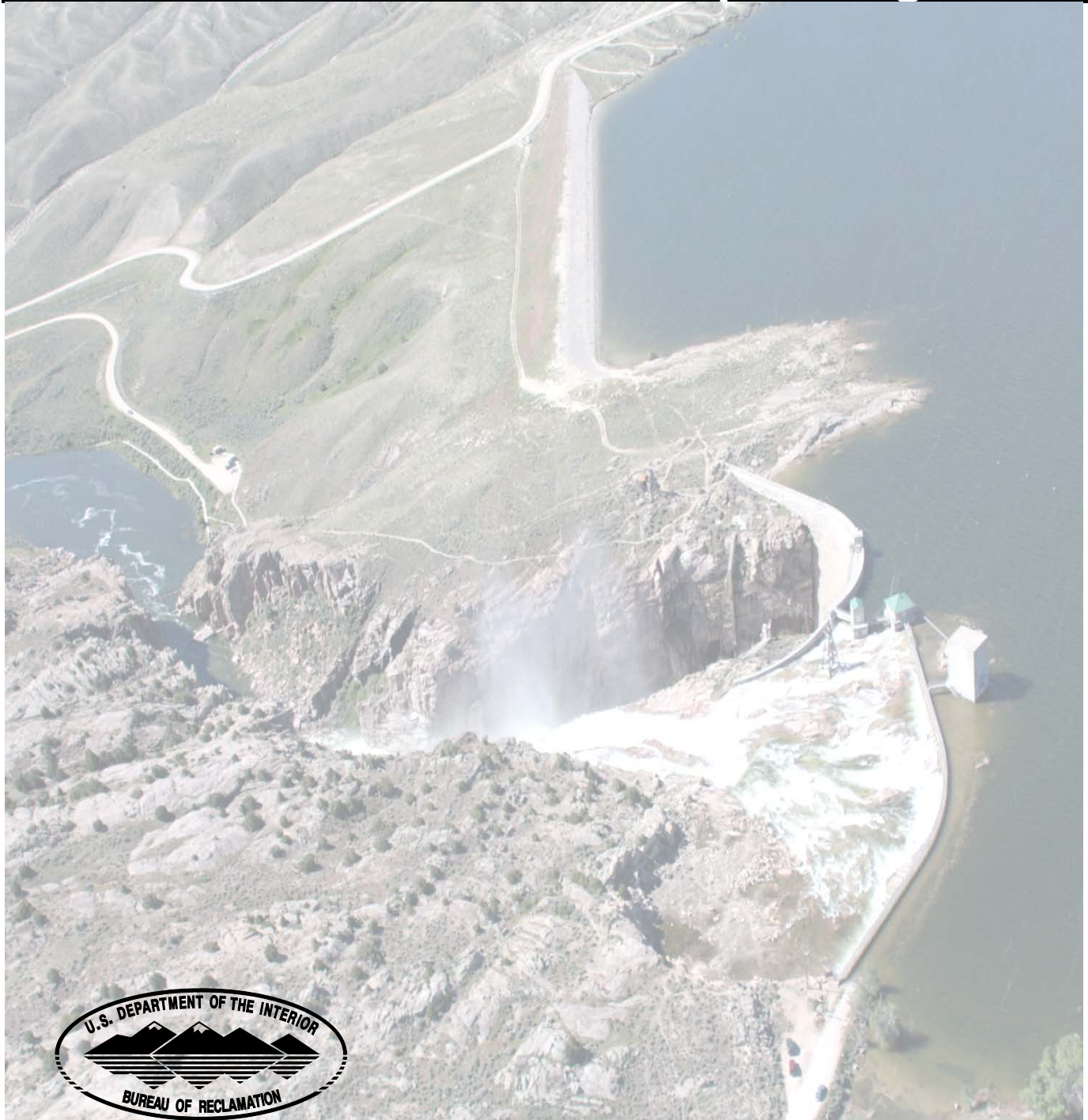


# RECLAMATION

*Managing Water in the West*

## Annual Operating Plans



## **NORTH PLATTE RIVER AREA**

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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 1983-2012, except for Water Year (WY) 2014 information which uses the years 1984-2013. 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 (System) is monitored and in most cases operated and managed from the Wyoming Area Office in Mills, Wyoming. The operation and management of the System is aided by the use of a Programmable Master Supervisory Control, computerized accounting processes, an extensive network of Hydromet stations, control crest measurement weirs at gaging stations, SNOw TELelemetry (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 -September. Figure 20 represents historical watershed runoff above Pathfinder Reservoir from 1906 - 2013. 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 re-regulating reservoir immediately downstream of Alcova Dam.

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

The System has seven main stem reservoirs, six of which have powerplants with generating capacities totaling 237,200 kilowatts (kw). Table 12 depicts a breakdown of generating units and their capacity for each North Platte Powerplant. Table 1 below depicts North Platte River Reservoir Data.

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

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

**Table 1.** North Platte River Reservoir Data

Reservoir (Date Completed)	Dead Storage <sup>1</sup> Acre-feet (AF)	Active Storage <sup>2</sup> (AF)	Total Storage (AF)	Minimum Storage (AF)	Minimum Elevation (feet)
Seminole (1939)	556	1,016,717	1,017,273	31,670 <sup>4</sup>	6239.00 <sup>4</sup>
Kortes (1951)	151	4,588	4,739	1,666 <sup>4</sup>	6092.00 <sup>4</sup>
Pathfinder (1909)	7	1,069,993	1,070,000	31,405 <sup>4</sup>	5746.00 <sup>4</sup>
Alcova (1938)	91	184,314	184,405	137,610 <sup>5</sup>	5479.50 <sup>5</sup>
Gray Reef (1961)	56	1,744	1,800	56 <sup>6</sup>	5312.00 <sup>6</sup>
Glendo (1958)	7,010	756,029	763,039 <sup>3</sup>	51,573	4570.00 <sup>7</sup>
Guernsey (1927)	0	45,612	45,612	0	4370.00 <sup>8</sup>
Total	7,871	3,078,997	3,086,868	253,980	

<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 4635.00 ft) with an additional 271,017 AF allocated to Flood Control (elevation 4653.00 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 5487.00 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, and other purposes. Each project of the System must be operated under the purposes for which it was authorized and constructed. The objective of an integrated system is to obtain optimum benefits from the individual projects.

The System's integrated operation is planned and coordinated by Reclamation's Wyoming Area Office in Mills, Wyoming. This office collects and analyzes information 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, 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).

