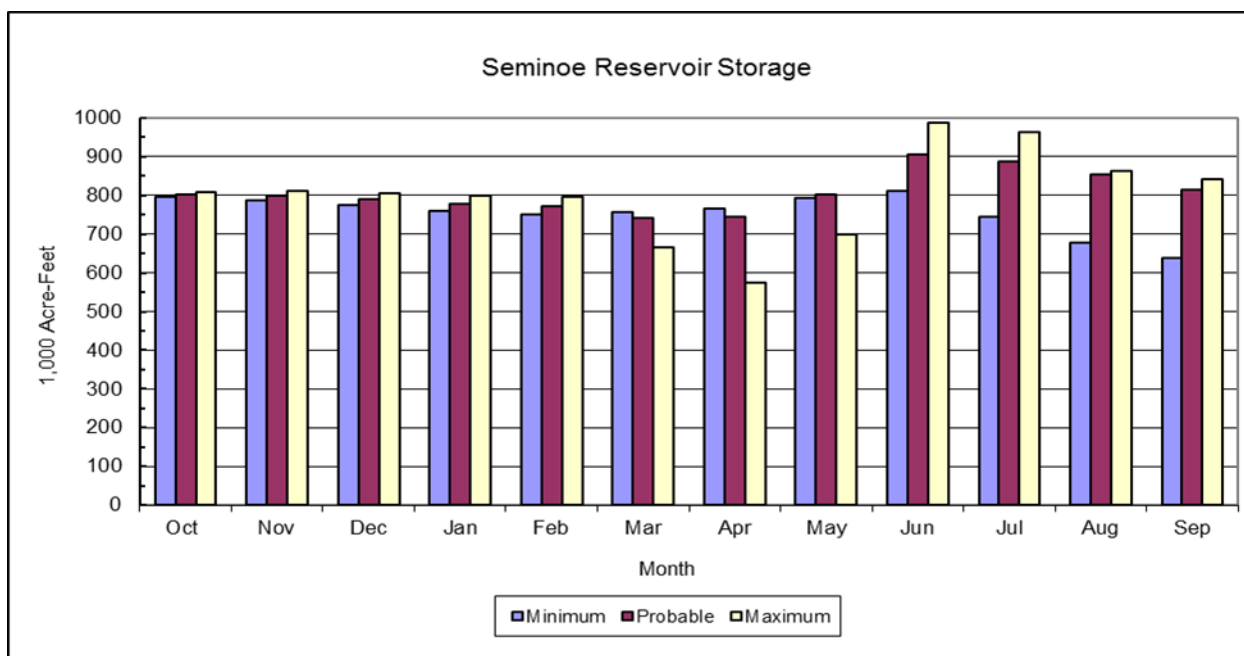
April through September -- Seminoe Reservoir release for March 2016 will be 3,100 cfs, then releases will increase to about 4,000 cfs in April through May 2016, and increase to 4,500 cfs in June 2016. The release will then decrease to approximately 3,700 cfs in July 2016, approximately 2,500 cfs in August 2016, and approximately 900 cfs in September 2016. Inflows for the April to



July 2016 period will be 1,312,300 AF, which is 532,600 AF more than the most probable runoff condition. Seminole Reservoir will reach its maximum end of month content for the year in June 2016 with approximately 988,000 AF in storage. This plan of operation would result in an end of year carryover storage of 841,000 AF, which would be 142 percent of average and 83 percent of 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** Seminole Reservoir Inflow (Predicted for Water Year 2016)



**Figure 13** Seminole Reservoir Storage (Predicted for Water Year 2016)

## **Pathfinder Reservoir**

### **Most Probable Condition – 2016**

October through March -- Pathfinder Reservoir had a storage of 758,882 AF at the beginning of WY 2016, which is 176 percent of the 30 year average and 71 percent of capacity. Under this condition, gains to the river between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are expected to be 30,900 AF for the October 2015 – March 2016 period under the most probable inflow conditions. Fremont Canyon Powerplant releases will be reduced during October 2015 to allow Alcova Reservoir water surface level to be lowered to 5,488.0 feet plus or minus one foot, which is the normal elevation range for winter operation. 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 836,500 AF at the end of March 2016.

April through September -- Pathfinder Reservoir storage will reach a maximum content of about 1,006,700 AF by the end of June 2016 and be drawn down to a storage content of about 824,600 AF by the end of WY 2016, which would be 171 percent of average. River gains between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are estimated at about 71,300 AF for the April-July period under most probable inflow conditions. In April 2016 Fremont Canyon Powerplant releases will be coordinated with Alcova releases to refill Alcova Reservoir to its normal summer operating range of 5,498 feet plus or minus one 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. Water releases will be increased in March 2016 to approximately 800 cfs and then be increased to approximately 1,600 cfs for April 2016, 1,800 cfs for May 2016, 2,600 cfs in June 2016, 2,800 cfs in July 2016, and then decreasing to approximately 2,600 cfs in August 2016. Releases will be reduced in September 2016 to approximately 1,000 cfs.

### **Reasonable Minimum Condition - 2016**

October through March -- Under this condition, river gains between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are expected to be 10,100 AF for the October 2015 to March 2016 period under the minimum inflow conditions. Pathfinder Reservoir storage will decline to about 763,800 AF by the end of March 2016. 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 25,000 AF for the April-July period under reasonable minimum inflow conditions. In April 2016, releases will be coordinated with Alcova releases to refill Alcova Reservoir to its normal summer operating range of 5,498 feet plus or minus one foot by the end of April 2016.

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 summer releases will be approximately 2,900 cfs, during July and August 2016, and then reduced as irrigation demands drop off to end WY 2016 at approximately 1,000 cfs during September 2016. If reasonable minimum runoff develops, the reservoir content at the end of WY 2016 will be about 386,800 AF, which would be 80 percent of average and 36 percent of capacity.

### **Reasonable Maximum Condition - 2016**

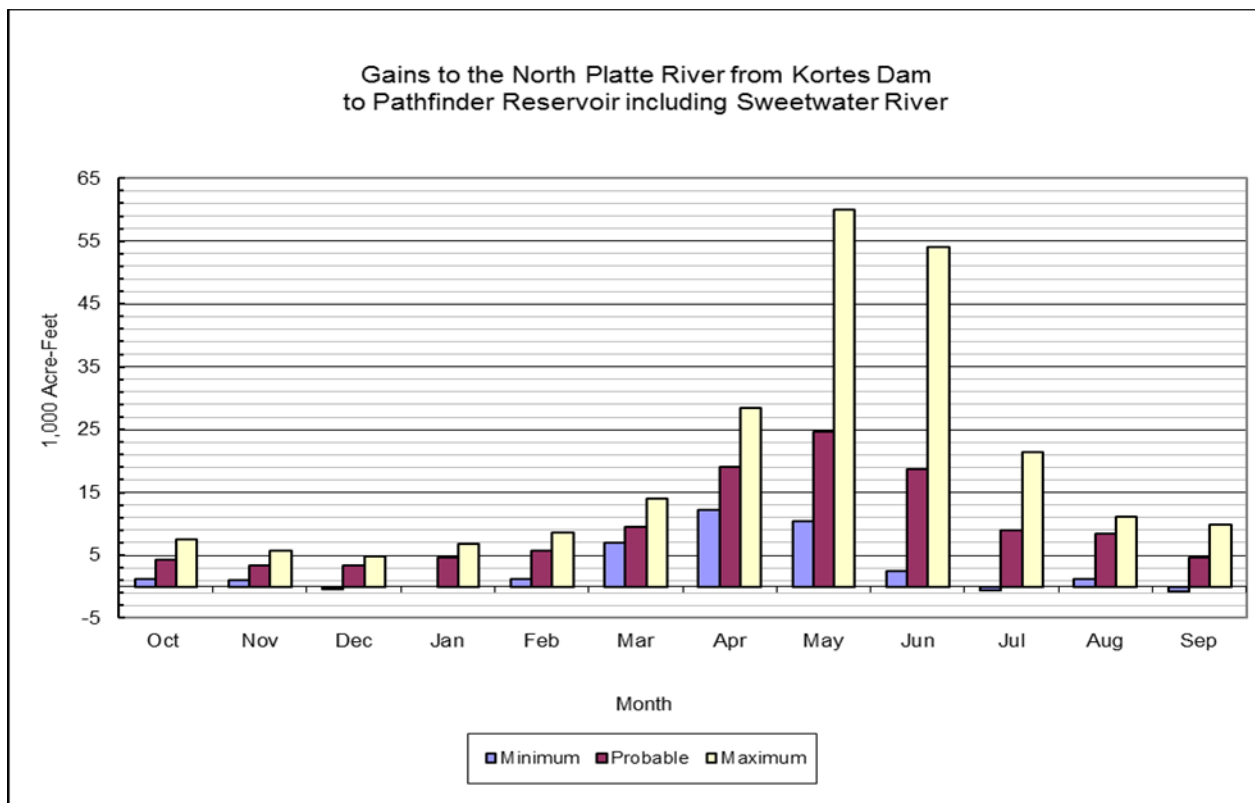
October through March -- Under this condition, river gains between Kortes Dam and Pathfinder Dam are expected to be 47,500 AF for the period. Pathfinder Reservoir content increases through this period from 787,000 AF at the end of October 2015 to 894,300 AF by the end of March 2016.

April through September -- In April 2016, water releases from Fremont Canyon Powerplant will be increased as Alcova Reservoir is refilled to water surface elevation of 5498 feet plus or minus one 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 2016. Releases will increase to approximately 1,900 cfs in March 2016, 2,900 cfs in April 2016, approximately 3,800 cfs in May 2016 and topping out at 4,800 cfs in June 2016. The releases will decrease to approximately 4,700 cfs in July 2016, 3,600 cfs in August 2016 and 2,700 cfs in September 2016.

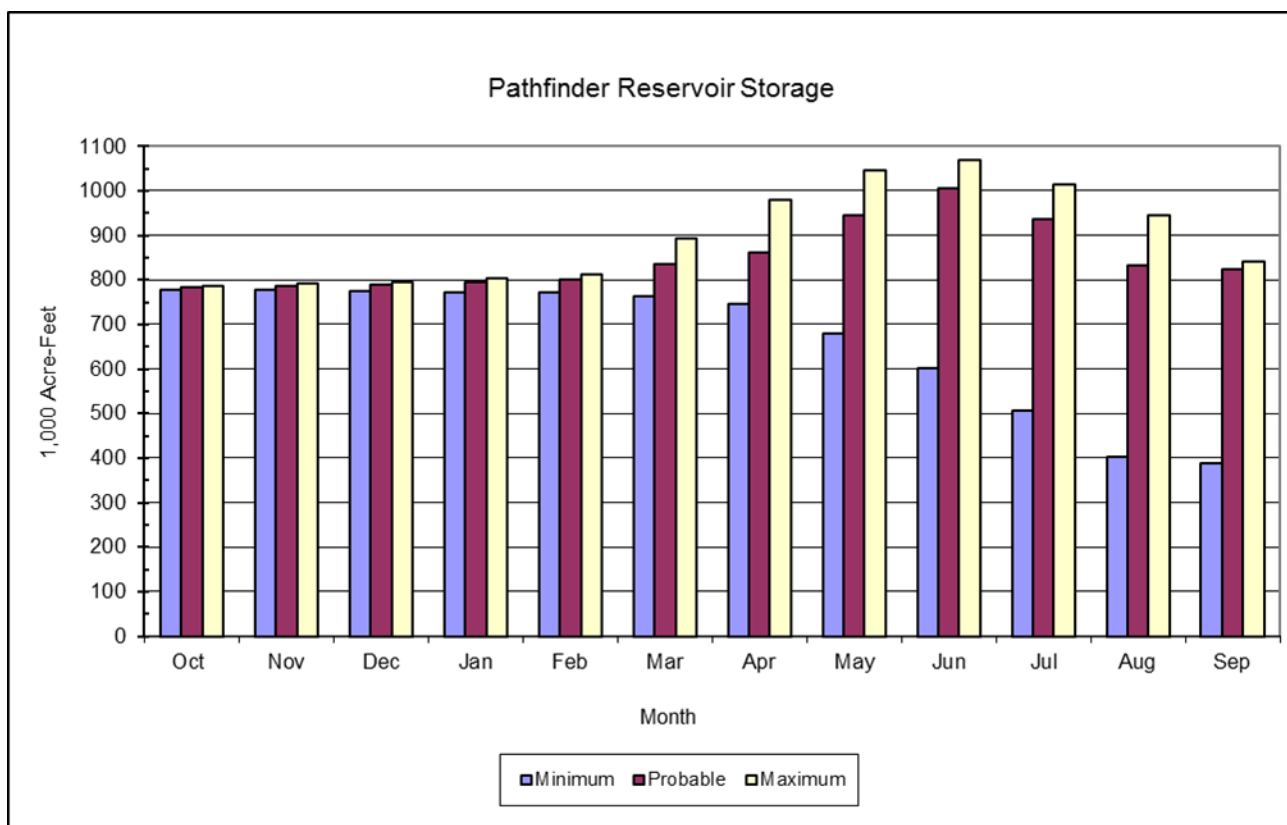
The Pathfinder Reservoir end of year storage content is projected to be about 840,200 AF, which would be 174 percent of average, and 79 percent of capacity.

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 through 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 2016)



**Figure 15** Pathfinder Reservoir Storage (Predicted for Water Year 2016)

## **Alcova Reservoir**

### **Most Probable Condition - 2016**

October through March -- During October 2015, Alcova Reservoir will be drawn down to the normal winter operating range of 5,488.0 feet plus or minus one foot and will be maintained there through March 2016. The October - February releases for WY 2016 will be maintained at approximately 500 cfs. The 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 2015 for a flushing flow below Gray Reef Reservoir.

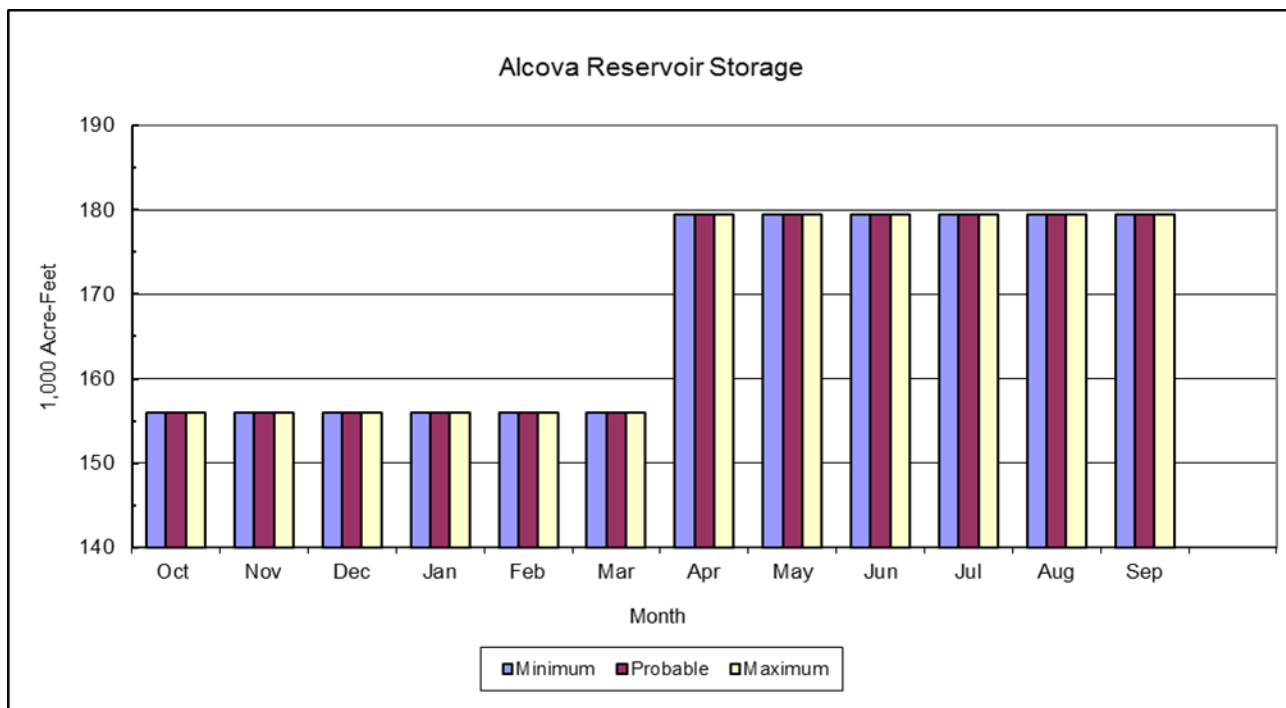
April through September -- During April 2016, the reservoir will be refilled to a water surface elevation of 5,498 feet (179,400 AF). This level will be maintained within plus or minus one foot to provide the necessary water surface elevation to make irrigation deliveries to Casper Canal and for recreational purposes. About 69,400 AF of water are scheduled to be delivered during the May to September 2016 period to meet Kendrick Project irrigation requirements. In addition April 2016 releases to the river are scheduled to be approximately 71,400 AF and May to September 2016 releases to the river from Alcova Reservoir will total approximately 579,700 AF which will be re-regulated in Gray Reef Reservoir.

### **Reasonable Minimum Condition – 2016**

October through September -- Operation of Alcova Reservoir would be the same as under the most probable condition, with about 69,400 AF of water scheduled to be delivered during the May to September 2016 period to meet Kendrick Project irrigation requirements. However April 2016 releases are scheduled to be approximately 59,500 AF and May-September 2016 releases to the North Platte River from Alcova Reservoir will total approximately 658,100 AF. Water released from Alcova Reservoir will be re-regulated in Gray Reef Reservoir.