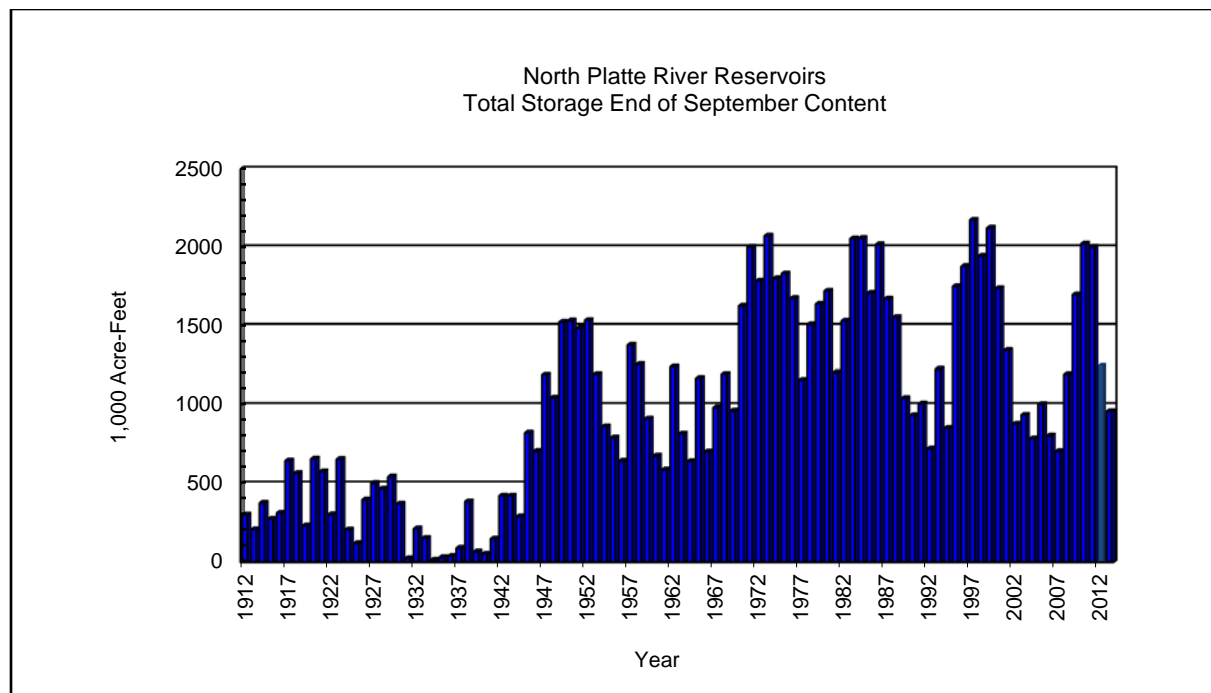
The System is operated on a WY basis (October 1 - September 30). Early in the WY an AOP is prepared, reviewed, and presented to the public. The AOP consists of three operation studies using reasonable minimum, reasonable maximum, and most probable inflow conditions determined from statistical analysis 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 WY. 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 WY 1912 - 2013. Table 2 depicts A Summary of Reservoir Storage Content for WY (WY) 2013 (end of month). Table 9 depicts the Actual Reservoir Operations for WY 2013.



**Table 2.** Summary of Reservoir Storage Content for WY 2013 (End of Month)

Seminoe Reservoir			Pathfinder Reservoir			Alcova Reservoir		
Month	Storage	Record <sup>1</sup>	Month	Storage	Record <sup>1</sup>	Month	Storage	Record <sup>1</sup>
October	543,924		October	410,564		October	155,930	
November	529,695		November	412,249		November	157,306	
December	513,515		December	415,319		December	157,419	
January	497,034		January	420,983		January	156,876	
February	486,132		February	427,479		February	157,147	
March	485,007		March	423,571		March	157,306	
April	492,127		April	398,950		April	180,400	
May	578,628		May	397,622		May	180,791	
June	532,832		June	400,590		June	181,109	
July	404,155		July	362,362		July	181,061	
August	362,589		August	292,679		August	181,134	
September	330,261		September	308,956		September	180,474	
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	152,921		October	2,320		October	1,271,455	
November	188,831		November	3,318		November	1,297,305	
December	220,215		December	4,174		December	1,316,544	
January	256,811		January	5,091		January	1,342,891	
February	291,938		February	5,972		February	1,374,855	
March	339,965		March	6,767	2 <sup>nd</sup> lowest	March	1,418,817	
April	396,246		April	6,848	Lowest <sup>4</sup>	April	1,480,644	
May	436,691		May	8,353	Lowest <sup>4</sup>	May	1,607,964	
June	401,754		June	9,200	Lowest <sup>4</sup>	June	1,532,062	
July	270,234		July	9,293		July	1,233,530	
August	125,858		August	9,262		August	977,951	
September	134,544		September	1,868		September	961,996	

<sup>1</sup> Record is the 30 year period from 1983-2012<sup>2</sup> Total North Platte system includes storage in Seminoe, Kortes, 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)<sup>4</sup> The low reservoir levels in Guernsey Reservoir were the result of an intentional operation to keep the reservoir at or below elevation 4400 ft to facilitate modifications to the South Spillway under the dam safety program



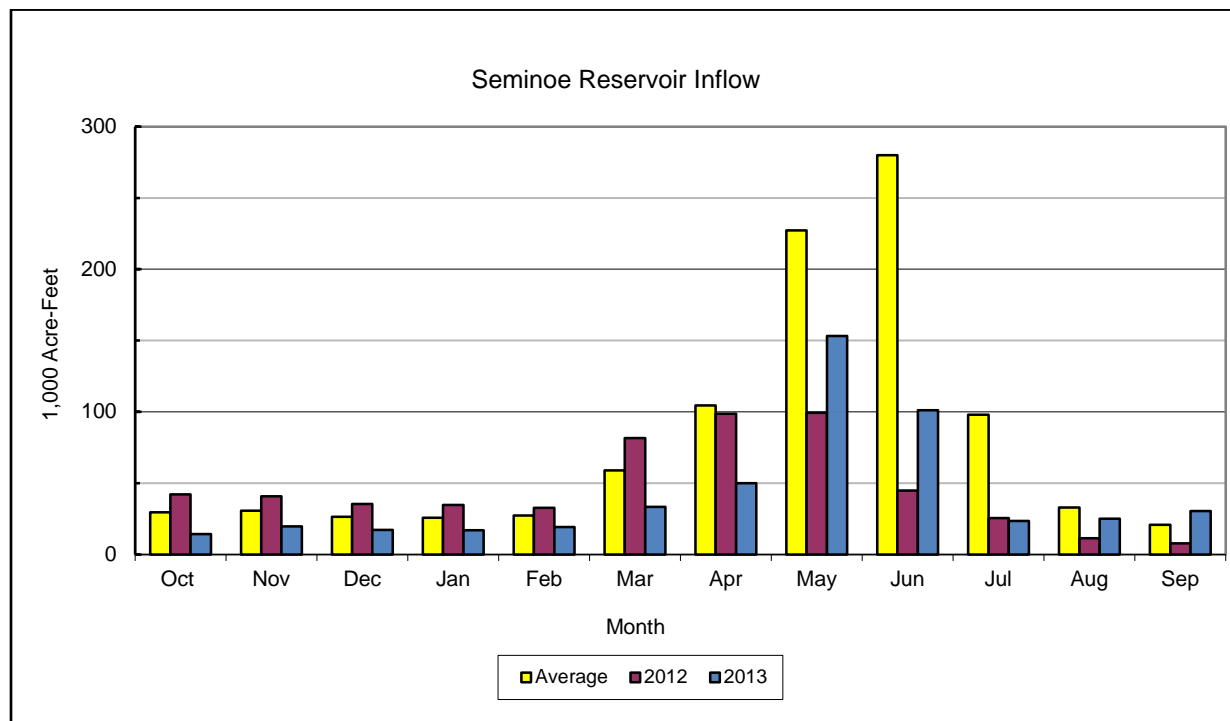
**Figure 1.** North Platte River Reservoirs Total Storage End of September Content (1912-2013)



## SYSTEM OPERATIONS WY 2013

### Seminole Reservoir Inflow

Seminole Reservoir inflows were below average for the months of October - August. A total of 503,683 acre-feet (AF) or 50 percent of the 30 year average entered the system above Seminole Reservoir during the WY. The monthly inflows ranged from a high of 148 percent of average in September 2013 to a low of 21 percent in July 2013. The actual April - July inflow totaled 327,795 AF, which was 44 percent of the 30 year average of 749,500 AF. The Seminole computed inflow peaked for the WY on May 18, 2013 at 3,912 cubic feet per second (cfs) compared to 17,064 cfs in WY 2012. Figure 2 depicts a comparison of average, WY 2013 and WY 2012 monthly inflows.



**Figure 2.** Seminole Reservoir Inflow

### Seminole Reservoir Storage and Releases

Seminole Dam and Reservoir, on the North Platte River, is the main storage facility for the Kendrick Project. Construction of the dam was completed in 1939 providing a storage capacity of 1,017,273 AF. The powerplant contains three electrical generating units with a total capacity of 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 2013, Seminole Reservoir had a storage content of 565,363 AF, which was 91 percent of average and 56 percent of capacity. The maximum Seminole Reservoir content was reached on June 12, 2013 at 599,803 AF. Due to the below average spring runoff, Seminole storage content decreased to below average during the WY. At the end of WY 2013, Seminole Reservoir storage content was 330,261 AF, which was 53 percent of average and 32 percent of capacity. See Figure 3 for a comparison of average, WY 2013 and WY 2012 monthly storage.

Releases from Seminole Dam averaged approximately 530 cfs from October 2012 - March 2013. The release was increased to approximately 700 cfs early April; to 2,970 cfs by late June. The release was decreased to approximately 1,000 cfs late July and remained at approximately 1000 cfs - September 30.

Table 3 depicts a summary of Seminole Reservoir information for WY 2013.

**Table 3.** Seminole Reservoir Hydrologic Data for WY 2013

Reservoir Allocations	Elevation (FT)	Storage (AF)	Storage Allocation (AF)
Top of Inactive and Dead	6239.00	31,670	31,670
Top of Active Conservation	6357.00	1,017,273	985,603
Crest of Dam (without Camber)	6361.00		

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of WY	6329.22	565,363	Oct 1, 2012 <sup>2</sup>
End of WY	6306.66	330,261	Sep 30, 2013
Annual Low	6306.66	330,261	Sep 30, 2013
Historic Low <sup>1</sup>	6253.30	56,390	Apr 20, 1961
Annual High	6331.88	599,803	Jun 12, 2013
Historic High <sup>1</sup>	6359.29	1,073,050	Jun 20, 1949

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

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

Inflow-Outflow Data	Inflow <sup>3</sup>	Date	Outflow	Date
Annual Total (AF)	503,863	Oct' 12 – Sep' 13	702,596	Oct' 12 – Sep' 13
Daily Peak (CFS)	3,912	May 18, 2013	2,983 <sup>4</sup>	Jun 29, 2013
Daily Minimum (CFS)	2	Dec 24, 2012	462 <sup>4</sup>	Dec 22, 2013
Peak Jet Flow Valve (CFS)				
Total Jet Flow Valve (CFS)				

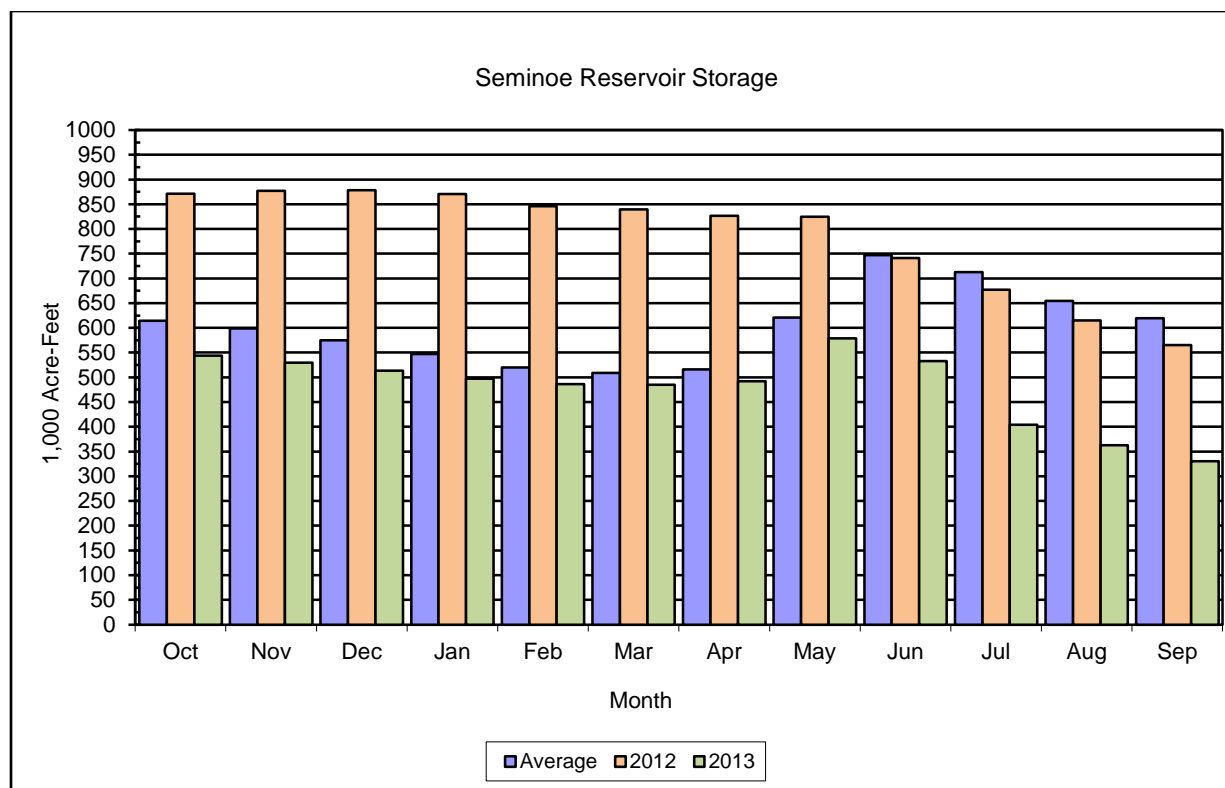
<sup>3</sup> Inflows are a computed number.

<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	14.3	47	32.7	77	543.9	89
November	19.8	63	31.7	70	529.7	88
December	17.2	63	32.9	65	513.5	89
January	16.9	65	32.7	62	497.0	91
February	19.2	69	29.7	55	486.1	93
March	33.3	55	32.9	47	485.0	95
April	50.0	47	40.8	42	492.1	95
May	153.3	66	62.6	52	578.6	93
June	101.0	34	139.4	83	532.8	71
July	23.5	21	146.3	107	404.2	57
August	25.1	70	61.6	70	362.6	55
September	30.4	148	59.3	117	330.3	53
Annual	504.0	52	702.6	75		

<sup>5</sup> The 30 year average is the period (1983-2012)

<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 (Pick-Sloan Missouri Basin Project) are located about 2 miles below Seminole Dam. It was the first unit initiated by the Bureau of Reclamation under the Missouri River Basin Project. Kortes Reservoir provides a total storage capacity of 4,739 AF at elevation 6142.0 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.