### **Reasonable Maximum Condition - 2016**

October through September -- Operation of Alcova Reservoir would be the same as under the most probable condition, with about 69,400 AF of water scheduled to be delivered during the May to September 2016 period to meet Kendrick Project irrigation requirements. March 2016 releases will be approximately 117,900 AF, and April 2016 releases will be approximately 149,500 AF. May to September 2016 releases to the North Platte River from Alcova Reservoir will total approximately 1,111,700 AF. Figure 16 depicts a comparison of Minimum, Most Probable, and Maximum Alcova Storage.



**Figure 16** Alcova Reservoir Storage (Predicted for Water Year 2016)

## Gray Reef Reservoir

### Most Probable Condition - 2016

October through March -- Releases October 2015 – February 2016 from Gray Reef Dam will be maintained at approximately 500 cfs. A flushing flow is planned below Gray Reef Dam during March 2016.

April through September -- Releases from Gray Reef Reservoir will increase to 800 cfs in March 2016, 1,200 cfs in April 2016, approximately 1,600 cfs in May 2016, 2,300 cfs in June 2016 and increasing to 2,500 cfs in July 2016. In August 2016 the release will decrease to approximately 2,300 cfs and 800 cfs in September 2016.

### Reasonable Minimum Condition - 2016

October through March -- Operation of Gray Reef Reservoir winter releases will be the same as under the most probable condition through March 2016.

April through September -- Releases from Gray Reef Reservoir will be approximately 1,000 cfs in April 2016, 2,300 cfs in May 2016, and 2,600 cfs June through August 2016. The releases will be decreased to approximately 800 cfs in September 2016 as irrigation water is moved downstream. These predicted flows may be redistributed as the irrigators adjust their use of water from storage.

### **Reasonable Maximum Condition - 2016**

October through March -- Operation of Gray Reef Reservoir winter releases will be the same as under the most probable condition through February 2016 and increasing to 1,900 cfs in March 2016.

April through September -- The release from Gray Reef Reservoir will increase to approximately 2,500 cfs in April 2016, 3,600 cfs in May 2016, 4,600 cfs in June 2016. The July 2016 releases will decrease to approximately 4,400 cfs and August 2016 releases will decrease to approximately 3,300 cfs. The September 2016 releases will decrease to approximately 2,500 cfs.

### **Glendo and Guernsey Reservoirs**

#### **Most Probable Condition - 2016**

October through March -- Glendo Reservoir had a storage of 133,646 AF at the beginning of WY 2016, which is 106 percent of average and 27 percent of active conservation capacity of 492,022 AF. Glendo Reservoir storage will increase to approximately 387,300 AF by the end of March 2016, which will be 98 percent of average and 79 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 an elevation of 4,635 feet.

A constant release of 25 cfs is planned for the Glendo Dam outlet works which will provide the necessary water to maintain a year round flow in the North Platte River between Glendo Dam and Guernsey Reservoir. The water released will be restored in Guernsey Reservoir.

Guernsey Reservoir had storage of 5,222 AF at the beginning of WY 2016. Natural inflow will be stored during the winter which is expected to increase storage to 21,700 AF by March 31, 2016.

April through September -- During April 2016, 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 2016. Releases from Glendo Reservoir during the May through September 2016 period will be based upon meeting irrigation demand.

Guernsey Reservoir content will be maintained near 28,000 AF during April – August 2016. A silt run in July 2016 will require close coordination of Glendo and Guernsey release schedules as Guernsey Reservoir is drawn down to about 1,000 AF in July 2016 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 124,100 AF by the end of September 2016. During September 2016 Guernsey Reservoir will be lowered to less than 100 AF to accommodate anticipated work on the Guernsey North Spillway Gate in October 2016.



### **Reasonable Minimum Condition - 2016**

October through March -- Guernsey Reservoir had a storage of 5,222 AF at the beginning of WY 2016. Under the reasonable minimum inflow conditions, the natural inflow will be stored during the winter which will increase the Guernsey Reservoir content to 19,700 AF by the end of March 2016. Glendo Reservoir content will increase from the carryover storage of 133,646 AF to an end of March 2016 content of 381,700 AF.

April through September -- During April 2016, releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. Glendo Reservoir storage will increase to about 429,900 AF by the end of May 2016 and reach its' highest level of 472,100 AF at the end of June 2016.

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 638,800 AF lower than most probable conditions by the end of WY 2016 under reasonable minimum water supply conditions.

Guernsey Reservoir content will be maintained near 28,000 AF during April - August 2016. A silt run in July 2016 will require close coordination of Glendo and Guernsey release schedules. September 2016 releases will be made to meet irrigation requirements leaving 97,200 AF of water in Glendo Reservoir at the end of September 2016. Guernsey Reservoir content at the end of September 2016 will be less than 100 AF to accommodate anticipated work on the Guernsey North Spillway Gate in October 2016.

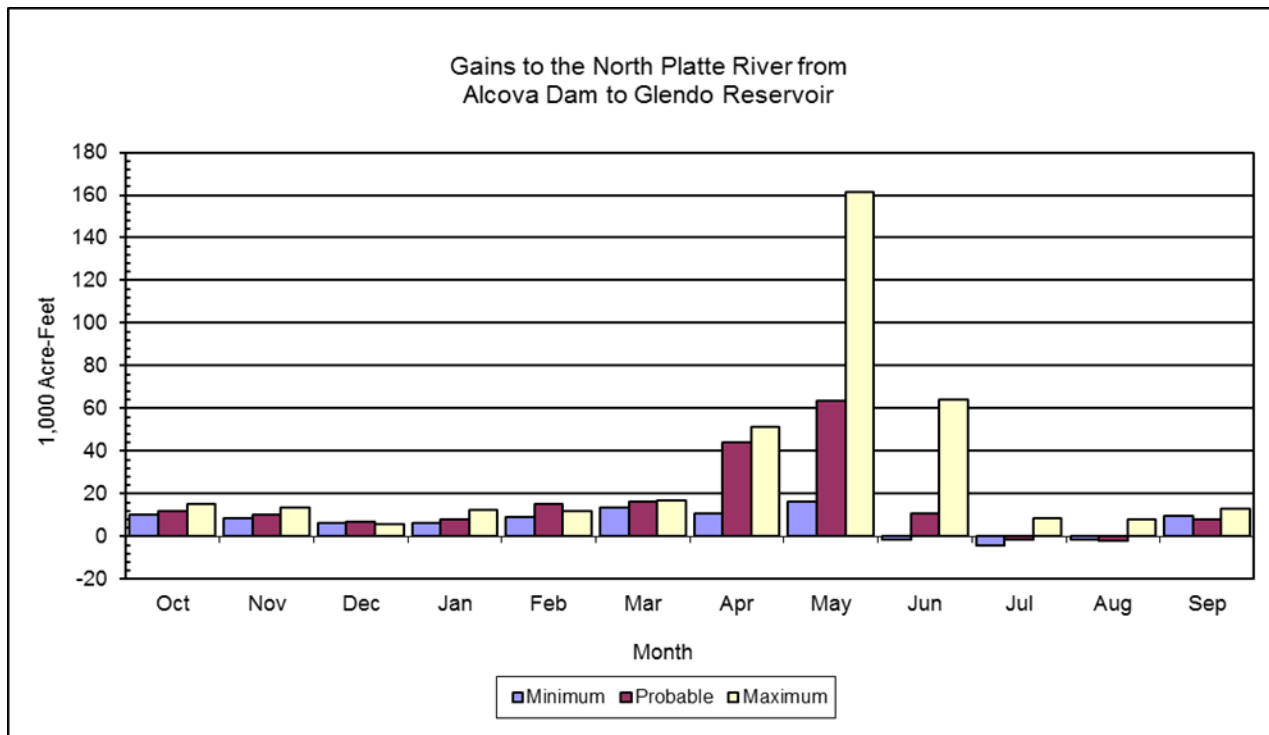
### **Reasonable Maximum Condition - 2016**

October through March -- Guernsey Reservoir had a storage of 5,222 AF at the beginning of WY 2016. Under the reasonable maximum inflow conditions, the natural inflow will be stored during the winter. Glendo Reservoir content is expected to increase from the starting content of 133,646 AF to an end of March 2016 content of 407,900 AF.

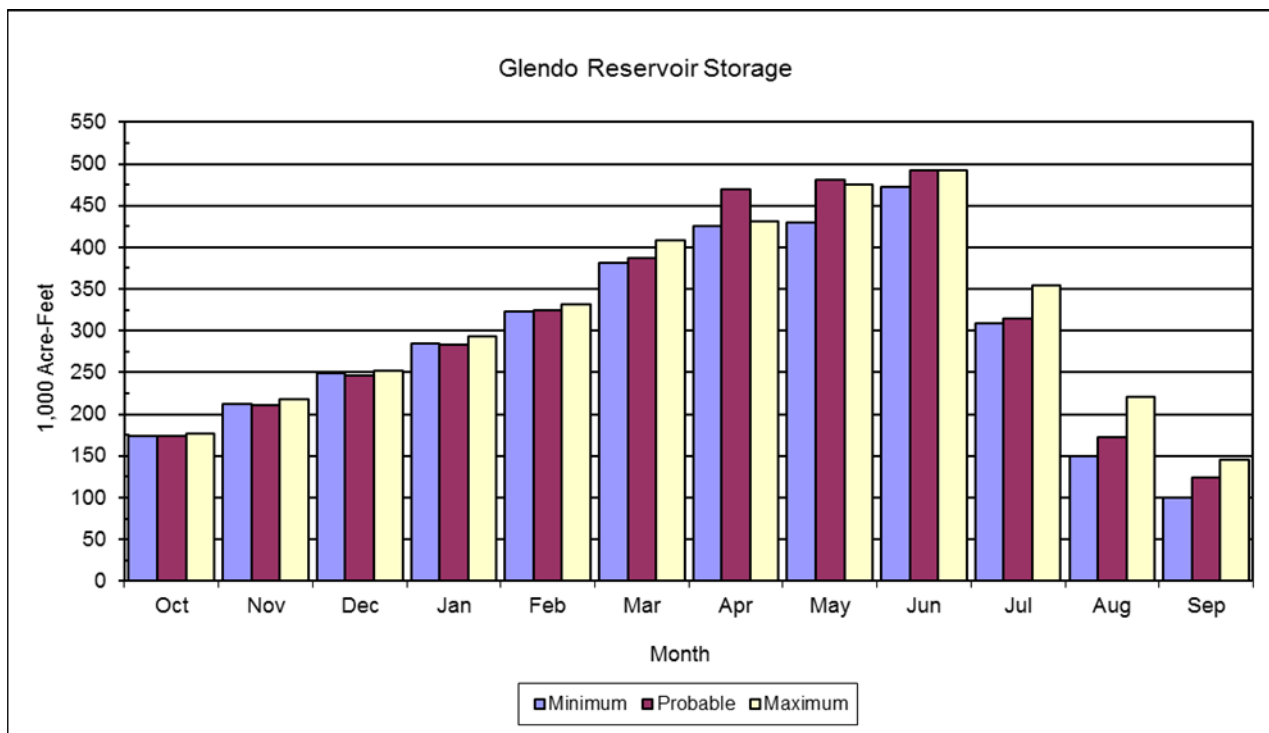
April through September -- Under maximum conditions, re-regulation water will be released as natural flow to meet irrigation demands until the supply is used as required. A total of 1,936,600 AF of water will be released from Guernsey Reservoir under reasonable maximum conditions. Guernsey Reservoir will maintain a content of 28,000 AF in April 2016 and remain at that level through August 2016. Under reasonable maximum conditions Glendo Reservoir will increase to peak storage of 492,000 AF in June 2016. During September 2016, releases will be scheduled to lower Guernsey Reservoir to less than 100 AF to accommodate anticipated work on the Guernsey North Spillway Gate in October 2016.

The operating plan shown assumes no downstream flow restrictions and normal irrigation deliveries. Glendo storage is projected to decrease to about 315,000 AF by the end of July 2016 and will be about 124,100 AF by the end of September 2016. This end of year Glendo storage would be 99 percent of average and the Total System storage at the end of WY 2016 would be 1,950,100 AF, 140 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 2016)



**Figure 18** Glendo Reservoir Storage (Predicted for Water Year 2016)

## Ownerships

### Most Probable Condition - 2016

Stored water which is held in accounts for various entities is referred to as their ownership. At the close of WY 2016, the North Platte Project storage ownership is expected to be at 672,100 AF (173 percent of average); the Kendrick Project storage ownership is expected to be at 1,116,700 AF (130 percent of average). Glendo storage ownership at the end of WY 2016 is expected to be 146,600 AF (114 percent of average).

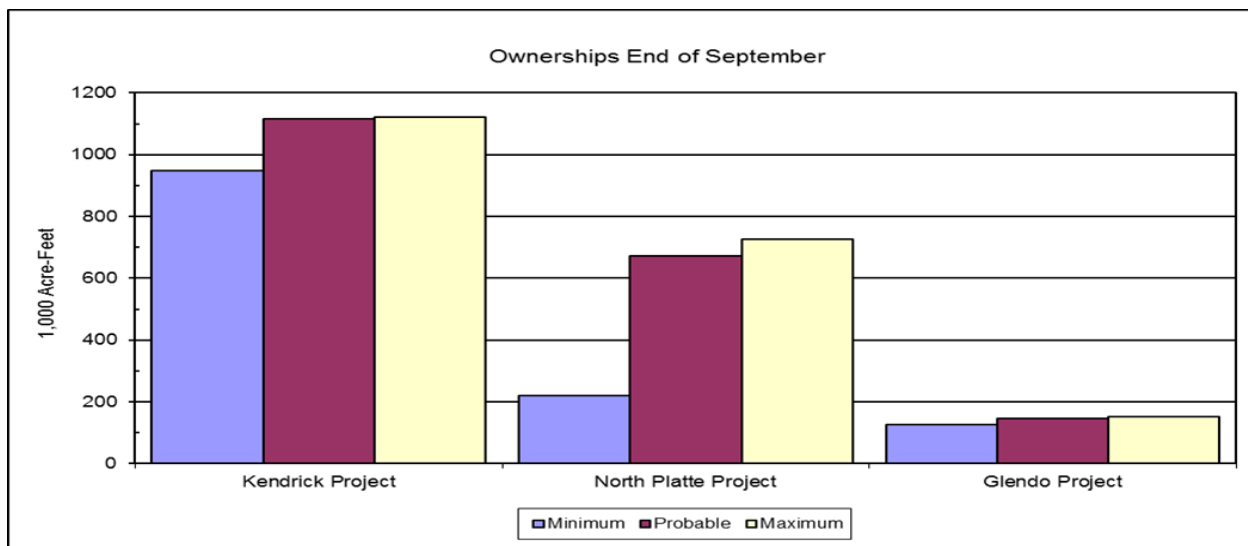
### Reasonable Minimum Condition - 2016

The North Platte Project storage ownership is expected to be at 221,300 AF (57 percent of average) at the close of WY 2016. The North Platte Project ownership will not fill under minimum conditions. The Kendrick Project storage ownership is expected to be near 949,300 AF which is 110 percent of average at the close of WY 2016. The Kendrick Project ownership will not accrue any water under the reasonable minimum conditions. Glendo storage ownership is expected to be 125,900 AF (98 percent of average) at the close of WY 2016 under the reasonable minimum inflow conditions.

### Reasonable Maximum Condition - 2016

Under reasonable maximum inflow conditions all storage water ownerships, in the North Platte River system, will fill during WY 2016. About 970,100 AF will be captured in the reservoirs as re-regulation water in the North Platte System under maximum condition. The water in the re-regulation water account will be released from the System as natural flow to meet irrigation demands.

Figure 19 depicts a comparison of Minimum, Most Probable, and Maximum, Kendrick, North Platte Project, and Glendo Project Ownerships at the end of WY 2016.



**Figure 19** Ownerships at the End of September (Predicted for Water Year 2016)

## Most Probable Generation Water Year 2016

The most probable power generation breakdown for each powerplant.

**Table 13** Most Probable Power Generation Water Year 2016

Powerplant	Gross generation <sup>1</sup> (GWh)	Percent of Average <sup>2</sup>
Seminole	161.879	129
Kortes	152.322	115
Fremont Canyon	244.208	116
Alcova	118.233	110
Glendo	86.479	109
Guernsey	20.458	116
Total Basin	783.579	116

<sup>1</sup> Gross generation is based on October 2015 storage and most probable inflow.

Gross generation is reported in giga-watt hours (GWh).

<sup>2</sup> 30 year average (1986-2015)

The Facilities Management Division creates a schedule of maintenance for all generating units. See Table 14 for the maintenance schedule for WY 2016.