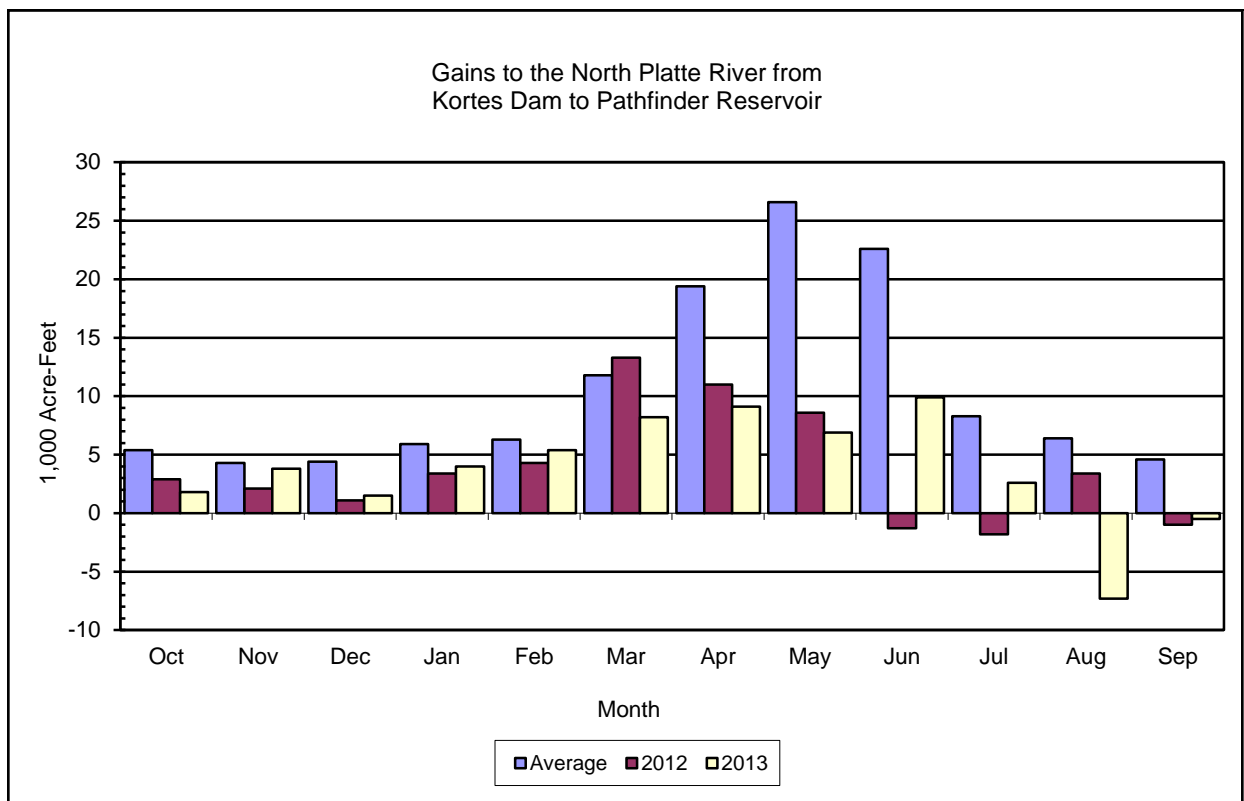
The spillway on the right abutment consists of an uncontrolled crest with a concrete-lined tunnel and has a capacity of 50,000 cfs.

Senate Bill 2553 which was passed in the 90<sup>th</sup> 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 2012 - early April 2013. The release was increased to approximately 700 cfs early April to May 1, 2013. The release was increased to approximately 1000 cfs in early May and continued to near the end of the month. The release was increased near the end of May and was increased several more times until mid June, where the releases peaked at approximately 2970 cfs, where it was held through the first week of July. The release was decreased at the end of the first week in July and continued to be decreased through July, reaching approximately 1000 cfs at the end of July. Approximately 1000 cfs release was maintained through September. In WY 2013 most releases were made through the Kortes Powerplant, except when testing or maintenance required bypass releases.

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

Kortes Dam to Pathfinder Dam river gains were below average for all of WY 2013. The Kortes Dam to Pathfinder Dam river gains ranged from 86 percent of average in February 2013 to 26 percent in May 2013. Gains in August and September were negative. The actual April-July river gains were 28,472 AF, which is 37 percent of the 30 year average of 76,900 AF. Figure 4 depicts a comparison of average, WY 2012 and WY 2013 monthly river gains.



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

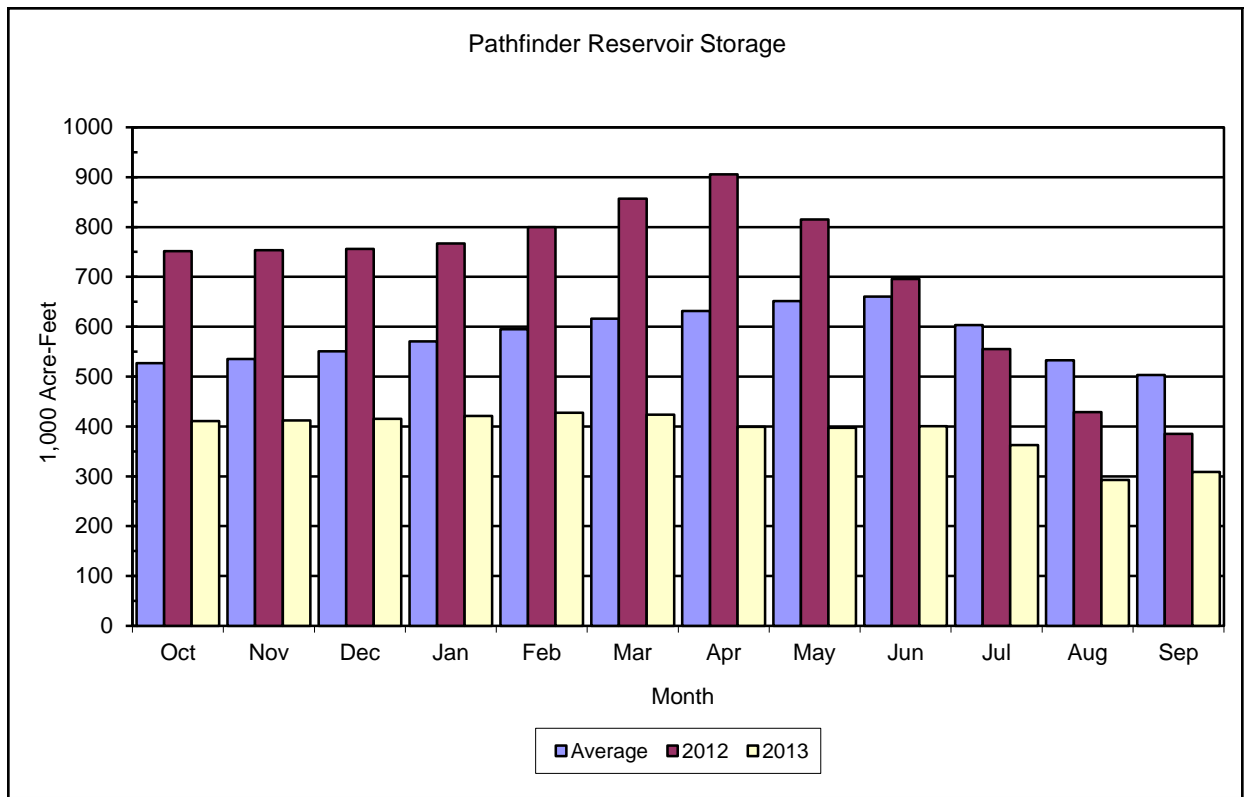
## **Pathfinder Reservoir Storage and Releases**

Pathfinder Dam and Reservoir, a major storage facility of the North Platte Project, has a total capacity of 1,070,000 AF at elevation 5852.49 feet. Construction of the dam was completed in 1909. Operationally, this structure is a bottleneck in the System with its maximum non-spillway release capability of approximately 6,000 cfs. The rated capacity of the left abutment outlet works through the two 60-inch jet flow gates is approximately 3,000 cfs at elevation 5852.49 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 2,516 cfs can be released through the Fremont Canyon Power conduit and discharged from the Fremont Canyon turbines at the powerplant 3 miles downstream. Reconditioning of Unit 2 of the Fremont Canyon Powerplant was completed in August 2012. Reconditioning of Unit 1 was completed late July 2013. The 33.4 MW nameplate rating of these two units has not changed. Total rating of these two units is 66.8 MW.