**Table 14** Proposed Generating Unit Maintenance Schedule (October 2015 through September 2016)

<u>Facility and Unit No.</u>	<u>Scheduled Period</u>	<u>Description of Work</u>
Seminole Unit #1	02-16-16 through 03-17-16	Annual Maintenance
Seminole Unit #2	12-21-15 through 02-18-16	Annual Maintenance
Seminole Unit #3	03-14-16 through 04-14-16	Annual Maintenance
Kortes Unit #1	10-07-15 through 11-25-15	Annual Maintenance
Kortes Unit #1	01-19-16 through 03-10-16	Panel & Breaker Replacement
Kortes Unit #2	11-23-15 through 12-23-15	Annual Maintenance
Kortes Unit #2	01-01-16 through 04-01-16	Panel & Breaker Replacement
Kortes Unit #3	09-08-15 through 10-07-15	Annual Maintenance
Kortes Unit #3	01-19-16 through 03-10-16	Panel & Breaker Replacement
Fremont Unit #1	10-05-15 through 11-05-15	Annual Maintenance
Fremont Unit #2	11-16-15 through 12-23-15	Annual Maintenance
Alcova Unit #1	01-04-16 through 02-26-16	Annual Maintenance
Alcova Unit #2	03-01-16 through 03-31-16	Annual Maintenance
Glendo Unit #1	11-03-15 through 12-09-15	Annual Maintenance
Glendo Unit #2	02-02-16 through 02-18-16	Annual Maintenance
Guernsey Unit #1	12-01-15 through 12-14-15	Annual Maintenance
Guernsey Unit #2	02-02-16 through 02-18-16	Annual Maintenance

# Table 15 Most Probable Operating Plan for Water Year 2016

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Based on Expected April - July Inflow: Seminoe 780 kaf, Sweetwater 50 kaf, Glendo 118 kaf

## NORTH PLATTE RIVER OPERATING PLAN Year Beginning Oct 2015

### HYDROLOGY OPERATIONS

Seminoe Reservoir Operations		Initial Content 809.0 Kaf						Operating Limits: Max 1017.3 Kaf, 6357.00 Ft.					
								Min 31.7 Kaf, 6239.02 Ft.					
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	30.1	28.4	24.2	22.4	23.3	52.2	114.5	246.0	320.2	98.8	35.9	20.9
Total Inflow	cfs	490.	477.	394.	364.	405.	849.	1924.	4001.	5381.	1607.	584.	351.
Turbine Release	kaf	32.7	31.6	32.6	32.7	30.5	80.0	107.1	178.3	181.7	107.6	61.5	53.6
Jetflow Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.6	0.0	0.0	0.0
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	32.7	31.6	32.6	32.7	30.5	80.0	107.1	178.3	208.3	107.6	61.5	53.6
Total Release	cfs	532.	531.	530.	532.	530.	1301.	1800.	2900.	3501.	1750.	1000.	901.
Evaporation	kaf	4.7	2.6	1.4	1.4	1.4	2.8	5.1	5.2	9.1	10.4	8.8	6.2
End-month content	kaf	802.4	799.1	790.0	778.8	770.8*	741.0*	743.6*	802.7*	906.6*	888.0*	854.3*	816.1*
End-month elevation	ft	6345.4	6345.2	6344.7	6344.0	6343.5	6341.6	6341.8	6345.4	6351.3	6350.3	6348.4	6346.2
Kortes Reservoir Operations		Initial Content 4.7 Kaf						Operating Limits: Max 4.8 Kaf, 6142.73 Ft.					
								Min 1.7 Kaf, 6092.73 Ft.					
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	32.7	31.6	32.6	32.7	30.5	80.0	107.1	178.3	208.3	107.6	61.5	53.6
Total Inflow	cfs	532.	531.	530.	532.	530.	1301.	1800.	2900.	3501.	1750.	1000.	901.
Turbine Release	kaf	32.6	31.6	32.6	32.7	30.5	80.0	107.1	160.5	155.3	107.6	61.5	53.6
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.8	53.0	0.0	0.0	0.0
Total Release	kaf	32.6	31.6	32.6	32.7	30.5	80.0	107.1	178.3	208.3	107.6	61.5	53.6
Total Release	cfs	530.	531.	530.	532.	530.	1301.	1800.	2900.	3501.	1750.	1000.	901.
Pathfinder Reservoir Operations		Initial Content 758.9 Kaf						Operating Limits: Max 1070.0 Kaf, 5852.48 Ft.					
								Min 31.4 Kaf, 5746.00 Ft.					
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Sweetwater Inflow	kaf	3.2	3.5	3.4	3.6	3.8	4.8	12.4	16.7	15.6	4.9	2.1	1.2
Kortes-Path Gain	kaf	1.0	-0.1	0.0	1.0	1.9	4.8	6.6	8.0	3.1	4.0	6.3	3.5
Inflow from Kortes	kaf	32.6	31.6	32.6	32.7	30.5	80.0	107.1	178.3	208.3	107.6	61.5	53.6
Total Inflow	kaf	36.8	35.0	36.0	37.3	36.2	89.6	126.1	203.0	227.0	116.5	69.9	58.3
Total Inflow	cfs	598.	588.	585.	607.	629.	1457.	2119.	3301.	3815.	1895.	1137.	980.
Turbine Release	kaf	2.3	25.6	26.3	26.3	24.7	45.0	91.2	105.0	149.0	167.8	156.7	54.3
Jetflow Release	kaf	4.6	4.5	4.6	4.6	4.3	4.6	4.5	4.6	4.5	4.6	4.6	4.5
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	6.9	30.1	30.9	30.9	29.0	49.6	95.7	109.6	153.5	172.4	161.3	58.8
Total Release	cfs	112.	506.	503.	503.	504.	807.	1608.	1782.	2580.	2804.	2623.	988.
Evaporation	kaf	5.1	2.8	1.6	1.5	1.6	3.3	6.4	8.1	12.6	14.0	11.7	8.6
End-month content	kaf	783.7	785.8	789.3	794.2	799.8	836.5	860.5	945.8	1006.7	936.8	833.7	824.6
End-month elevation	ft	5838.6	5838.7	5838.9	5839.2	5839.5	5841.4	5842.6	5846.8	5849.7	5846.4	5841.2	5840.8
Alcova Reservoir Operations		Initial Content 180.2 Kaf						Operating Limits: Max 184.4 Kaf, 5500.00 Ft.					
								Min 145.3 Kaf, 5483.12 Ft.					
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	6.9	30.1	30.9	30.9	29.0	49.6	95.7	109.6	153.5	172.4	161.3	58.8
Total Inflow	cfs	112.	506.	503.	503.	504.	807.	1608.	1782.	2580.	2804.	2623.	988.
Turbine Release	kaf	30.5	29.8	30.7	30.7	28.8	49.2	71.4	98.6	138.1	153.8	141.5	47.7
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Casper Canal Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
Total Release	kaf	30.5	29.8	30.7	30.7	28.8	49.2	71.4	108.6	152.1	170.8	159.9	57.7
Total Release	cfs	496.	501.	499.	499.	501.	800.	1200.	1766.	2556.	2778.	2601.	970.
Evaporation	kaf	0.7	0.3	0.2	0.2	0.2	0.4	0.8	1.0	1.4	1.6	1.4	1.1
End-month content	kaf	155.9*	155.9*	155.9*	155.9*	155.9*	155.9*	179.4*	179.4*	179.4*	179.4*	179.4*	179.4*
End-month elevation	ft	5487.9	5487.9	5487.9	5487.9	5487.9	5487.9	5498.0	5498.0	5498.0	5498.0	5498.0	5498.0

**Table 15 (Continued) Most Probable Operating Plan for Water Year 2016**

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Based on Expected April - July Inflow: Seminole 780 kaf, Sweetwater 50 kaf, Glendo 118 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2015

Gray Reef Reservoir Operations			Initial Content				1.4 Kaf		Operating Limits: Max Min			1.1 Kaf, 5327.42 Ft.		
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	30.5	29.8	30.7	30.7	28.8	49.2	71.4	98.6	138.1	153.8	141.5	47.7	
Total Inflow	cfs	496.	501.	499.	499.	501.	800.	1200.	1604.	2321.	2501.	2301.	802.	
Total Release	kaf	30.8	29.8	30.7	30.7	28.8	49.2	71.4	98.6	138.0	153.7	141.4	47.6	
Total Release	cfs	501.	501.	499.	499.	501.	800.	1200.	1604.	2319.	2500.	2300.	800.	
Glendo Reservoir Operations			Initial Content				133.7 Kaf		Operating Limits: Max Min			789.4 Kaf, 4654.45 Ft.		
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Alcova-Glendo Gain	kaf	11.8	10.4	6.9	7.8	15.2	16.5	44.3	63.8	10.9	-1.5	-2.0	7.9	
Infl from Gray Reef	kaf	30.8	29.8	30.7	30.7	28.8	49.2	71.4	98.6	138.0	153.7	141.4	47.6	
Total Inflow	kaf	42.6	40.2	37.6	38.5	44.0	65.7	115.7	162.4	148.9	152.2	139.4	55.5	
Total Inflow	cfs	693.	676.	612.	626.	765.	1069.	1944.	2641.	2502.	2475.	2267.	933.	
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	29.5	144.4	128.8	229.5	221.4	99.8	
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Irrigation Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.2	52.7	0.0	
Total Release	kaf	1.5	1.5	1.5	1.5	1.5	1.5	31.0	145.9	130.3	322.2	275.6	101.3	
Total Release	cfs	24.	25.	24.	24.	26.	24.	521.	2373.	2190.	5240.	4482.	1702.	
Evaporation	kaf	1.2	0.8	0.7	0.7	0.8	1.8	3.2	5.0	6.9	6.8	4.4	2.4	
End-month content	kaf	173.6	211.5	246.9	283.2	324.9*	387.3*	468.8*	480.3*	492.0*	314.8#	172.3*	124.1*	
End-month elevation	ft	4598.7	4604.5	4609.4	4614.0	4618.8	4625.4	4633.0	4634.0	4635.0	4617.7	4598.5	4589.5	
Guernsey Reservoir Operations			Initial Content				5.2 Kaf		Operating Limits: Max Min			45.6 Kaf, 4419.99 Ft.		
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Glendo-Guerns Gain	kaf	3.4	2.1	1.9	1.5	1.1	0.6	5.8	8.6	2.7	2.4	0.3	5.2	
Inflow from Glendo	kaf	1.5	1.5	1.5	1.5	1.5	1.5	31.0	145.9	130.3	322.2	275.6	101.3	
Total Inflow	kaf	4.9	3.6	3.4	3.0	2.6	2.1	36.8	154.5	133.0	324.6	275.9	106.5	
Total Inflow	cfs	80.	60.	55.	49.	45.	34.	618.	2513.	2235.	5279.	4487.	1790.	
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	29.6	53.6	51.8	53.6	53.6	56.1	
Seepage	kaf	0.3	0.2	0.3	0.4	0.3	0.3	0.4	1.2	3.0	3.1	2.5	0.3	
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	77.2	266.8	218.9	77.6	
Total Release	kaf	0.3	0.2	0.3	0.4	0.3	0.3	30.0	153.8	132.0	323.5	275.0	134.0	
Total Release	cfs	5.	3.	5.	7.	5.	5.	504.	2501.	2218.	5261.	4472.	2252.	
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1.0	1.1	0.9	0.5	
End-month content	kaf	9.6	12.8#	15.7#	18.1#	20.2#	21.7#	28.0*	28.0*	28.0*	28.0*	28.0*	0.0	
End-month elevation	ft	4399.9	4402.7	4404.8	4406.4	4407.7	4408.5	4411.9	4411.9	4411.9	4411.9	4411.9	4370.0	
Physical EOM Cont	kaf	1931.1	1971.0	2003.7	2036.1	2077.5	2148.3	2286.2	2442.1	2618.6	2352.9	2073.6	1950.1	

**Table 15 (Continued) Most Probable Operating Plan for Water Year 2016**

NPRAOP V1.1K 21-Mar-2003 Run: 1-Oct-2015 11:42

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Based on Expected April - July Inflow: Seminole 780 kaf, Sweetwater 50 kaf, Glendo 118 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2015

OWNERSHIP OPERATIONS

North Platte Pathfinder		Initial Ownership 610.3 Kaf, Accrued this water year: 74.0 Kaf											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	30.4	29.6	26.2	25.6	27.5	58.7	127.5	134.2	0.0	0.0	0.0	0.0
Evaporation	kaf	3.9	2.2	1.4	1.4	1.5	3.1	6.0	8.2	13.7	13.7	11.7	7.0
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.1	227.4	91.3
End-month Ownership	kaf	640.7	670.3	696.5	722.1	749.6	808.3	935.8	1070.0	1056.3	1009.5	770.4	672.1
North Platte Guernsey		Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	0.0	0.0	8.5	8.9	16.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.0	0.0	0.3	0.4	0.3	0.4	0.4	0.4	0.6	0.6	0.0	0.0
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.6	0.0	0.0
End-month Ownership	kaf	0.0	0.0	8.5	17.4	33.4	45.6	45.2	44.8	44.2	0.0	0.0	0.0
Inland Lakes		Initial Ownership 0.0 Kaf, Accrued this water year: 15.8 Kaf											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	14.9	12.3	0.0	0.0	0.0	0.0	18.8	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.3	0.2	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0
Trnsfr fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	30.0	15.7	0.0	0.0	0.0	0.0
End-month Ownership	kaf	14.9	27.2	27.2	27.2	27.1	27.0	15.8	0.0	0.0	0.0	0.0	0.0
Kendrick		Initial Ownership 1105.2 Kaf, Accrued this water year: 0.0 Kaf											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.2	83.3	0.0	0.0	0.0
Evaporation	kaf	6.9	3.8	2.3	2.2	2.2	4.5	8.1	9.4	14.2	15.6	13.6	10.4
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	18.4	10.0
End-month Ownership	kaf	1098.3	1094.5	1092.2	1090.0	1087.8	1083.3	1075.2	1118.4	1201.7	1169.1	1137.1	1116.7
Glendo Unit		Initial Ownership 152.8 Kaf, Accrued this water year: 0.0 Kaf											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Accrual	kaf	0.0	0.0	0.0	0.0	0.0	4.5	17.4	0.0	0.0	0.0	0.0	0.0
Evaporation	kaf	0.9	0.6	0.3	0.3	0.3	0.6	1.1	1.5	2.1	2.2	1.8	1.4
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	5.0	4.0
End-month Ownership	kaf	151.9	151.3	151.0	150.7	150.4	154.3	170.6	169.1	167.0	158.8	152.0	146.6
Re-regulation		Initial Ownership 12.0 Kaf, Accrued this water year: 0.0 Kaf											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Accrual	kaf	0.0	0.0	0.0	0.0	0.0	0.0	13.7	0.0	109.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	1.7	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	132.2	0.0	0.0
End-month total	kaf	11.9	11.9	11.9	11.9	11.9	11.8	25.4	25.2	133.9	0.0	0.0	0.0

**Table 15 (Continued) Most Probable Operating Plan for Water Year 2016**

NPRAOP V1.1K 21-Mar-2003 Run: 1-Oct-2015 11:42

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Based on Expected April - July Inflow: Seminole 780 kaf, Sweetwater 50 kaf, Glendo 118 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2015

City of Cheyenne		Initial Ownership 5.7 Kaf,											
-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
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
Evaporation	kaf	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.6	0.5	0.0	0.0
Ownership	kaf	6.4	8.9	9.5	9.9	10.4	11.1	11.3	7.8	8.8	9.3	9.9	10.5
PacifiCorp		Initial Ownership 2.0 Kaf,											
-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ownership	kaf	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Other		Initial Ownership 5.1 Kaf,											
-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Evaporation	kaf	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.9	0.0
Ownership	kaf	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.8	4.7	4.2	2.2	2.2
IRRIGATION DELIVERY													
-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Kendrick (Casper Canal)		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Requested	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
Delivered	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
Kendrick (River)		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Requested	kaf	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Guernsey Deliveries		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
North Platte Req	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	138.1	130.0	317.5	270.0	130.0
Glendo Req	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	6.0	5.0	4.0
Inland Lakes Req	kaf	0.0	0.0	0.0	0.0	0.0	0.0	30.0	15.7	0.0	0.0	0.0	0.0
Total Requirement	kaf	0.0	0.0	0.0	0.0	0.0	0.0	30.0	153.8	132.0	323.5	275.0	134.0
Seepage	kaf	0.3	0.2	0.3	0.4	0.3	0.3	0.4	1.2	3.0	3.1	2.5	0.3
Actual Release	kaf	0.3	0.2	0.3	0.4	0.3	0.3	30.0	153.8	132.0	323.5	275.0	134.0



**Table 15 (Continued) Most Probable Operating Plan for Water Year 2016**

NPRAOP V1.1K 21-Mar-2003 Run: 1-Oct-2015 11:42

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Based on Expected April - July Inflow: Seminoe 780 kaf, Sweetwater 50 kaf, Glendo 118 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2015

POWER GENERATION

-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Seminoe Power Plant													
Turbine Release	kaf	32.7	31.6	32.6	32.7	30.5	80.0	107.1	178.3	181.7	107.6	61.5	53.6
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.6	0.0	0.0	0.0
Maximum generation	gwh	33.338	32.329	33.478	33.435	31.239	33.488	32.401	33.385	31.979	32.841	32.943	32.076
Actual generation	gwh	5.690	5.498	5.672	5.659	5.250	13.760	18.302	30.668	31.979	19.153	10.863	9.385
Percent max generation		17.	17.	17.	17.	17.	41.	56.	92.	100.	58.	33.	29.
Average kwh/af		174.	174.	174.	173.	172.	172.	171.	172.	176.	178.	177.	175.
-----													
Kortes Power Plant													
Turbine Release	kaf	32.6	31.6	32.6	32.7	30.5	80.0	107.1	160.5	155.3	107.6	61.5	53.6
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.8	53.0	0.0	0.0	0.0
Maximum generation	gwh	28.346	26.712	27.606	27.606	25.817	27.606	26.712	27.606	26.712	27.606	27.606	26.712
Actual generation	gwh	5.607	5.435	5.607	5.624	5.246	13.760	18.421	27.606	26.712	18.507	10.578	9.219
Percent max generation		20.	20.	20.	20.	20.	50.	69.	100.	100.	67.	38.	35.
Average kwh/af		172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.
-----													
Fremont Canyon													
Turbine Release	kaf	2.3	25.6	26.3	26.3	24.7	45.0	91.2	105.0	149.0	167.8	156.7	54.3
Bypass	kaf	4.6	4.5	4.6	4.6	4.3	4.6	4.5	4.6	4.5	4.6	4.6	4.5
Maximum generation	gwh	46.920	45.511	47.067	47.105	44.112	47.192	45.678	47.253	45.767	47.302	47.240	45.665
Actual generation	gwh	0.638	7.122	7.320	7.326	6.887	12.558	25.464	29.341	41.682	46.938	43.776	15.156
Percent max generation		1.	16.	16.	16.	16.	27.	56.	62.	91.	99.	93.	33.
Average kwh/af		277.	278.	278.	279.	279.	279.	279.	279.	280.	280.	279.	279.
-----													
Alcova Power Plant													
Turbine Release	kaf	30.5	29.8	30.7	30.7	28.8	49.2	71.4	98.6	138.1	153.8	141.5	47.7
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum generation	gwh	27.172	26.588	27.472	27.472	25.704	27.472	26.275	27.552	26.656	27.552	27.552	26.656
Actual generation	gwh	4.211	4.053	4.175	4.175	3.917	6.691	9.853	13.804	19.334	21.532	19.810	6.678
Percent max generation		15.	15.	15.	15.	15.	24.	37.	50.	73.	78.	72.	25.
Average kwh/af		138.	136.	136.	136.	136.	136.	138.	140.	140.	140.	140.	140.
-----													
Glendo Power Plant													
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	29.5	144.4	128.8	229.5	221.4	99.8
Bypass	kaf	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	92.7	54.2	1.5
Maximum generation	gwh	15.653	17.347	19.661	20.752	20.522	23.456	24.684	26.877	26.345	24.797	20.097	14.844
Actual generation	gwh	0.000	0.000	0.000	0.000	0.000	0.000	3.244	16.396	14.740	24.797	20.097	7.205
Percent max generation		0.	0.	0.	0.	0.	0.	13.	61.	56.	100.	100.	49.
Average kwh/af		0.	0.	0.	0.	0.	0.	110.	114.	114.	108.	91.	72.
-----													
Guernsey Power Plant													
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	29.6	53.6	51.8	53.6	53.6	56.1
Bypass	kaf	0.3	0.2	0.3	0.4	0.3	0.3	0.4	100.2	80.2	269.9	221.4	77.9
Maximum generation	gwh	3.180	3.272	3.488	3.579	3.414	3.688	3.604	3.795	3.667	3.795	3.795	3.366
Actual generation	gwh	0.000	0.000	0.000	0.000	0.000	0.000	2.040	3.795	3.667	3.795	3.795	3.366
Percent max generation		0.	0.	0.	0.	0.	0.	57.	100.	100.	100.	100.	100.
Average kwh/af		0.	0.	0.	0.	0.	0.	69.	71.	71.	71.	71.	60.