Reconstruction of the Pathfinder spillway was completed in 2012. The spillway crest was raised approximately 2.4 feet to elevation 5852.49 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 5852.49 feet. The calculated discharge capacity of the spillway is 32,449 cfs at reservoir elevation 5858.10 feet.

At the start of WY 2013 storage in Pathfinder Reservoir was 384,869 AF, which was 76 percent of average and 36 percent of capacity. Pathfinder storage remained below the 30 year average throughout the year as shown in Figure 5. The maximum Pathfinder Reservoir content for the water year peaked on March 18, 2013 at 433,182 AF which is 40 percent of capacity. The water year ended with 308,956 AF of water in storage in Pathfinder Reservoir, which was 61 percent of average and 29 percent of capacity. A continual release of water from Pathfinder Reservoir during October was maintained during the gradual drawdown of Alcova Reservoir to its winter operating range. At the request of the Wyoming Game and Fish Department a year round flow of 75 cfs was provided to the river below Pathfinder Dam. The 75 cfs minimum flow is provided through the 30-inch jet-flow valve except when the 60-inch jet-flow valve is needed to supplement Fremont Canyon releases to make required irrigation deliveries. The river below Pathfinder Dam reached a maximum flow of 2,569 cfs on July 24. Table 4 depicts a summary of Pathfinder Reservoir information for WY 2013.





**Figure 5.** Pathfinder Reservoir Storage

**Table 4.** Pathfinder Reservoir Hydrologic Data for WY 2013

Reservoir Allocations	Elevation (FT)	Storage (AF)	Storage Allocation (AF)
Top of Inactive	5746.00	31,398	31,398
Top of Active Conservation	5852.49	1,070,000	1,038,595
Crest of Dam (without Camber)	5858.10		

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of WY	5809.78	384,869	Oct 1, 2012 <sup>3</sup>
End of WY	5801.42	308,956	Sep 30, 2013
Annual Low	5799.43	292,679	Aug 31, 2013
Historic Low <sup>2, 3</sup>	5690.00	0	Sep 9, 1958
Annual High	5814.40	433,182	Mar 18, 2013
Historic High <sup>1</sup>	5853.11	1,083,755	Jul 7, 1983

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

<sup>2</sup> From September 1958 - 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)	747,986	Oct, 2012 – Sep, 2013	790,161	Oct, 2012 – Sep, 2013
Daily Peak (CFS)	3,748	Jul 4, 2013	3,260	Jun 18, 2013
Daily Minimum (CFS)	345	Oct 4, 2012	11	Oct 4, 2012
Peak Jet Flow Valve (CFS)			2,569 <sup>4</sup>	Jul 24, 2013
Total Jet Flow Valve (AF)			273,485	Oct, 2012 – Sep, 2013

<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 2013 that resulted in a peak flow of 2,569 cfs.

Month	Gain from Kortess		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	1.8	33	34.4	71	6.1	27	410.6	78
November	3.8	88	35.5	72	31.7	80	412.2	77
December	1.5	34	34.4	63	31.0	81	415.3	75
January	4.0	68	36.8	63	30.6	81	421.0	74
February	5.4	86	35.1	58	28.3	81	427.5	72
March	8.2	69	41.0	50	43.5	75	423.6	69
April	9.1	4	50.0	43	72.7	75	399.0	63
May	6.9	26	69.6	47	66.8	55	397.6	61
June	9.9	44	149.0	78	139.6	81	400.6	61
July	2.6	31	149.0	103	181.3	94	362.4	60
August	-7.3	NA <sup>7</sup>	54.3	58	119.6	76	292.7	55
September	-5	NA <sup>7</sup>	58.9	106	39.1	49	309.0	61
Annual	45.4	36	748.0	68	790.3	75		

<sup>5</sup> 30 year average is the period (1983-2012)

<sup>6</sup> The inflow includes the gain from Kortess 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 elevation 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 5500 feet. The reservoir is operated within a 2 feet 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.

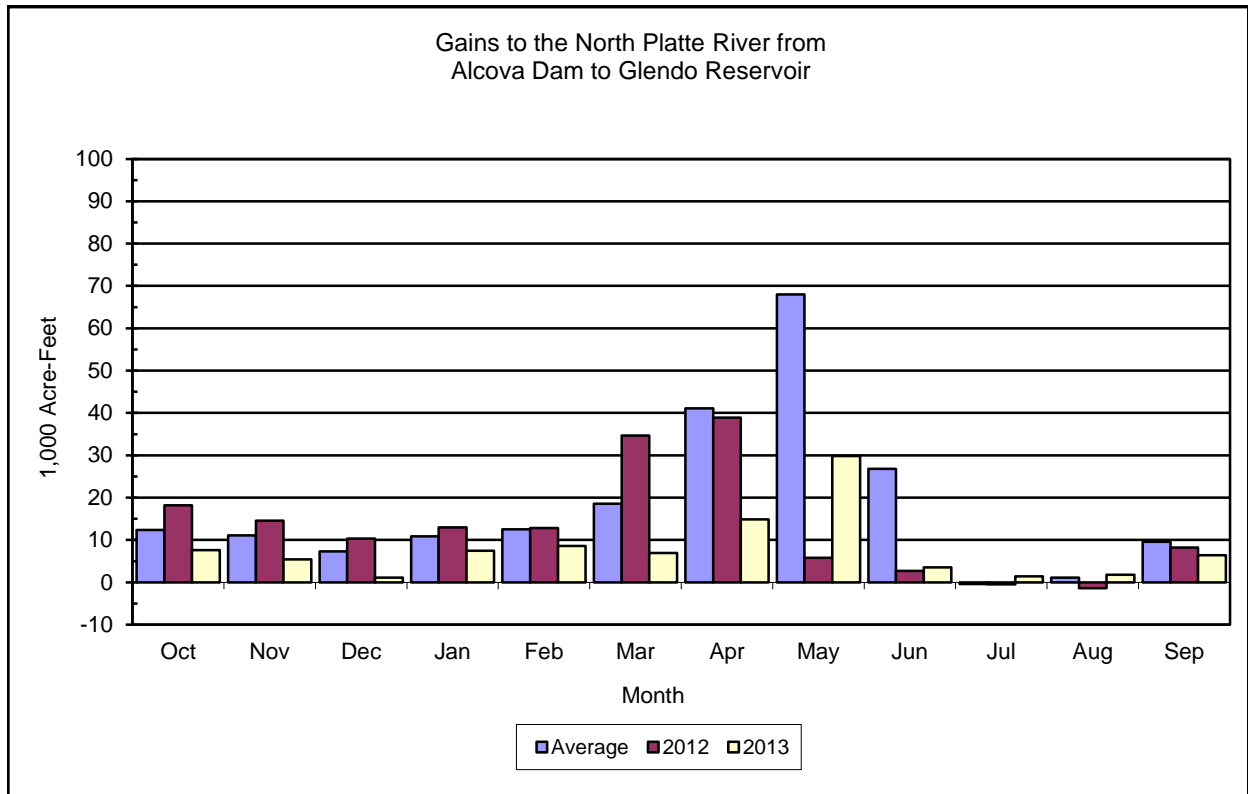
The annual drawdown of Alcova Reservoir began on September 30, 2012, and continued through October 29, 2012, when the reservoir reached its normal winter operating range of 5488  $\pm$  one foot. The refill of Alcova Reservoir was initiated on April 1, 2013. The water surface elevation was raised to 5498 feet on April 25, 2013, and the reservoir was maintained within 1 foot of elevation 5498 throughout the summer.