# Table 16 Reasonable Minimum Operating Plan for Water Year 2016

NPRAOP V1.1K 21-Mar-2003 Run: 1-Oct-2015 11:16

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Based on Minimum Expected April-July inflow: Seminole 346 KAF / Sweetwater 21 KAF / Alcova-Glendo 21 KAF

## NORTH PLATTE RIVER OPERATING PLAN Year Beginning Oct 2016

### HYDROLOGY OPERATIONS

Seminole Reservoir Operations		Initial Content 809.0 Kaf					Operating Limits: Max 1017.3 Kaf, 6357.00 Ft.					Min 31.7 Kaf, 6239.02 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	23.7	22.9	21.6	18.7	21.3	45.2	73.8	117.6	121.4	33.4	19.8	14.1
Total Inflow	cfs	385.	385.	351.	304.	370.	735.	1240.	1913.	2040.	543.	322.	237.
Turbine Release	kaf	32.6	31.6	32.6	32.6	30.5	36.9	59.5	83.0	95.2	92.3	79.9	47.6
Jetflow Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	32.6	31.6	32.6	32.6	30.5	36.9	59.5	83.0	95.2	92.3	79.9	47.6
Total Release	cfs	530.	531.	530.	530.	530.	600.	1000.	1350.	1600.	1501.	1299.	800.
Evaporation	kaf	4.7	2.5	1.4	1.3	1.3	2.8	5.3	5.2	8.6	9.3	7.4	5.1
End-month content	kaf	796.1	787.4	775.7	761.0	751.1*	757.4*	766.7*	792.7*	811.4*	743.8*	677.0*	639.1*
End-month elevation	ft	6345.0	6344.5	6343.8	6342.9	6342.3	6342.7	6343.2	6344.8	6345.9	6341.8	6337.4	6334.8
Kortes Reservoir Operations		Initial Content 4.7 Kaf					Operating Limits: Max 4.8 Kaf, 6142.73 Ft.					Min 1.7 Kaf, 6092.73 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	32.6	31.6	32.6	32.6	30.5	36.9	59.5	83.0	95.2	92.3	79.9	47.6
Total Inflow	cfs	530.	531.	530.	530.	530.	600.	1000.	1350.	1600.	1501.	1299.	800.
Turbine Release	kaf	32.5	31.6	32.6	32.6	30.5	36.9	59.5	83.0	95.2	92.3	79.9	47.6
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	32.5	31.6	32.6	32.6	30.5	36.9	59.5	83.0	95.2	92.3	79.9	47.6
Total Release	cfs	529.	531.	530.	530.	530.	600.	1000.	1350.	1600.	1501.	1299.	800.
Pathfinder Reservoir Operations		Initial Content 758.9 Kaf					Operating Limits: Max 1070.0 Kaf, 5852.48 Ft.					Min 31.4 Kaf, 5746.00 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Sweetwater Inflow	kaf	1.9	2.3	2.2	2.1	1.9	3.8	9.4	6.3	3.9	1.3	0.9	0.7
Kortes-Path Gain	kaf	-0.7	-1.2	-2.6	-2.1	-0.6	3.1	2.8	4.1	-1.5	-1.8	0.3	-1.4
Inflow from Kortes	kaf	32.5	31.6	32.6	32.6	30.5	36.9	59.5	83.0	95.2	92.3	79.9	47.6
Total Inflow	kaf	33.7	32.7	32.2	32.6	31.8	43.8	71.7	93.4	97.6	91.8	81.1	46.9
Total Inflow	cfs	548.	550.	524.	530.	553.	712.	1205.	1519.	1640.	1493.	1319.	788.
Turbine Release	kaf	4.1	27.3	28.2	28.2	26.3	45.0	79.3	147.8	163.6	169.1	169.1	54.3
Jetflow Release	kaf	4.6	4.5	4.6	4.6	4.3	4.6	4.5	4.6	4.7	7.6	8.7	4.5
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	8.7	31.8	32.8	32.8	30.6	49.6	83.8	152.4	168.3	176.7	177.8	58.8
Total Release	cfs	141.	534.	533.	533.	532.	807.	1408.	2479.	2828.	2874.	2892.	988.
Evaporation	kaf	5.1	2.8	1.6	1.5	1.5	3.1	5.8	6.7	9.1	8.9	6.7	4.5
End-month content	kaf	778.8	776.9	774.7	773.0	772.7	763.8	745.9	680.2	600.4	506.6	403.2	386.8
End-month elevation	ft	5838.3	5838.2	5838.1	5838.0	5838.0	5837.5	5836.5	5832.6	5827.5	5820.6	5811.6	5810.0
Alcova Reservoir Operations		Initial Content 180.2 Kaf					Operating Limits: Max 184.4 Kaf, 5500.00 Ft.					Min 145.3 Kaf, 5483.12 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	8.7	31.8	32.8	32.8	30.6	49.6	83.8	152.4	168.3	176.7	177.8	58.8
Total Inflow	cfs	141.	534.	533.	533.	532.	807.	1408.	2479.	2828.	2874.	2892.	988.
Turbine Release	kaf	32.3	31.5	32.6	32.6	30.4	49.2	59.5	141.4	152.9	158.1	158.0	47.7
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Casper Canal Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
Total Release	kaf	32.3	31.5	32.6	32.6	30.4	49.2	59.5	151.4	166.9	175.1	176.4	57.7
Total Release	cfs	525.	529.	530.	530.	529.	800.	1000.	2462.	2805.	2848.	2869.	970.
Evaporation	kaf	0.7	0.3	0.2	0.2	0.2	0.4	0.8	1.0	1.4	1.6	1.4	1.1
End-month content	kaf	155.9*	155.9*	155.9*	155.9*	155.9*	155.9*	179.4*	179.4*	179.4*	179.4*	179.4*	179.4*
End-month elevation	ft	5487.9	5487.9	5487.9	5487.9	5487.9	5487.9	5498.0	5498.0	5498.0	5498.0	5498.0	5498.0

**Table 16 (Continued) Reasonable Minimum Operating Plan for Water Year 2016**

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Based on Minimum Expected April-July inflow: Seminole 346 KAF / Sweetwater 21 KAF / Alcova-Glendo 21 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2016

Gray Reef Reservoir Operations			Initial Content				1.4 Kaf		Operating Limits: Max			1.1 Kaf, 5327.42 Ft.		
									Min			0.0 Kaf, 5306.00 Ft.		
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	32.3	31.5	32.6	32.6	30.4	49.2	59.5	141.4	152.9	158.1	158.0	47.7	
Total Inflow	cfs	525.	529.	530.	530.	529.	800.	1000.	2300.	2570.	2571.	2570.	802.	
Total Release	kaf	32.6	31.5	32.6	32.6	30.4	49.2	59.5	141.4	152.8	158.0	157.9	47.6	
Total Release	cfs	530.	529.	530.	530.	529.	800.	1000.	2300.	2568.	2570.	2568.	800.	
Glendo Reservoir Operations			Initial Content				133.7 Kaf		Operating Limits: Max			789.4 Kaf, 4654.45 Ft.		
									Min			63.2 Kaf, 4573.94 Ft.		
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Alcova-Glendo Gain	kaf	10.3	8.7	6.4	6.4	8.9	13.3	10.8	16.3	-1.6	-4.3	-1.4	9.5	
Infl from Gray Reef	kaf	32.6	31.5	32.6	32.6	30.4	49.2	59.5	141.4	152.8	158.0	157.9	47.6	
Total Inflow	kaf	42.9	40.2	39.0	39.0	39.3	62.5	70.3	157.7	151.2	153.7	156.5	57.1	
Total Inflow	cfs	698.	676.	634.	634.	683.	1016.	1181.	2565.	2541.	2500.	2545.	960.	
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	22.1	147.0	101.0	228.2	221.4	103.4	
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Irrigation Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.9	85.6	0.0	
Total Release	kaf	1.5	1.5	1.5	1.5	1.5	1.5	23.6	148.5	102.5	310.6	308.5	104.9	
Total Release	cfs	24.	25.	24.	24.	26.	24.	397.	2415.	1723.	5051.	5017.	1763.	
Evaporation	kaf	1.2	0.8	0.7	0.7	0.8	1.7	3.2	4.5	6.5	6.6	4.3	2.1	
End-month content	kaf	173.9	211.8	248.6	285.4	322.4*	381.7*	425.2*	429.9*	472.1	308.2	150.0*	100.1*	
End-month elevation	ft	4598.7	4604.6	4609.6	4614.2	4618.5	4624.8	4629.1	4629.5	4633.3	4616.9	4594.6	4584.1	
Guernsey Reservoir Operations			Initial Content				5.2 Kaf		Operating Limits: Max			45.6 Kaf, 4419.99 Ft.		
									Min			0.0 Kaf, 4370.00 Ft.		
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Glendo-Guerns Gain	kaf	2.3	1.6	1.2	1.0	1.2	1.3	0.2	2.4	-1.5	-3.5	-1.6	2.0	
Inflow from Glendo	kaf	1.5	1.5	1.5	1.5	1.5	1.5	23.6	148.5	102.5	310.6	308.5	104.9	
Total Inflow	kaf	3.8	3.1	2.7	2.5	2.7	2.8	23.8	150.9	101.0	307.1	306.9	106.9	
Total Inflow	cfs	62.	52.	44.	41.	47.	46.	400.	2454.	1697.	4995.	4991.	1797.	
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	14.6	53.6	51.8	53.6	53.6	56.1	
Seepage	kaf	0.3	0.2	0.3	0.4	0.3	0.3	0.4	1.2	3.0	3.1	2.5	0.3	
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.4	45.2	249.3	249.9	78.0	
Total Release	kaf	0.3	0.2	0.3	0.4	0.3	0.3	15.0	150.2	100.0	306.0	306.0	134.4	
Total Release	cfs	5.	3.	5.	7.	5.	5.	252.	2443.	1681.	4977.	4977.	2259.	
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1.0	1.1	0.9	0.5	
End-month content	kaf	8.5	11.2	13.4	15.3	17.5#	19.7#	28.0*	28.0*	28.0*	28.0*	28.0*	0.0	
End-month elevation	ft	4398.8	4401.4	4403.1	4404.5	4406.0	4407.4	4411.9	4411.9	4411.9	4411.9	4411.9	4370.0	
Physical EOM Cont	kaf	1919.1	1949.1	1974.2	1996.5	2025.5	2084.4	2151.1	2116.1	2097.2	1771.9	1443.5	1311.3	

**Table 16 (Continued) Reasonable Minimum Operating Plan for Water Year 2016**

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Based on Minimum Expected April-July inflow: Seminole 346 KAF / Sweetwater 21 KAF / Alcova-Glendo 21 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2016

OWNERSHIP OPERATIONS

North Platte Pathfinder

Initial Ownership 610.3 Kaf, Accrued this water year: 74.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	21.0	21.8	19.8	17.4	21.2	49.2	80.3	7.3	10.0	0.0	0.0	0.0
Evaporation	kaf	3.9	2.2	1.4	1.3	1.4	2.9	5.7	7.1	10.7	11.3	7.3	3.1
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	226.8	283.0	105.5
End-month Ownership	kaf	631.3	653.1	672.9	690.3	711.5	760.7	841.0	848.3	858.3	620.2	329.9	221.3

North Platte Guernsey

Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	0.0	0.0	7.3	7.0	9.8	14.2	0.0	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.0	0.0	0.3	0.4	0.3	0.4	0.3	0.3	0.5	0.5	0.0	0.0
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.7	0.0	0.0
End-month Ownership	kaf	0.0	0.0	7.3	14.3	24.1	38.3	38.0	37.7	37.2	0.0	0.0	0.0

Inland Lakes

Initial Ownership 0.0 Kaf, Accrued this water year: 15.8 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	12.3	10.1	0.0	0.0	0.0	0.0	10.8	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.3	0.2	0.0	0.0	0.0	0.1	0.2	0.2	0.0	0.0	0.0	0.0
Trnsfr fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	15.0	17.9	0.0	0.0	0.0	0.0
End-month Ownership	kaf	12.3	22.4	22.4	22.4	22.4	22.3	18.1	0.0	0.0	0.0	0.0	0.0

Kendrick

Initial Ownership 1105.2 Kaf, Accrued this water year: 0.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Evaporation	kaf	6.9	3.8	2.3	2.2	2.2	4.5	8.1	9.0	13.3	13.5	11.7	9.0
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
End-month Ownership	kaf	1098.3	1094.5	1092.2	1090.0	1087.8	1083.3	1075.2	1056.2	1028.9	998.4	968.3	949.3

Glendo Unit

Initial Ownership 152.8 Kaf, Accrued this water year: 0.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Accrual	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Evaporation	kaf	0.9	0.5	0.3	0.3	0.3	0.6	1.1	1.3	1.9	1.9	1.6	1.2
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	5.0	4.0
End-month Ownership	kaf	151.9	151.4	151.1	150.8	150.5	149.9	148.8	147.5	145.6	137.7	131.1	125.9

Re-regulation

Initial Ownership 12.0 Kaf, Accrued this water year: 0.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Accrual	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.4	0.0	0.0
End-month total	kaf	11.9	11.9	11.9	11.9	11.9	11.9	11.8	11.7	11.6	0.0	0.0	0.0

**Table 16 (Continued) Reasonable Minimum Operating Plan for Water Year 2016**

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Based on Minimum Expected April-July inflow: Seminoe 346 KAF / Sweetwater 21 KAF / Alcova-Glendo 21 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2016

City of Cheyenne		Initial Ownership 5.7 Kaf,											
-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
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
Evaporation	kaf	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.6	0.5	0.0	0.0
Ownership	kaf	6.4	8.9	9.5	9.9	10.4	11.1	11.3	7.8	8.8	9.3	9.9	10.5
PacifiCorp		Initial Ownership 2.0 Kaf,											
-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ownership	kaf	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Other		Initial Ownership 5.1 Kaf,											
-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Evaporation	kaf	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.9	0.0
Ownership	kaf	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.8	4.3	2.3	2.3
IRRIGATION DELIVERY													
-----													
Kendrick (Casper Canal)		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Requested	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
Delivered	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
Kendrick (River)		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Requested	kaf	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Guernsey Deliveries		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
North Platte Req	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	132.3	98.0	300.0	301.0	130.4
Glendo Req	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	6.0	5.0	4.0
Inland Lakes Req	kaf	0.0	0.0	0.0	0.0	0.0	0.0	15.0	17.9	0.0	0.0	0.0	0.0
Total Requirement	kaf	0.0	0.0	0.0	0.0	0.0	0.0	15.0	150.2	100.0	306.0	306.0	134.4
Seepage	kaf	0.3	0.2	0.3	0.4	0.3	0.3	0.4	1.2	3.0	3.1	2.5	0.3
Actual Release	kaf	0.3	0.2	0.3	0.4	0.3	0.3	15.0	150.2	100.0	306.0	306.0	134.4

**Table 16 (Continued) Reasonable Minimum Operating Plan for Water Year 2016**

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Based on Minimum Expected April-July inflow: Seminole 346 KAF / Sweetwater 21 KAF / Alcova-Glendo 21 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2016

POWER GENERATION

-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Seminole Power Plant													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	32.6	31.6	32.6	32.6	30.5	36.9	59.5	83.0	95.2	92.3	79.9	47.6
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum generation	gwh	33.373	32.394	33.416	33.454	31.321	33.488	32.405	33.415	32.312	33.410	33.486	31.636
Actual generation	gwh	5.672	5.492	5.633	5.607	5.246	6.347	10.234	14.326	16.565	15.912	13.561	7.926
Percent max generation		17.	17.	17.	17.	17.	19.	32.	43.	51.	48.	40.	25.
Average kwh/af		174.	174.	173.	172.	172.	172.	172.	173.	174.	172.	170.	167.
Kortes Power Plant													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	32.5	31.6	32.6	32.6	30.5	36.9	59.5	83.0	95.2	92.3	79.9	47.6
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum generation	gwh	28.346	26.712	27.606	27.606	25.817	27.606	26.712	27.606	26.712	27.606	27.606	26.712
Actual generation	gwh	5.590	5.435	5.607	5.607	5.246	6.347	10.234	14.276	16.374	15.876	13.743	8.187
Percent max generation		20.	20.	20.	20.	20.	23.	38.	52.	61.	58.	50.	31.
Average kwh/af		172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.
Fremont Canyon													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	4.1	27.3	28.2	28.2	26.3	45.0	79.3	147.8	163.6	169.1	169.1	54.3
Bypass	kaf	4.6	4.5	4.6	4.6	4.3	4.6	4.5	4.6	4.7	7.6	8.7	4.5
Maximum generation	gwh	46.898	45.451	46.961	46.943	43.909	46.893	45.250	46.395	44.225	44.684	43.517	16.545
Actual generation	gwh	1.137	7.584	7.831	7.828	7.300	12.479	21.934	40.551	44.225	44.684	43.517	13.716
Percent max generation		2.	17.	17.	17.	17.	27.	48.	87.	100.	100.	100.	83.
Average kwh/af		277.	278.	278.	278.	278.	277.	277.	274.	270.	264.	257.	253.
Alcova Power Plant													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	32.3	31.5	32.6	32.6	30.4	49.2	59.5	141.4	152.9	158.1	158.0	47.7
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum generation	gwh	27.172	26.588	27.472	27.472	25.704	27.472	26.275	27.552	26.656	27.552	27.552	26.656
Actual generation	gwh	4.460	4.284	4.434	4.434	4.134	6.691	8.211	19.796	21.406	22.134	22.120	6.678
Percent max generation		16.	16.	16.	16.	16.	24.	31.	72.	80.	80.	80.	25.
Average kwh/af		138.	136.	136.	136.	136.	136.	138.	140.	140.	140.	140.	140.
Glendo Power Plant													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	22.1	147.0	101.0	228.2	221.4	103.4
Bypass	kaf	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	82.4	87.1	1.5
Maximum generation	gwh	15.660	17.361	19.691	20.811	20.518	23.344	23.998	25.489	25.328	24.422	19.658	13.579
Actual generation	gwh	0.000	0.000	0.000	0.000	0.000	0.000	2.388	16.157	11.284	24.422	19.658	6.940
Percent max generation		0.	0.	0.	0.	0.	0.	10.	63.	45.	100.	100.	51.
Average kwh/af		0.	0.	0.	0.	0.	0.	108.	110.	112.	107.	89.	67.
Guernsey Power Plant													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	14.6	53.6	51.8	53.6	53.6	56.1
Bypass	kaf	0.3	0.2	0.3	0.4	0.3	0.3	0.4	96.6	48.2	252.4	252.4	78.3
Maximum generation	gwh	3.146	3.214	3.422	3.494	3.332	3.637	3.586	3.795	3.667	3.795	3.795	3.366
Actual generation	gwh	0.000	0.000	0.000	0.000	0.000	0.000	0.997	3.795	3.667	3.795	3.795	3.366
Percent max generation		0.	0.	0.	0.	0.	0.	28.	100.	100.	100.	100.	100.
Average kwh/af		0.	0.	0.	0.	0.	0.	68.	71.	71.	71.	71.	60.

# Table 17 Reasonable Maximum Operating Plan for Water Year 2016

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Based on Maximum Expected April-July inflow: Seminoe 1,312 KAF / Sweetwater 118 KAF / Alcova-Glendo 286 KAF

## NORTH PLATTE RIVER OPERATING PLAN Year Beginning Oct 2015

### HYDROLOGY OPERATIONS

Seminoe Reservoir Operations		Initial Content 809.0 Kaf					Operating Limits: Max 1017.3 Kaf, 6357.00 Ft.					Min 31.7 Kaf, 6239.02 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	36.4	33.7	28.1	26.2	28.8	60.7	153.0	378.2	565.2	215.9	60.2	35.9
Total Inflow	cfs	592.	566.	457.	426.	501.	987.	2571.	6151.	9498.	3511.	979.	603.
Turbine Release	kaf	32.6	31.4	32.5	32.5	30.4	190.6	188.7	195.8	182.6	178.4	152.5	53.6
Jetflow Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	49.9	50.3	85.7	50.0	0.0	0.0
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	32.6	31.4	32.5	32.5	30.4	190.6	238.6	246.1	268.3	228.4	152.5	53.6
Total Release	cfs	530.	528.	529.	529.	529.	3100.	4010.	4002.	4509.	3715.	2480.	901.
Evaporation	kaf	4.8	2.6	1.4	1.4	1.4	2.7	4.4	4.4	9.0	11.1	9.1	6.3
End-month content	kaf	808.7	810.9	805.8	798.6	796.2#	664.4*	574.7*	699.0*	988.0#	965.0*	864.3*	841.0*
End-month elevation	ft	6345.8	6345.9	6345.6	6345.2	6345.0	6336.6	6330.0	6338.9	6355.5	6354.4	6349.0	6347.7
Kortes Reservoir Operations		Initial Content 4.7 Kaf					Operating Limits: Max 4.8 Kaf, 6142.73 Ft.					Min 1.7 Kaf, 6092.73 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	32.6	31.4	32.5	32.5	30.4	190.6	238.6	246.1	268.3	228.4	152.5	53.6
Total Inflow	cfs	530.	528.	529.	529.	529.	3100.	4010.	4002.	4509.	3715.	2480.	901.
Turbine Release	kaf	32.5	31.4	32.5	32.5	30.4	160.5	155.3	160.5	155.3	160.5	152.5	53.6
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	30.1	83.3	85.6	113.0	67.9	0.0	0.0
Total Release	kaf	32.5	31.4	32.5	32.5	30.4	190.6	238.6	246.1	268.3	228.4	152.5	53.6
Total Release	cfs	529.	528.	529.	529.	529.	3100.	4010.	4002.	4509.	3715.	2480.	901.
Pathfinder Reservoir Operations		Initial Content 758.9 Kaf					Operating Limits: Max 1070.0 Kaf, 5852.48 Ft.					Min 31.4 Kaf, 5746.00 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Sweetwater Inflow	kaf	3.4	3.5	2.7	2.4	2.6	5.9	17.8	43.5	43.4	13.2	4.7	2.9
Kortes-Path Gain	kaf	4.1	2.2	2.2	4.4	6.0	8.1	10.6	16.5	10.6	8.2	6.4	7.0
Inflow from Kortes	kaf	32.5	31.4	32.5	32.5	30.4	190.6	238.6	246.1	268.3	228.4	152.5	53.6
Total Inflow	kaf	40.0	37.1	37.4	39.3	39.0	204.6	267.0	306.1	322.3	249.8	163.6	63.5
Total Inflow	cfs	651.	623.	608.	639.	678.	3327.	4487.	4978.	5416.	4063.	2661.	1067.
Turbine Release	kaf	2.2	25.6	26.3	26.3	24.7	113.7	163.6	169.1	163.6	169.1	169.1	154.3
Jetflow Release	kaf	4.6	4.5	4.6	4.6	4.3	4.6	10.2	61.6	122.8	122.0	51.5	4.5
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Release	kaf	6.8	30.1	30.9	30.9	29.0	118.3	173.8	230.7	286.4	291.1	220.6	158.8
Total Release	cfs	111.	506.	503.	503.	504.	1924.	2921.	3752.	4813.	4734.	3588.	2669.
Evaporation	kaf	5.1	2.8	1.6	1.5	1.6	3.4	6.8	8.7	13.3	14.7	12.5	9.0
End-month content	kaf	787.0	791.2	796.1	803.0	811.4	894.3	980.7	1047.4	1070.0	1014.0	944.5	840.2
End-month elevation	ft	5838.8	5839.0	5839.3	5839.6	5840.1	5844.3	5848.5	5851.5	5852.5	5850.0	5846.8	5841.6
Alcova Reservoir Operations		Initial Content 180.2 Kaf					Operating Limits: Max 184.4 Kaf, 5500.00 Ft.					Min 100.0 Kaf, 5459.92 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	6.8	30.1	30.9	30.9	29.0	118.3	173.8	230.7	286.4	291.1	220.6	158.8
Total Inflow	cfs	111.	506.	503.	503.	504.	1924.	2921.	3752.	4813.	4734.	3588.	2669.
Turbine Release	kaf	30.4	29.8	30.7	30.7	28.8	117.9	149.5	196.8	190.4	196.8	196.8	147.7
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.9	80.6	75.7	4.0	0.0
Casper Canal Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
Total Release	kaf	30.4	29.8	30.7	30.7	28.8	117.9	149.5	229.7	285.0	289.5	219.2	157.7
Total Release	cfs	494.	501.	499.	499.	501.	1917.	2512.	3736.	4790.	4708.	3565.	2650.
Evaporation	kaf	0.7	0.3	0.2	0.2	0.2	0.4	0.8	1.0	1.4	1.6	1.4	1.1
End-month content	kaf	155.9*	155.9*	155.9*	155.9*	155.9*	155.9*	179.4*	179.4*	179.4*	179.4*	179.4*	179.4*
End-month elevation	ft	5487.9	5487.9	5487.9	5487.9	5487.9	5487.9	5498.0	5498.0	5498.0	5498.0	5498.0	5498.0

**Table 17 (Continued) Reasonable Maximum Operating Plan for Water Year 2016**

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Based on Maximum Expected April-July inflow: Seminole 1,312 KAF / Sweetwater 118 KAF / Alcova-Glendo 286 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2015

Gray Reef Reservoir Operations				Initial Content		1.4 Kaf		Operating Limits: Max Min			1.1 Kaf, 5327.42 Ft.				
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	30.4	29.8	30.7	30.7	28.8	117.9	149.5	219.7	271.0	272.5	200.8	147.7		
Total Inflow	cfs	494.	501.	499.	499.	501.	1917.	2512.	3573.	4554.	4432.	3266.	2482.		
Total Release	kaf	30.7	29.8	30.7	30.7	28.8	117.9	149.5	219.7	270.9	272.4	200.7	147.6		
Total Release	cfs	499.	501.	499.	499.	501.	1917.	2512.	3573.	4553.	4430.	3264.	2480.		
Glendo Reservoir Operations				Initial Content		133.7 Kaf		Operating Limits: Max Min			789.4 Kaf, 4654.45 Ft.				
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Alcova-Glendo Gain	kaf	15.1	13.4	5.8	12.6	12.1	17.0	51.6	161.5	64.3	8.6	7.8	13.2		
Infl from Gray Reef	kaf	30.7	29.8	30.7	30.7	28.8	117.9	149.5	219.7	270.9	272.4	200.7	147.6		
Total Inflow	kaf	45.8	43.2	36.5	43.3	40.9	134.9	201.1	381.2	335.2	281.0	208.5	160.8		
Total Inflow	cfs	745.	726.	594.	704.	711.	2194.	3380.	6200.	5633.	4570.	3391.	2702.		
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	55.4	173.9	234.5	229.9	231.5	221.4	210.6		
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Irrigation Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.9	77.8	177.6	115.4	20.3		
Total Release	kaf	1.5	1.5	1.5	1.5	1.5	56.9	175.4	331.9	309.2	410.6	338.3	232.4		
Total Release	cfs	24.	25.	24.	24.	26.	925.	2948.	5398.	5196.	6678.	5502.	3906.		
Evaporation	kaf	1.2	0.8	0.7	0.7	0.8	1.8	3.2	4.8	6.9	7.0	4.9	2.8		
End-month content	kaf	176.8	217.7	252.0	293.1	331.7	407.9*	430.4*	474.9*	492.0*	355.0*	220.3*	145.9*		
End-month elevation	ft	4599.2	4605.4	4610.0	4615.1	4619.6	4627.4	4629.6	4633.6	4635.0	4622.1	4605.8	4593.9		
Guernsey Reservoir Operations				Initial Content		5.2 Kaf		Operating Limits: Max Min			42.0 Kaf, 4418.46 Ft.				
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Glendo-Guerns Gain	kaf	2.9	1.6	1.3	1.6	1.0	0.8	6.4	28.8	21.3	5.8	0.4	4.2		
Inflow from Glendo	kaf	1.5	1.5	1.5	1.5	1.5	56.9	175.4	331.9	309.2	410.6	338.3	232.4		
Total Inflow	kaf	4.4	3.1	2.8	3.1	2.5	57.7	181.8	360.7	330.5	416.4	338.7	236.6		
Total Inflow	cfs	72.	52.	46.	50.	43.	938.	3055.	5866.	5554.	6772.	5508.	3976.		
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	59.6	56.0	53.6	51.8	53.6	53.6	56.1		
Seepage	kaf	0.3	0.3	0.2	0.4	0.3	0.3	0.4	1.2	3.0	3.1	2.5	0.3		
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	15.1	97.9	305.2	274.7	359.3	281.7	207.6		
Total Release	kaf	0.3	0.3	0.2	0.4	0.3	75.0	154.3	360.0	329.5	416.0	337.8	264.0		
Total Release	cfs	5.	5.	3.	7.	5.	1220.	2593.	5855.	5537.	6766.	5494.	4437.		
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1.0	0.4	0.9	0.6		
End-month content	kaf	9.1#	11.7#	14.1#	16.6#	18.6#	1.0*	28.0*	28.0*	28.0*	28.0*	28.0*	0.0		
End-month elevation	ft	4399.4	4401.8	4403.7	4405.4	4406.7	4384.1	4411.9	4411.9	4411.9	4411.9	4411.9	4370.0		
Physical EOM Cont	kaf	1943.4	1993.3	2029.8	2073.1	2119.7	2129.4	2199.1	2434.6	2763.3	2547.3	2242.4	2012.4		



**Table 17 (Continued) Reasonable Maximum Operating Plan for Water Year 2016**

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Based on Maximum Expected April-July inflow: Seminole 1,312 KAF / Sweetwater 118 KAF / Alcova-Glendo 286 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2015

OWNERSHIP OPERATIONS

North Platte Pathfinder

Initial Ownership 610.3 Kaf, Accrued this water year: 74.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	40.0	37.2	31.6	31.6	35.9	71.5	175.1	36.8	0.0	0.0	0.0	0.0
Evaporation	kaf	3.9	2.2	1.4	1.4	1.5	3.2	6.3	9.2	13.9	13.3	11.8	8.3
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.9	196.8
End-month Ownership	kaf	650.3	687.5	719.1	750.7	786.6	858.1	1033.2	1070.0	1056.1	1042.8	930.1	725.0

North Platte Guernsey

Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	0.0	0.0	6.9	13.8	12.7	12.2	0.0	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.0	0.0	0.2	0.4	0.4	0.1	0.3	0.4	0.6	0.6	0.5	0.0
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.2	0.0
End-month Ownership	kaf	0.0	0.0	6.9	20.7	33.4	45.6	45.3	44.9	44.3	43.7	0.0	0.0

Inland Lakes

Initial Ownership 0.0 Kaf, Accrued this water year: 15.8 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	17.7	14.6	0.0	0.0	0.0	0.0	13.7	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.3	0.4	0.1	0.1	0.1	0.2	0.3	0.1	0.0	0.0	0.0	0.0
Trnsfr fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	30.0	15.4	0.0	0.0	0.0	0.0
End-month Ownership	kaf	17.7	32.3	32.2	32.1	32.0	31.8	15.5	0.0	0.0	0.0	0.0	0.0

Kendrick

Initial Ownership 1105.2 Kaf, Accrued this water year: 0.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	125.9	0.0	0.0	0.0	0.0
Evaporation	kaf	7.0	3.8	2.3	2.2	2.2	4.4	7.5	8.2	14.8	15.0	13.3	10.1
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.4	10.0
End-month Ownership	kaf	1098.2	1094.4	1092.1	1089.9	1087.7	1083.3	1075.8	1201.7	1186.9	1171.9	1140.2	1120.1

Glendo Unit

Initial Ownership 152.8 Kaf, Accrued this water year: 0.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Accrual	kaf	0.0	0.0	0.0	0.0	0.0	5.5	16.3	0.0	0.0	0.0	0.0	0.0
Evaporation	kaf	0.9	0.5	0.3	0.3	0.3	0.6	1.2	1.5	2.2	2.1	1.9	1.4
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	4.0
End-month Ownership	kaf	151.9	151.4	151.1	150.8	150.5	155.4	170.5	169.0	166.8	164.7	157.8	152.4

Re-regulation

Initial Ownership 12.0 Kaf, Accrued this water year: 0.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Accrual	kaf	0.0	0.0	0.0	0.0	0.0	0.0	27.7	300.4	642.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	1.2	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	75.0	124.3	206.6	280.7	181.3	109.2	0.0
End-month total	kaf	11.9	11.9	11.9	11.9	11.9	-63.1	-159.7	-65.9	295.4	110.4	0.0	0.0

**Table 17 (Continued) Reasonable Maximum Operating Plan for Water Year 2016**

NPRAOP V1.1K 21-Mar-2003 Run: 2-Oct-2015 8:59

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Based on Maximum Expected April-July inflow: Seminole 1,312 KAF / Sweetwater 118 KAF / Alcova-Glendo 286 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2015