Gray Reef Dam and Reservoir is part of the Glendo Unit, Oregon Trail Division, Pick-Sloan Missouri Basin Program. The dam which was completed in 1961, is a three-zoned rock and 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 August 31, 2012 - March 21, 2013. At the request of the Wyoming Game and Fish Department, a series of flushing flows were initiated on March 22, 2013, and continued through March 28, 2013, 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 5, 2013. Releases for the remainder of the WY were adjusted to meet irrigation demands below Guernsey Reservoir. The largest daily release of water for the WY occurred on June 18, 2013 at 2,805 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 July and August 2013 and below average for rest of the year. The Alcova Dam to Glendo Reservoir river gains ranged from a high of 164 percent in August to a low of 13 percent in June 2013. The actual April - July gain was 49,594 AF, which was 37 percent of average. The maximum computed daily river gain of 1,283 cfs occurred on May 22, 2013, and the daily computed Glendo Reservoir inflow peaked on July 6, 2013, at 3,019 cfs. Figure 6 depicts a comparison of average, WY 2013 and WY 2012 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 2 electrical generating units, with a total installed capacity of 38 MW. With both generating units operating at capacity and the reservoir water surface at elevation 4635.0 feet, approximately 3,920 cfs can be released through Glendo Powerplant. The reinforced concrete spillway has an ungated ogee crest. The spillway capacity at elevation 4669.0 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 (4635 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. During October - March of WY 2013, the low-flow was not operated due to dam safety work at Guernsey.

Glendo Reservoir storage was 115,512 AF at the beginning of WY 2013, which was 94 percent of average and 23 percent of the active conservation of 492,022 AF. Water releases from Glendo Reservoir were initiated on April 8, 2013, to move water to the Inland Lakes. The reservoir reached a maximum storage for the year of 449,510 AF (elevation 4631.32 feet) on June 8, 2013. At the end of the WY, Glendo Reservoir contained 134,554 AF of water (water surface elevation 4591.67 feet) which was 109 percent of average and 27 percent of active conservation of 492,022 AF. Figure 7 depicts WY 2013 and WY 2012 end of month reservoir storage compared to average. Table 5 depicts a summary of Glendo Reservoir information for WY 2013.

**Table 5. Glendo Reservoir Hydrologic Data for WY 2013**

Reservoir Allocations	Elevation (FT)	Storage (AF)	Storage Allocation (AF)
Top of Inactive	4570.00	51,573	51,573
Top of Active Conservation	4635.00	492,022	440,449
Top of Exclusive Flood Control	4653.00	763039	271,017
Maximum water surface(surcharge)	4669.00	1,092,290	329,251
Crest of Dam (without Camber)	4675.00		

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of WY	4587.66	115,512	Oct 1, 2012 <sup>1</sup>
End of WY	4591.67	134,544	Sep 30, 2013
Annual Low	4587.66	115,512	Oct 1, 2012
Historic Low	4548.10	15,140	Sep 28, 1966
Annual High	4631.32	449,510	June 8, 2013
Historic High	4650.94	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)	807,710	Oct, 2012 – Sep, 2013	761,512	Oct, 2012 – Sep, 2013
Daily Peak (CFS)	3,019	July 6, 2013	7,299	Jul 25, 2013
Daily Minimum (CFS)	270	Dec 28, 2013	1 <sup>3</sup>	
Peak Bypass Release (CFS)			3789	Jul 25, 2013
Total Bypass Release (AF)			154,031 <sup>3</sup>	Oct, 2012 – Sep, 2013

<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. The low flow was not operated during Oct-Mar due to Guernsey dam safety work.

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	7.6	61	38.8	65	.1	5 <sup>6</sup>	152.9	86
November	5.4	49	36.5	70	.1	6 <sup>6</sup>	188.8	84
December	1.1	15	32	70	.4	21 <sup>6</sup>	220.2	82
January	7.5	69	37.4	78	.2	11 <sup>6</sup>	256.8	82
February	8.6	69	35.6	78	.1	4 <sup>6</sup>	291.9	82
March	6.9	37	49.5	68	.1	.5 <sup>6</sup>	340.0	85
April	14.9	36	61.4	54	3.1	6	396.2	89
May	29.8	44	83.7	48	39.6	28	436.7	90
June	3.5	13	112.7	63	141.5	79	401.8	84
July	1.4	NA <sup>4</sup>	168.2	97	294.0	92	270.2	84
August	1.8	164	115.6	82	256.8	88	125.9	80
September	6.4	67	36.3	43	25.9	27	134.5	109
Annual	94.9	43	807.7	68	761.9	68		

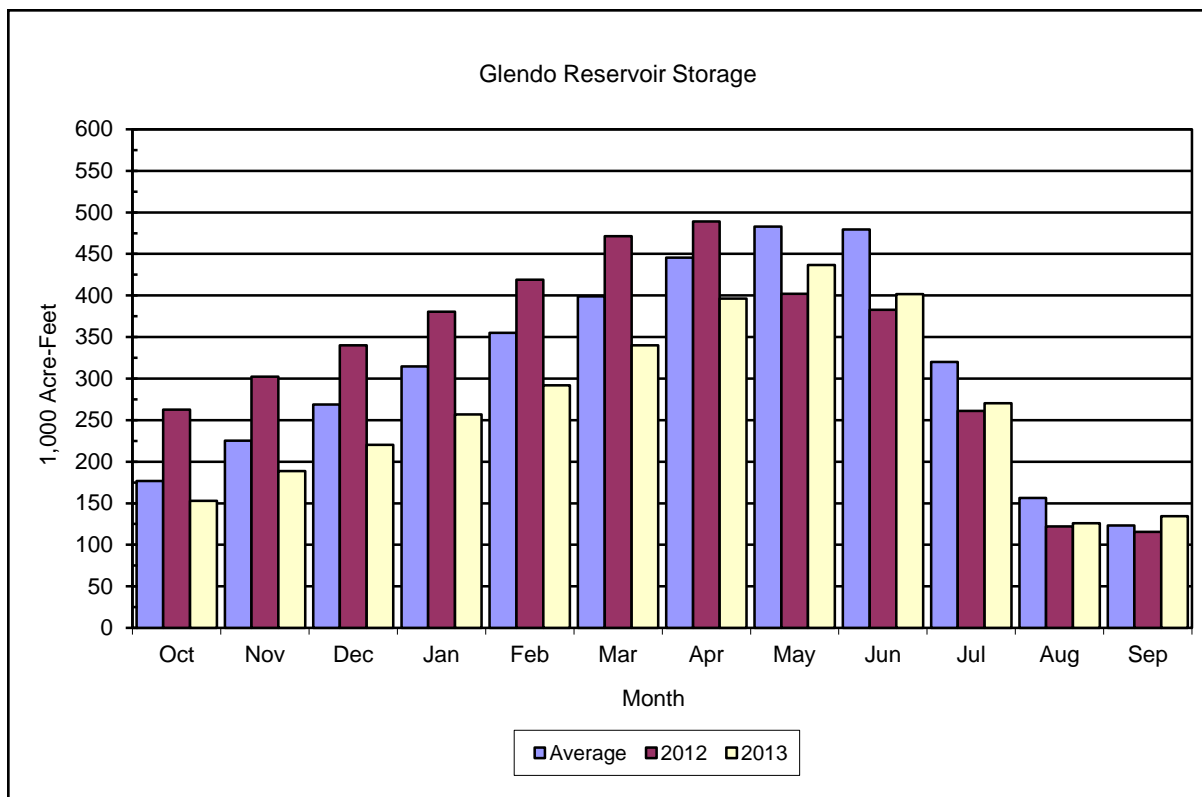
<sup>4</sup> Represents a negative number that makes the percentage meaningless.