City of Cheyenne		Initial Ownership 5.7 Kaf,											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
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
Evaporation	kaf	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.6	0.5	0.0	0.0
Ownership	kaf	6.4	8.9	9.6	10.1	10.7	11.4	11.6	8.1	9.1	9.6	10.2	10.8
PacifiCorp		Initial Ownership 2.0 Kaf,											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ownership	kaf	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Other		Initial Ownership 5.1 Kaf,											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Inflow	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Evaporation	kaf	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.4	0.0	0.0
Ownership	kaf	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.8	2.7	2.2	2.1	2.1
IRRIGATION DELIVERY													
Kendrick (Casper Canal)		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Requested	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
Delivered	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.0	17.0	18.4	10.0
Kendrick (River)		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Requested	kaf	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Guernsey Deliveries		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
North Platte Req	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	138.0	46.8	380.0	280.0	260.0
Glendo Req	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	6.0	5.0	4.0
Inland Lakes Req	kaf	0.0	0.0	0.0	0.0	0.0	0.0	30.0	15.4	0.0	0.0	0.0	0.0
Total Requirement	kaf	0.0	0.0	0.0	0.0	0.0	0.0	30.0	153.4	48.8	386.0	285.0	264.0
Seepage	kaf	0.3	0.3	0.2	0.4	0.3	0.3	0.4	1.2	3.0	3.1	2.5	0.3
Actual Release	kaf	0.3	0.3	0.2	0.4	0.3	75.0	154.3	360.0	329.5	416.0	337.8	264.0
Spill	kaf	0.0	0.0	0.0	0.0	0.0	74.7	124.3	206.6	280.7	30.0	52.8	0.0

**Table 17 (Continued) Reasonable Maximum Operating Plan for Water Year 2016**

NPRAOP V1.1K 21-Mar-2003 Run: 2-Oct-2015 8:59

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Based on Maximum Expected April-July inflow: Seminole 1,312 KAF / Sweetwater 118 KAF / Alcova-Glendo 286 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2015

POWER GENERATION

-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Seminole Power Plant													
Turbine Release	kaf	32.6	31.4	32.5	32.5	30.4	190.6	188.7	195.8	182.6	178.4	152.5	53.6
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	0.0	49.9	50.3	85.7	50.0	0.0	0.0
Maximum generation	gwh	33.286	32.207	33.304	33.391	31.285	33.473	30.947	32.307	32.121	32.112	32.610	32.014
Actual generation	gwh	5.672	5.464	5.655	5.655	5.290	32.402	30.947	32.307	32.121	32.112	27.145	9.434
Percent max generation		17.	17.	17.	17.	17.	97.	100.	100.	100.	100.	83.	29.
Average kwh/af		174.	174.	174.	174.	174.	170.	164.	165.	176.	180.	178.	176.
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Kortes Power Plant													
Turbine Release	kaf	32.5	31.4	32.5	32.5	30.4	160.5	155.3	160.5	155.3	160.5	152.5	53.6
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	30.1	83.3	85.6	113.0	67.9	0.0	0.0
Maximum generation	gwh	28.346	26.712	27.606	27.606	25.817	27.606	26.712	27.606	26.712	27.606	27.606	26.712
Actual generation	gwh	5.590	5.401	5.590	5.590	5.229	27.606	26.712	27.606	26.712	27.606	26.230	9.219
Percent max generation		20.	20.	20.	20.	20.	100.	100.	100.	100.	100.	95.	35.
Average kwh/af		172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Fremont Canyon													
Turbine Release	kaf	2.2	25.6	26.3	26.3	24.7	113.7	163.6	169.1	163.6	169.1	169.1	154.3
Bypass	kaf	4.6	4.5	4.6	4.6	4.3	4.6	10.2	61.6	122.8	122.0	51.5	4.5
Maximum generation	gwh	46.935	45.549	47.122	47.175	44.143	47.217	45.740	47.332	45.808	47.348	47.307	45.708
Actual generation	gwh	0.611	7.128	7.329	7.337	6.892	31.748	45.740	47.332	45.808	47.348	47.307	43.110
Percent max generation		1.	16.	16.	16.	16.	67.	100.	100.	100.	100.	100.	94.
Average kwh/af		278.	278.	279.	279.	279.	279.	280.	280.	280.	280.	280.	279.
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Alcova Power Plant													
Turbine Release	kaf	30.4	29.8	30.7	30.7	28.8	117.9	149.5	196.8	190.4	196.8	196.8	147.7
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.9	80.6	75.7	4.0	0.0
Maximum generation	gwh	27.172	26.588	27.472	27.472	25.704	27.472	26.275	27.552	26.656	27.552	27.552	26.656
Actual generation	gwh	4.197	4.053	4.175	4.175	3.917	16.034	20.631	27.552	26.656	27.552	27.552	20.678
Percent max generation		15.	15.	15.	15.	15.	58.	79.	100.	100.	100.	100.	78.
Average kwh/af		138.	136.	136.	136.	136.	136.	138.	140.	140.	140.	140.	140.
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Glendo Power Plant													
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	55.4	173.9	234.5	229.9	231.5	221.4	210.6
Bypass	kaf	1.5	1.5	1.5	1.5	1.5	1.5	1.5	97.4	79.3	179.1	116.9	21.8
Maximum generation	gwh	15.742	17.622	19.833	20.980	20.760	23.842	24.431	26.230	26.263	25.373	21.440	16.807
Actual generation	gwh	0.000	0.000	0.000	0.000	0.000	5.842	19.001	26.230	26.263	25.373	21.440	16.807
Percent max generation		0.	0.	0.	0.	0.	25.	78.	100.	100.	100.	100.	100.
Average kwh/af		0.	0.	0.	0.	0.	105.	109.	112.	114.	110.	97.	80.
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Guernsey Power Plant													
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	59.6	56.0	53.6	51.8	53.6	53.6	56.1
Bypass	kaf	0.3	0.3	0.2	0.4	0.3	15.4	98.3	306.4	277.7	362.4	284.2	207.9
Maximum generation	gwh	3.164	3.243	3.440	3.528	3.371	3.314	3.388	3.795	3.667	3.795	3.795	3.366
Actual generation	gwh	0.000	0.000	0.000	0.000	0.000	3.314	3.388	3.795	3.667	3.795	3.795	3.366
Percent max generation		0.	0.	0.	0.	0.	100.	100.	100.	100.	100.	100.	100.
Average kwh/af		0.	0.	0.	0.	0.	56.	61.	71.	71.	71.	71.	60.

## 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** - The amount of water released from a reservoir other than through the powerplant for the 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.

## **Glossary (continued)**

**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** - The 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 in the form of hail, mist, rain, sleet, or snow.

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

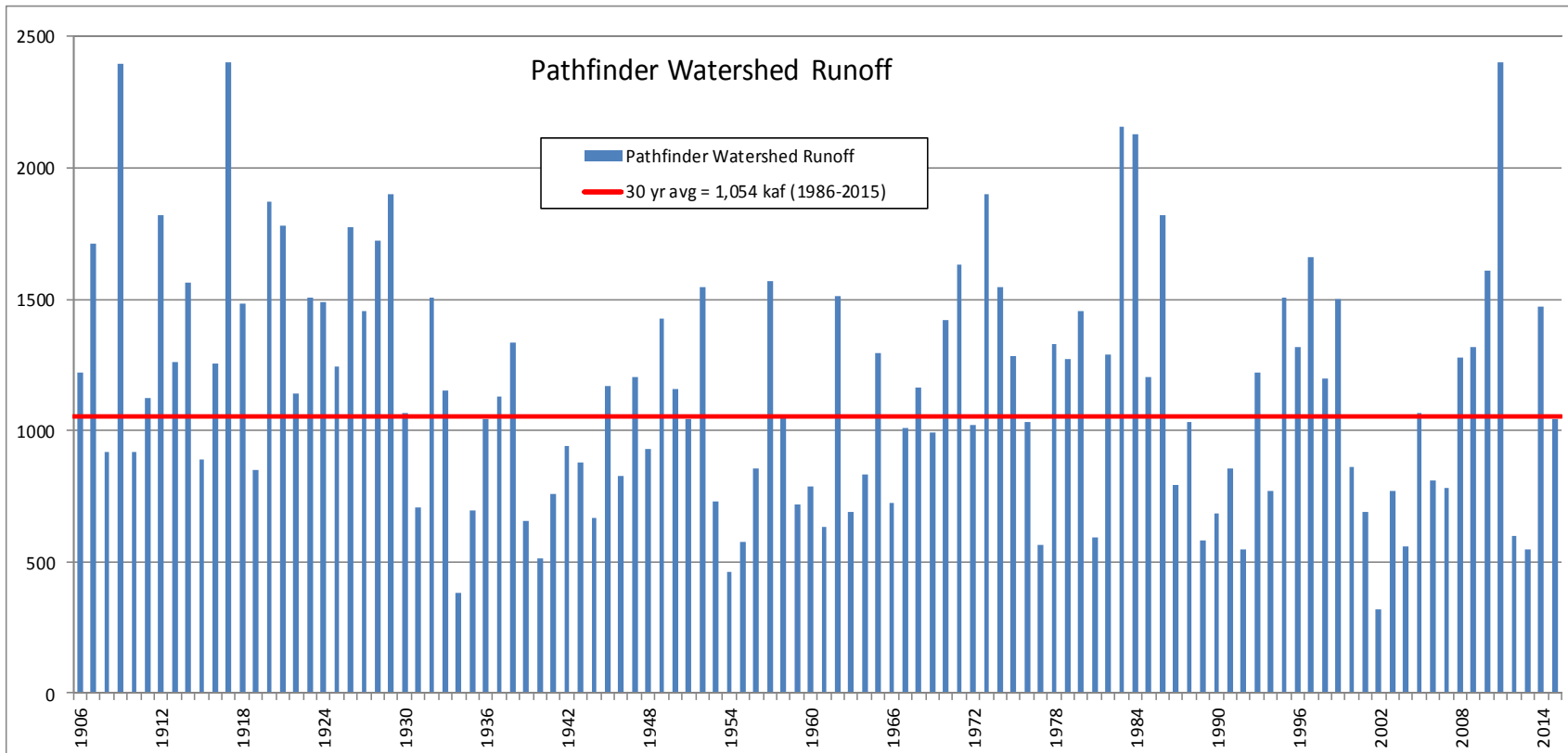
**Silt Run** - The name given to the practice of flushing silt from Guernsey Reservoir into the North Platte River downstream where the silt laden water is diverted by irrigators. The silt tends to settle in the slower moving water of canals and laterals helping to seal the wetted perimeter and reduce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

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



**Figure 20** Pathfinder Watershed Runoff 1906-2015

## Reservoir Data Definitions 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.

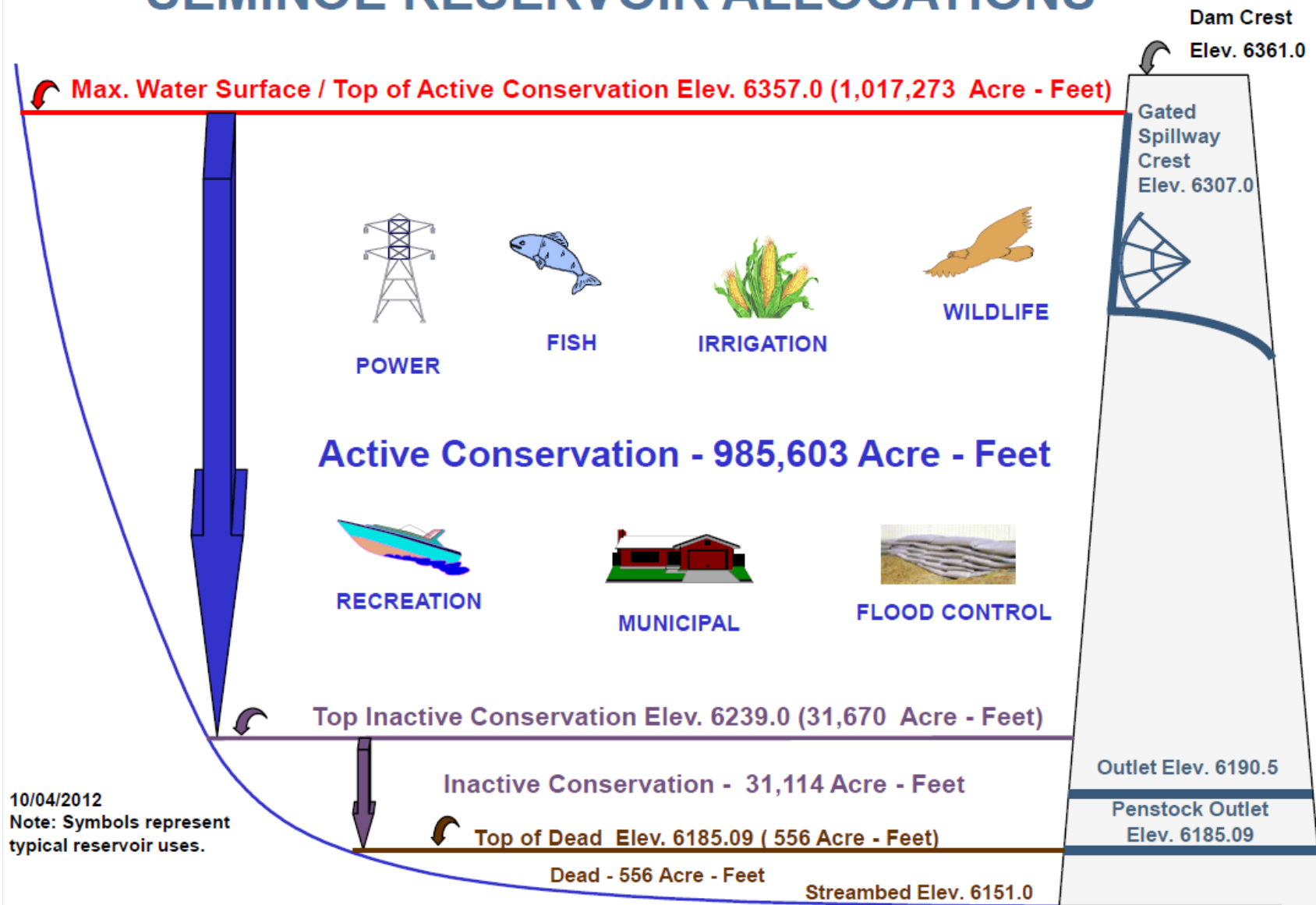
**Exclusive Flood Control Capacity** - The reservoir capacity assigned to the sole purpose of regulating flood inflows to reduce flood damage downstream.

**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.

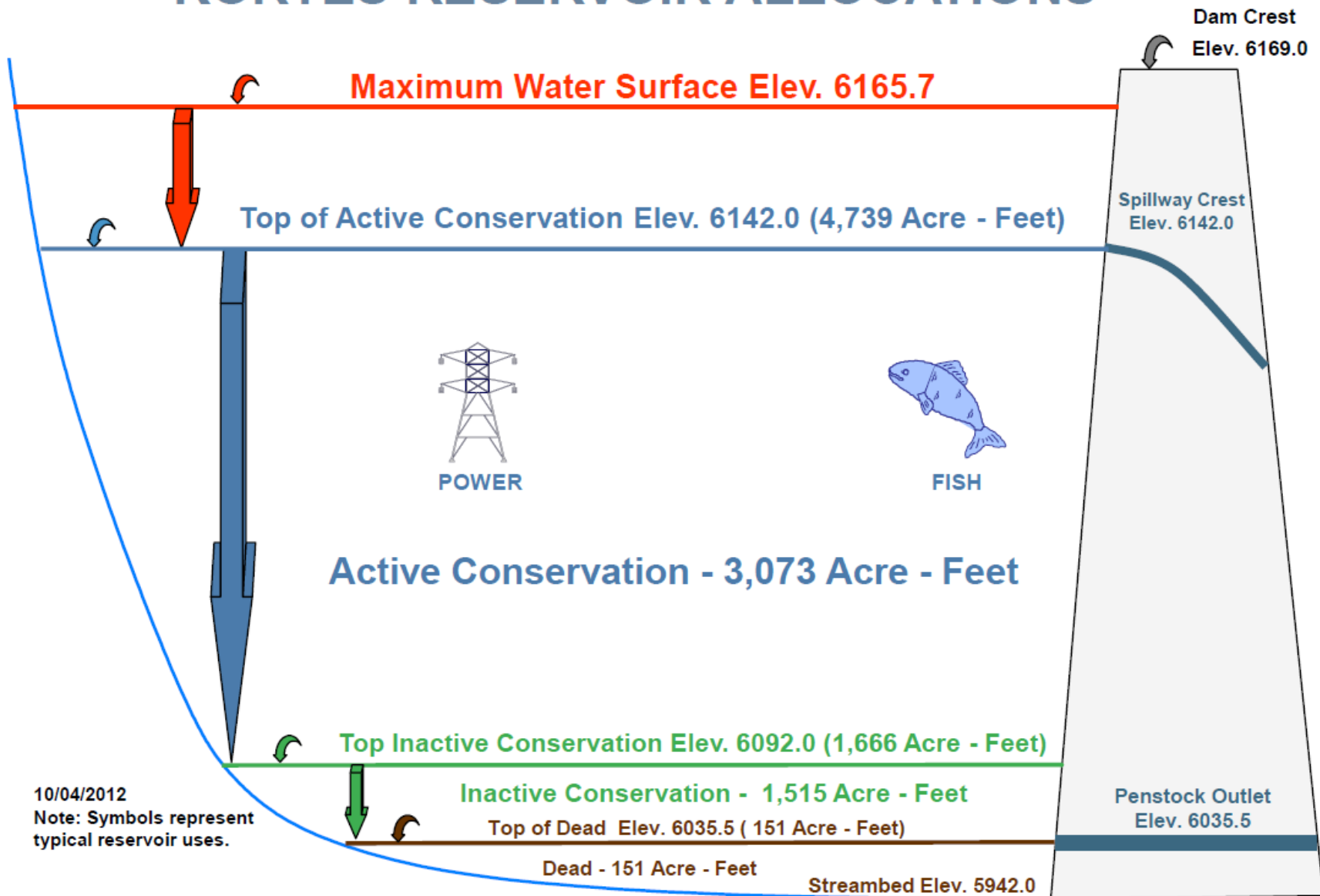
**Active Conservation Capacity** - The reservoir capacity assigned to regulate reservoir inflow for irrigation, power, municipal, and industrial, fish and wildlife, navigation, recreation, water quality, and other purposes. It does not include exclusive flood control or joint use capacity. The active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