<sup>5</sup> 30 year average is the period (1983-2012)

<sup>6</sup> 19 year average is the period (1994-2012) 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 19 year average is used for the months of October - March. The low flow was not operated during Oct-Mar due to Guernsey dam safety work.

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

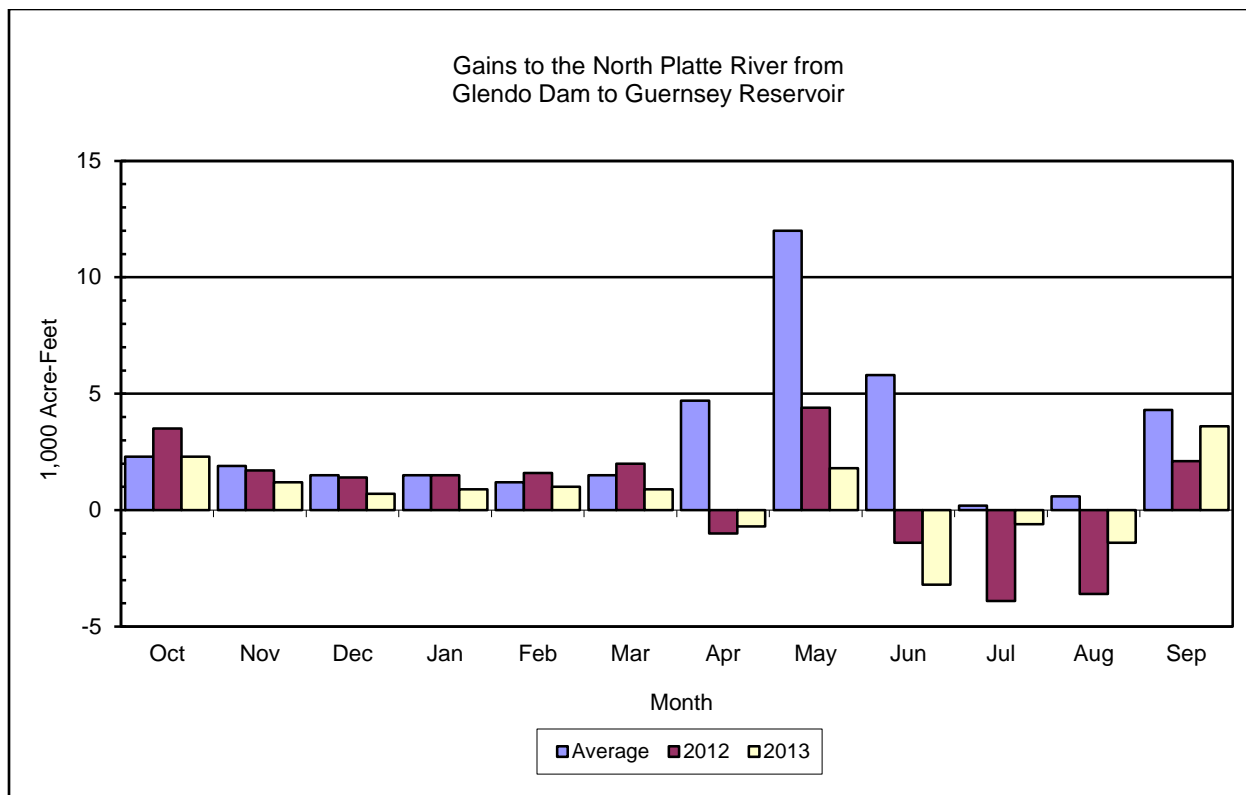
<sup>8</sup> End of month



**Figure 7.** Glendo Reservoir Storage

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

The river gains between Glendo Dam and Guernsey Dam during WY 2013 were equal to the average during the month of October and below average the rest of the year. The Glendo Dam to Guernsey Reservoir river gains ranged from a high of 100 percent of average in October 2013 to a low of 15 percent in May 2013, with the months of April and June - August having negative values. On July 25, 2013, daily computed inflow to Guernsey Reservoir peaked at 7,839 cfs. Figure 8 depicts a comparison of average, WY 2013 and WY 2012 monthly river gains.



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

### Guernsey Reservoir Storage and Releases

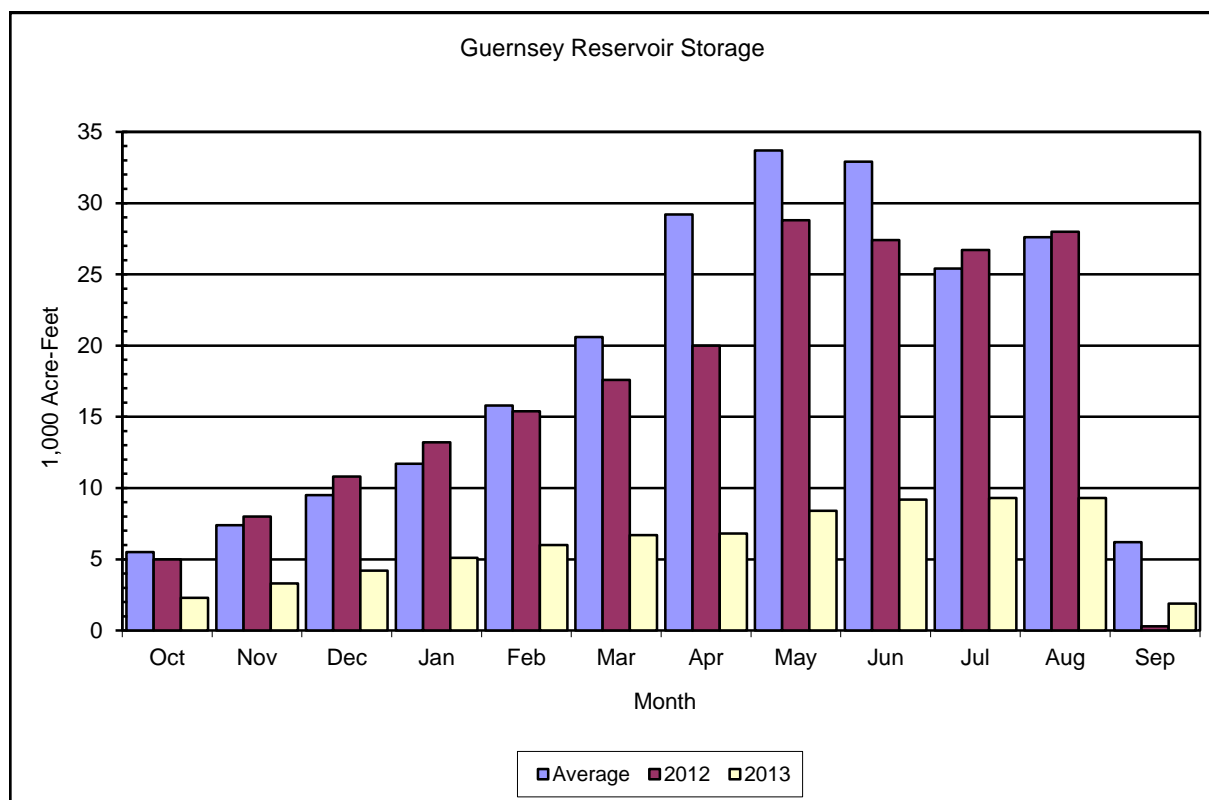
Guernsey Dam is located about 25 miles below Glendo Dam and stores and reregulates the flow of the river prior to delivery of storage water to project lands of the North Platte Project and Glendo Unit. Guernsey Powerplant is located on the right abutment of the dam and has two 3.2 MW electrical generating 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 4420 feet, is used to make irrigation releases to supplement the maximum powerplant releases.