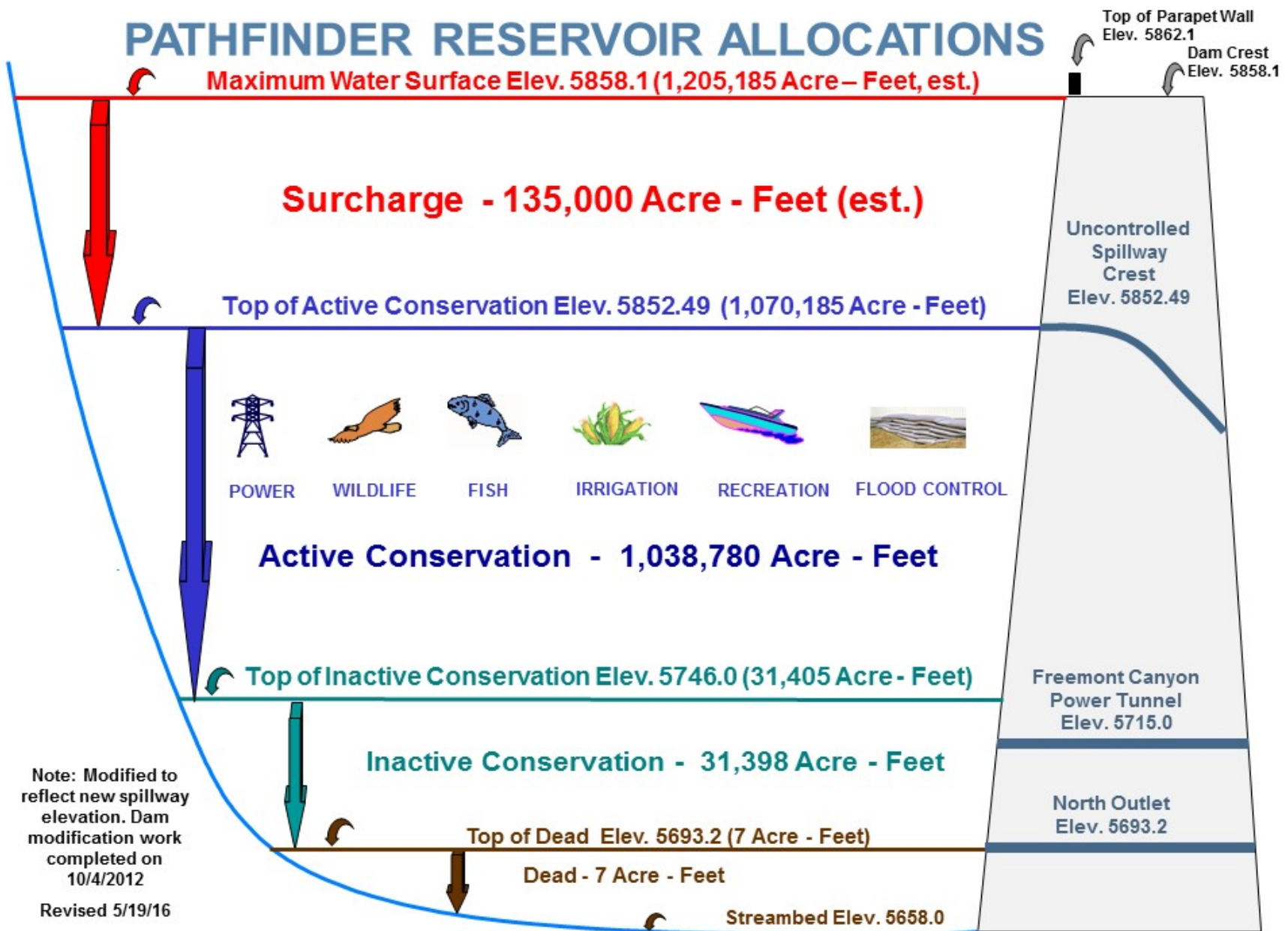
# SEMINOE RESERVOIR ALLOCATIONS



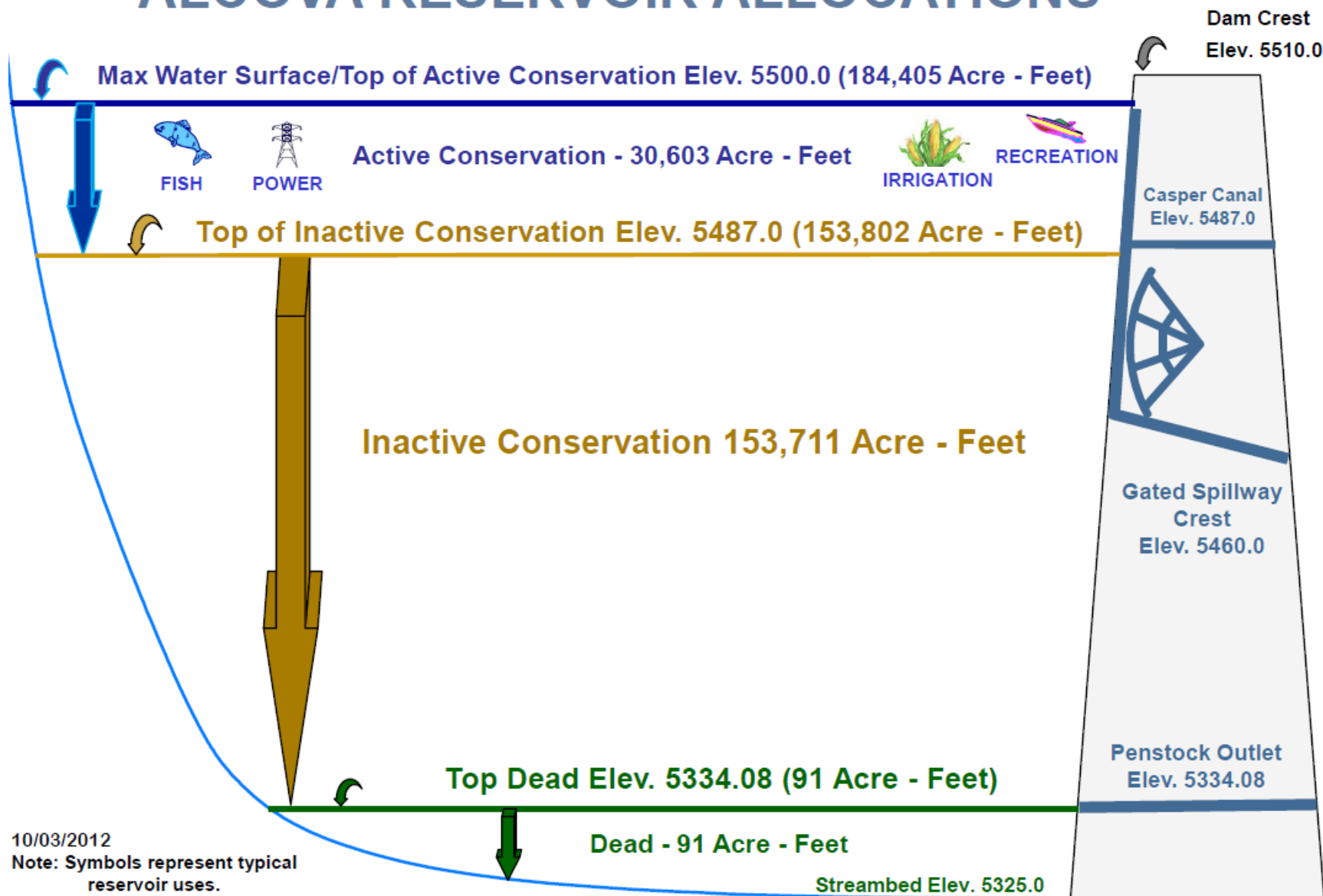
# KORTES RESERVOIR ALLOCATIONS



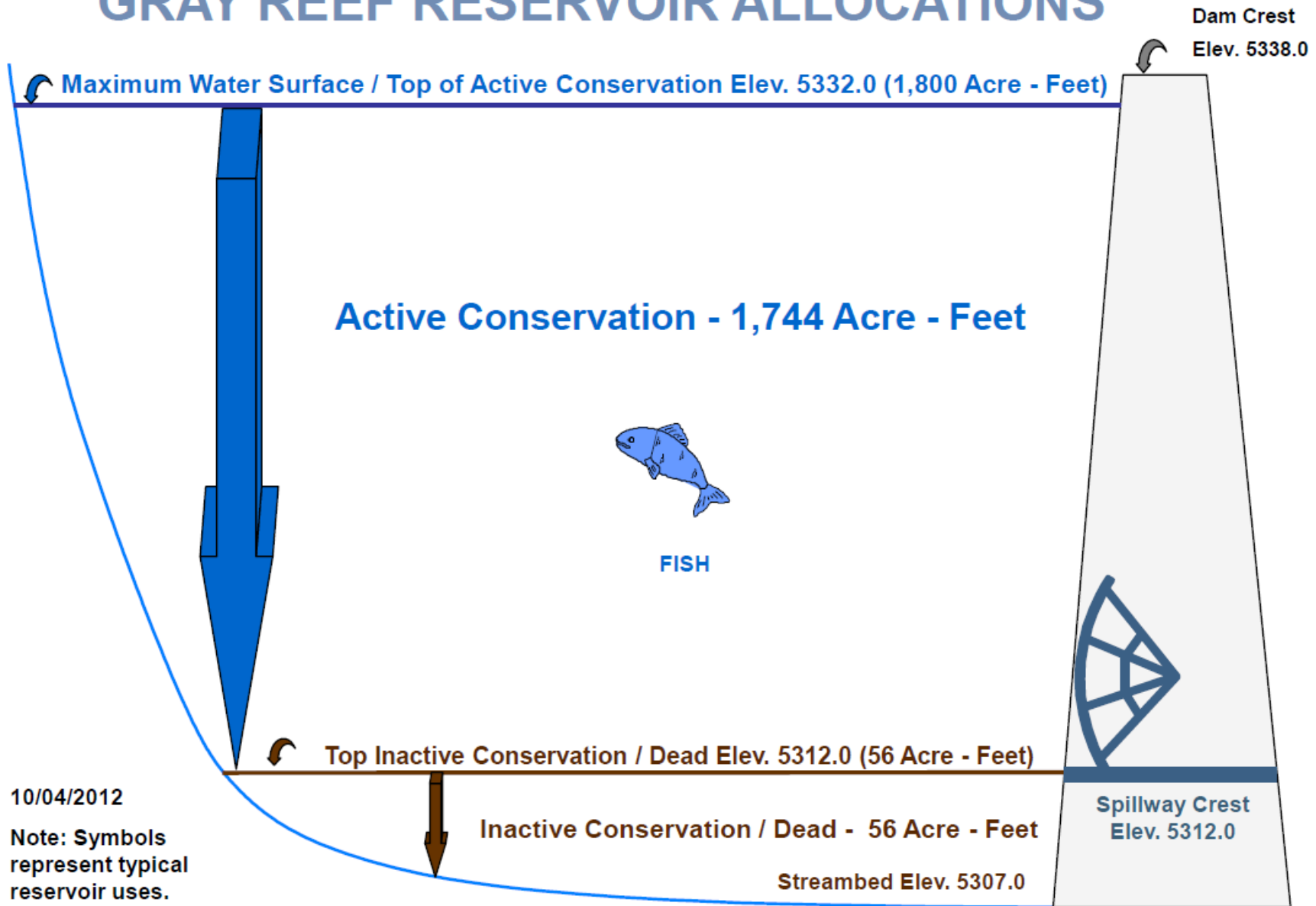
# PATHFINDER RESERVOIR ALLOCATIONS



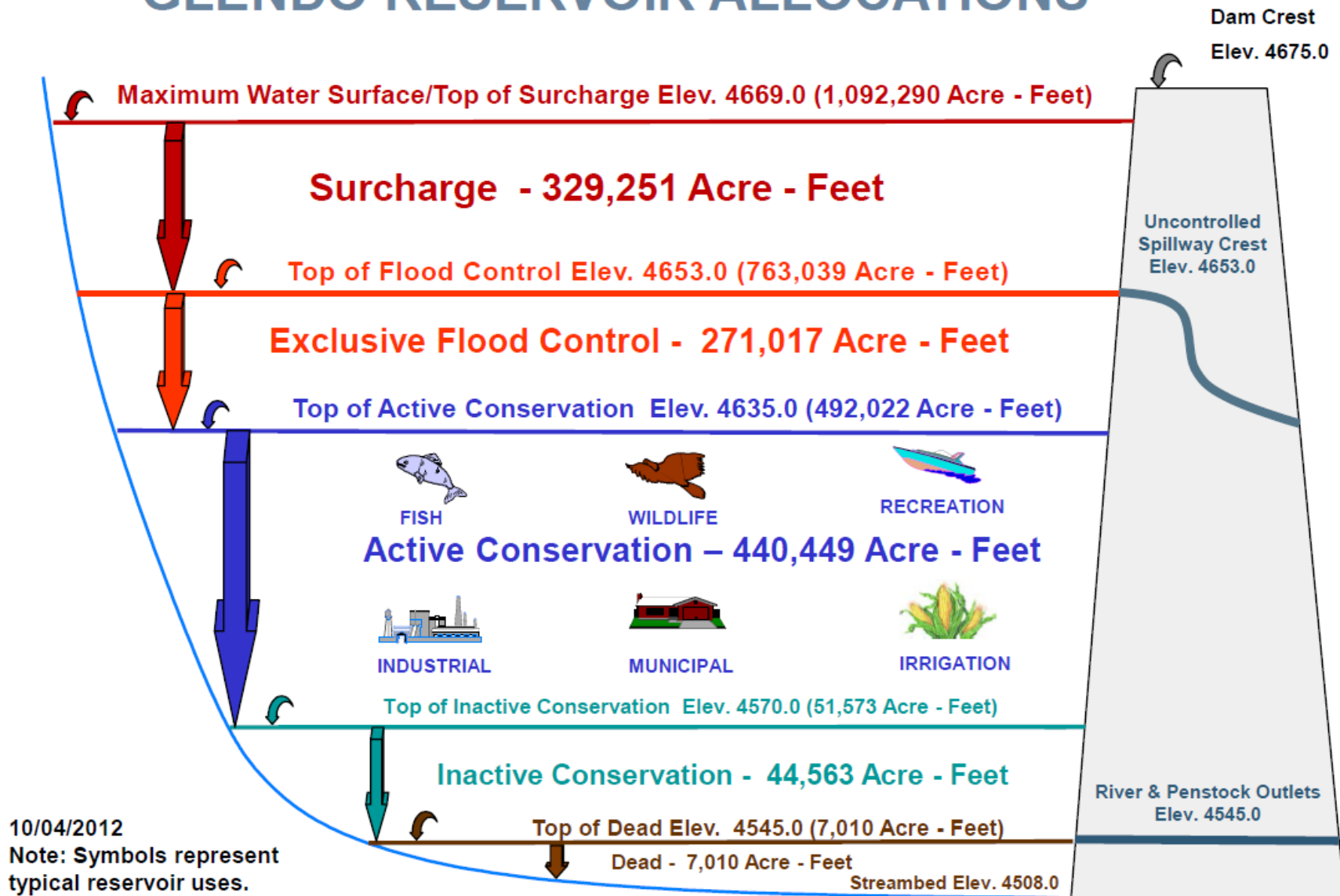
# ALCOVA RESERVOIR ALLOCATIONS



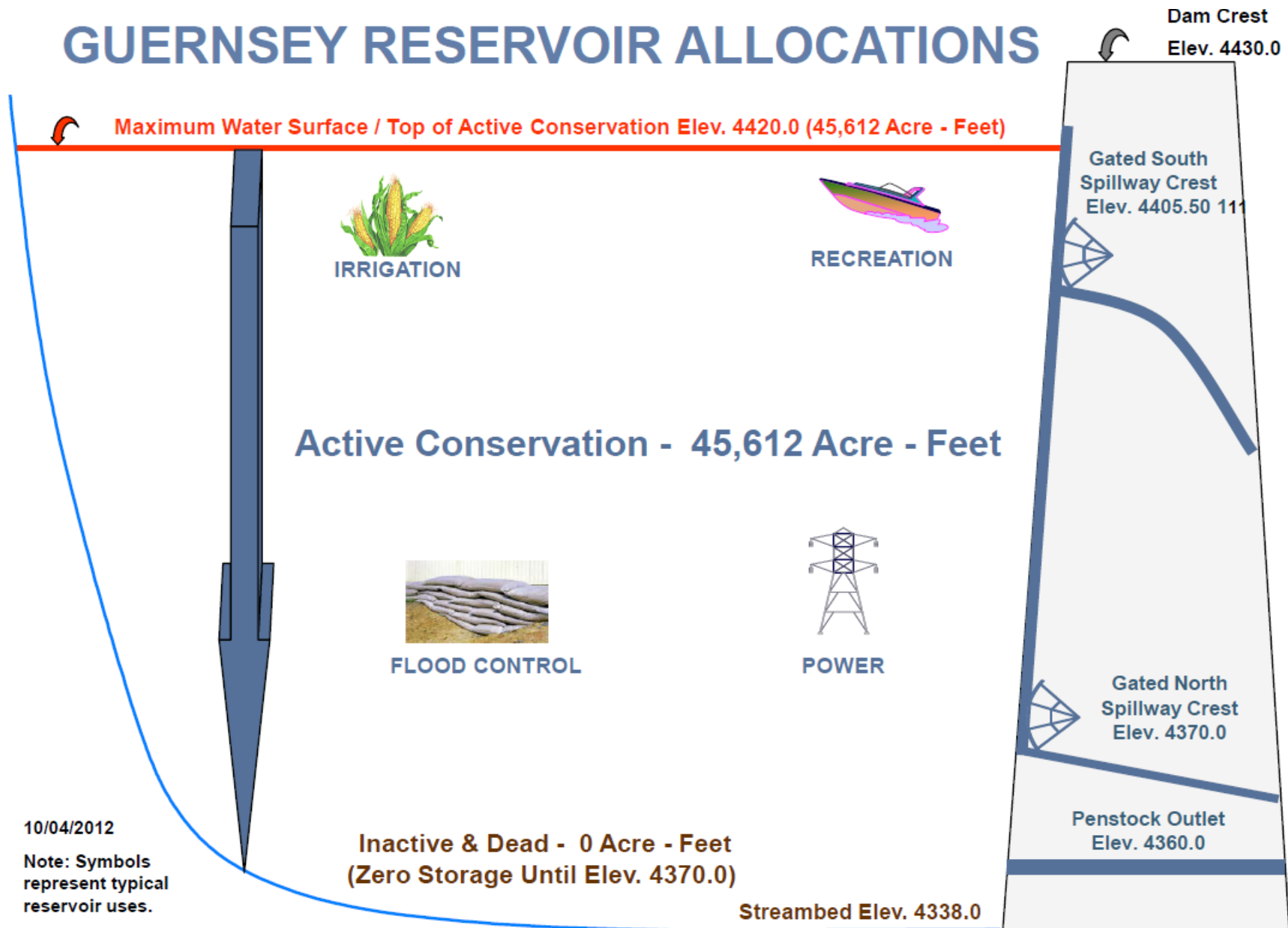
# GRAY REEF RESERVOIR ALLOCATIONS



# GLEND0 RESERVOIR ALLOCATIONS

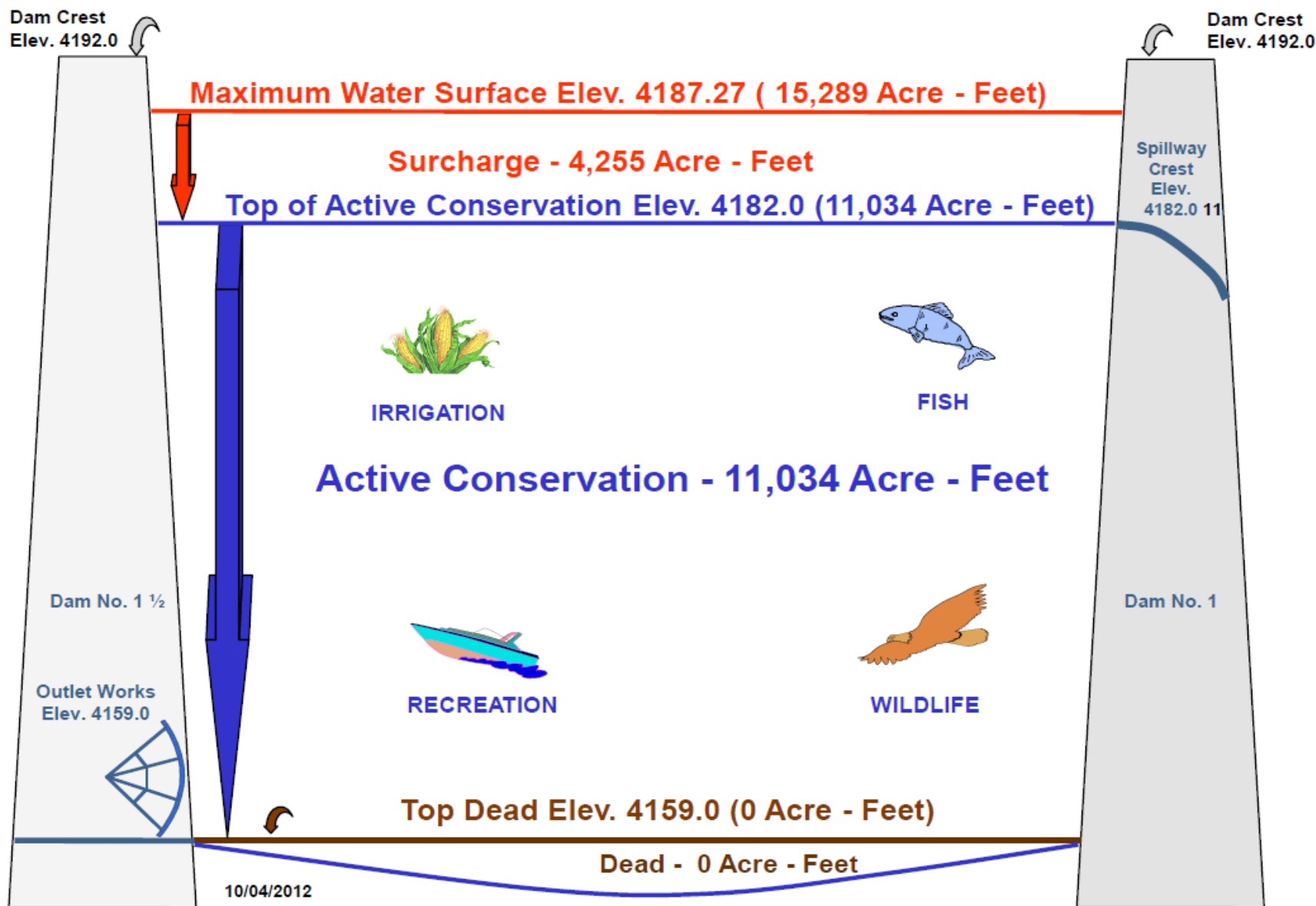


# GUERNSEY RESERVOIR ALLOCATIONS





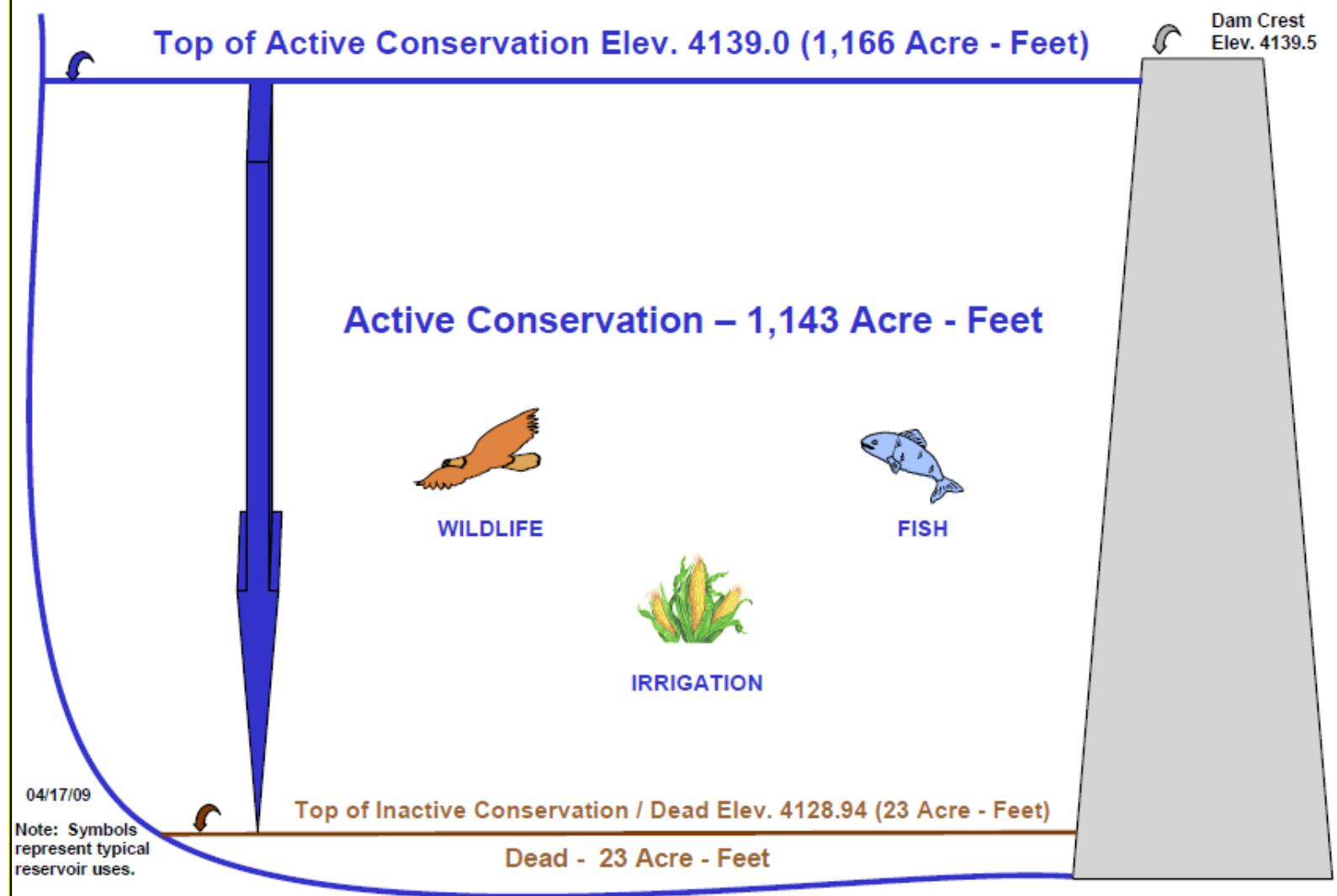
# LAKE ALICE RESERVOIR ALLOCATIONS



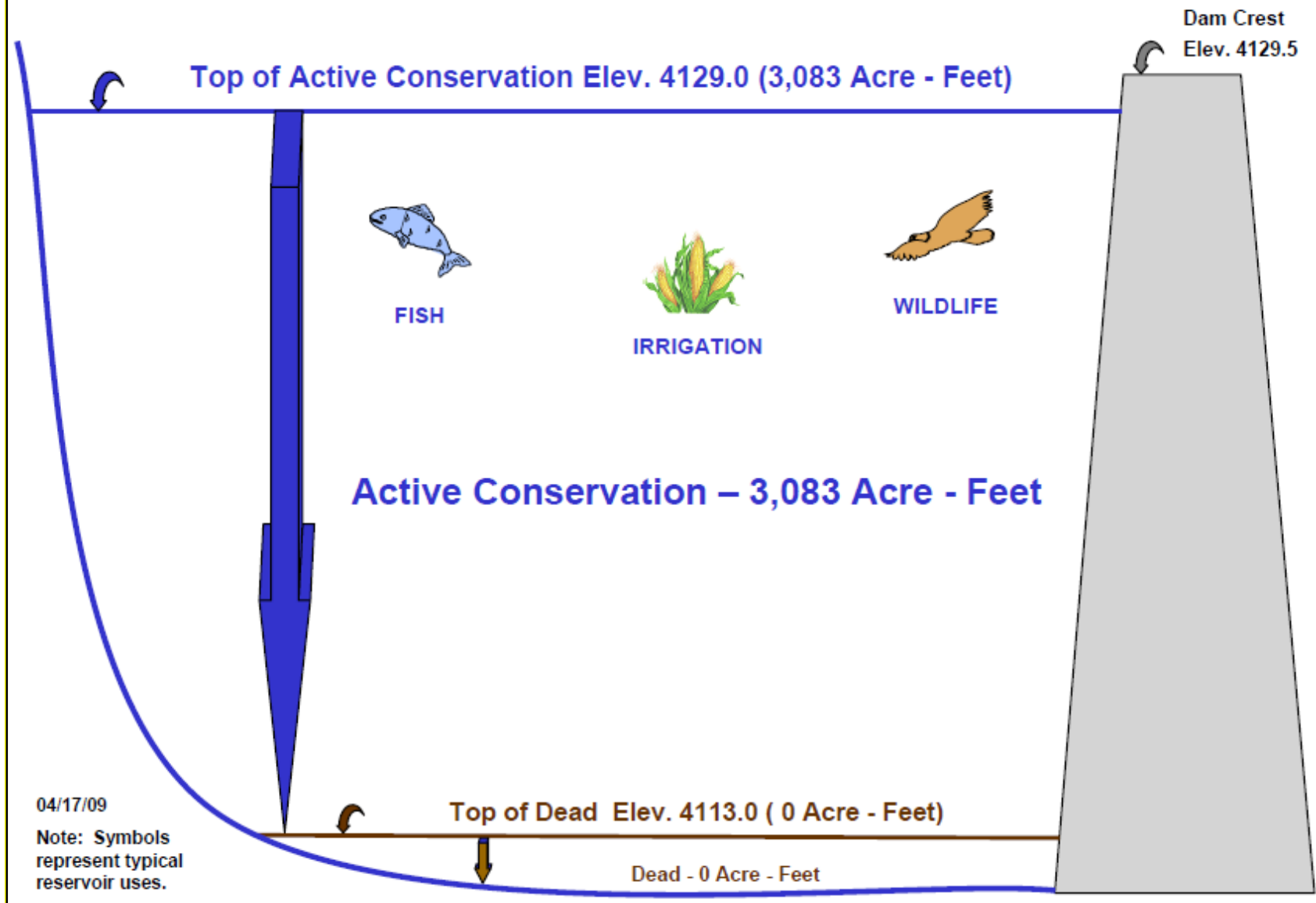
Note: Symbols represent typical reservoir uses.



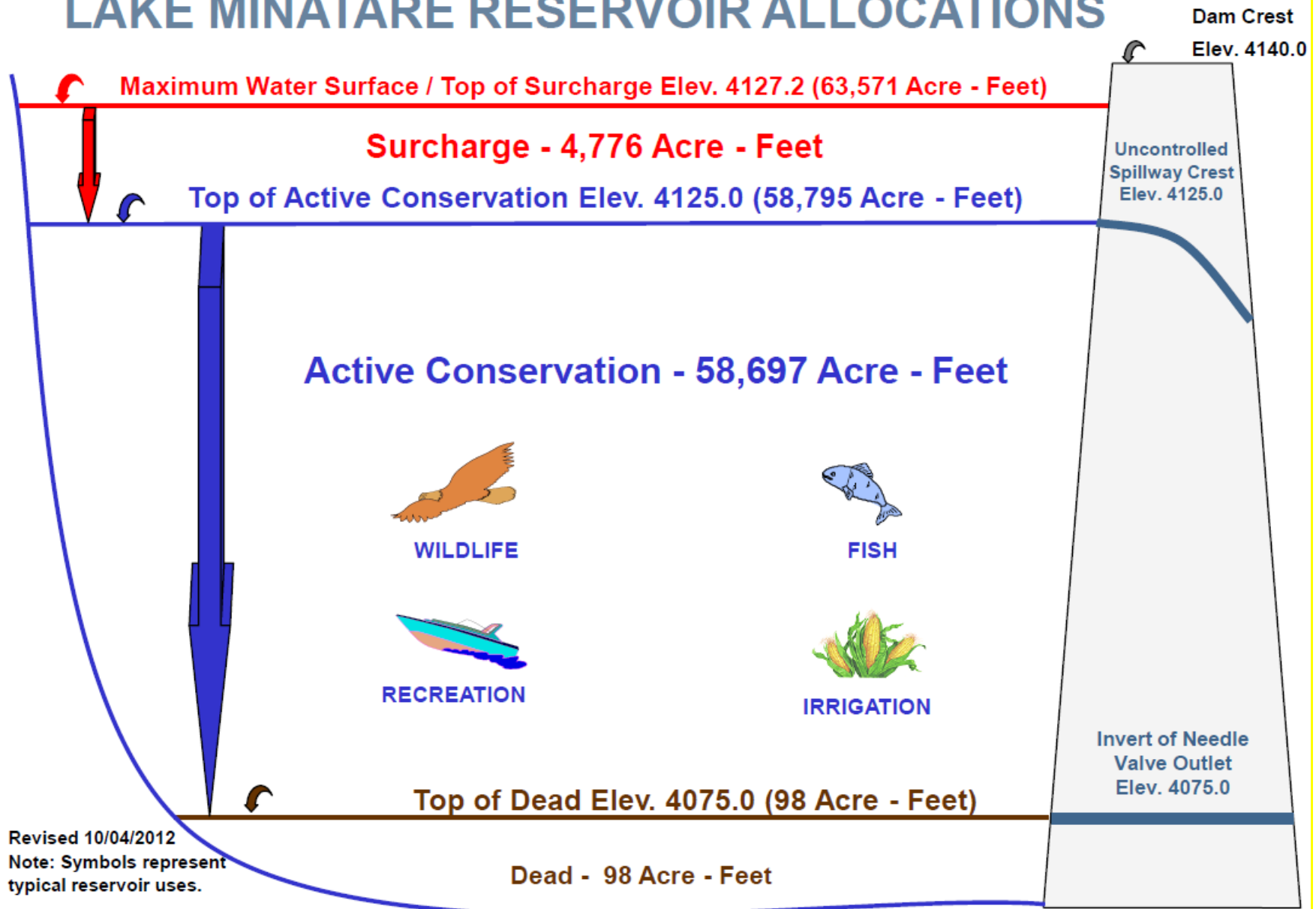
# LITTLE LAKE ALICE RESERVOIR ALLOCATIONS



# WINTERS CREEK RESERVOIR ALLOCATIONS



# LAKE MINATARE RESERVOIR ALLOCATIONS



**Figure 21** North Platte River Basin Map