The original capacity of the reservoir was 73,800 AF, but this has been reduced by deposition of silt. 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.

During WY 2013 there were dam safety modification construction activities occurring at Guernsey Dam, which included modification to the South Spillway. One of the drum gates was removed and replaced with a concrete weir wall, and the other drum gate was rehabilitated. There was also a considerable amount of concrete work done in the spillway inlet and start of the tunnel. The work on the spillway structure required that the reservoir level be maintained at or below elevation 4400 ft. The dam safety modifications were scheduled for completion early in the spring of 2014.



At the beginning of WY 2013, storage in Guernsey Reservoir was at 274 AF. Releases from Guernsey Reservoir were started on April 29, 2013 as water was moved into the Inland Lakes. The annual "silt run" from the reservoir was initiated on July 11 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 1,352 AF occurred on July 23, 2013. Following the "silt run", the reservoir was refilled to only approximately 9,200 AF due to the ongoing dam safety work. Due to the Allocation, irrigation releases from Guernsey Reservoir were discontinued on September 17. Guernsey Reservoir was lowered in September to facilitate dam safety work throughout the upcoming winter. The reservoir reached a low storage of 553 AF on September 17 and rose to 1,868 AF by September 30, 2013. See Figure 9 for WY 2013 and WY 2012 storage compared to average.



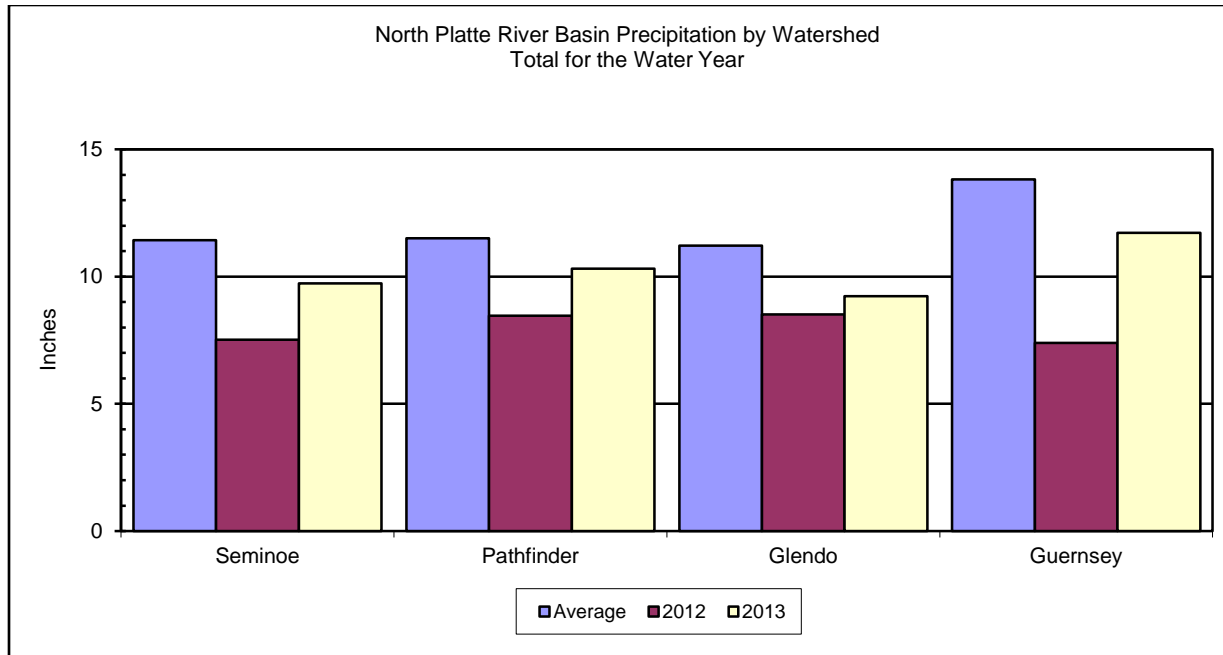
**Figure 9.** Guernsey Reservoir Storage

### Precipitation Summary for WY 2013

The precipitation was variable from month to month throughout the North Platte River Basin, with September being the only month that was above average throughout the basin and November, March, May, and July the only months that were below average throughout the basin. The percent of average for the water year ranged from 82 in the Glendo basin to 90 in the Pathfinder basin. Seminoe and Guernsey basins were both 85 percent of average for the water

year. Watershed precipitation in each basin is an average of the precipitation readings using several stations as indicators.

See Figure 10 for a comparison of average, WY 2012 and WY 2013 total precipitation.



**Figure 10.** North Platte River Basin Precipitation by Watershed Total for WY 2013

## Snow Pack Summary for WY 2013

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<sup>st</sup> - April 1<sup>st</sup>, the watershed above Seminoe Reservoir SWE ranged from 74 percent of average on February 1<sup>st</sup> to 80 percent of average on April 1<sup>st</sup>. A wetter than normal April in the mountains brought the SWE up to 93 percent of average by May 1<sup>st</sup>. In the Sweetwater River watershed, the SWE was 63 to 73 percent of average from February 1<sup>st</sup> - April 1<sup>st</sup>. By May 1<sup>st</sup> the SWE in the Sweetwater River watershed had dropped to 48 percent of average. Snow in the Alcova Dam to Glendo Reservoir watershed began low with only 31 percent of average SWE on February 1<sup>st</sup>. By March 1<sup>st</sup> the SWE had improved to 68 percent of normal, which it maintained - April 1<sup>st</sup>, when the SWE was 67 percent of average. A wetter than normal April in the mountains brought the SWE up to 91 percent of average by May 1<sup>st</sup>. Table 6 shows a summary of snowpack for WY 2013.

**Table 6.** North Platte Snowpack Water Content for 2013

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	8.7	74	12.2	78	15.6	80	18.5	93
Pathfinder Reservoir	5.5	73	6.3	65	7.6	63	5.6	48
Glendo Reservoir	1.9	31	5.7	68	7.3	67	8.2	91

<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 WY 2013**

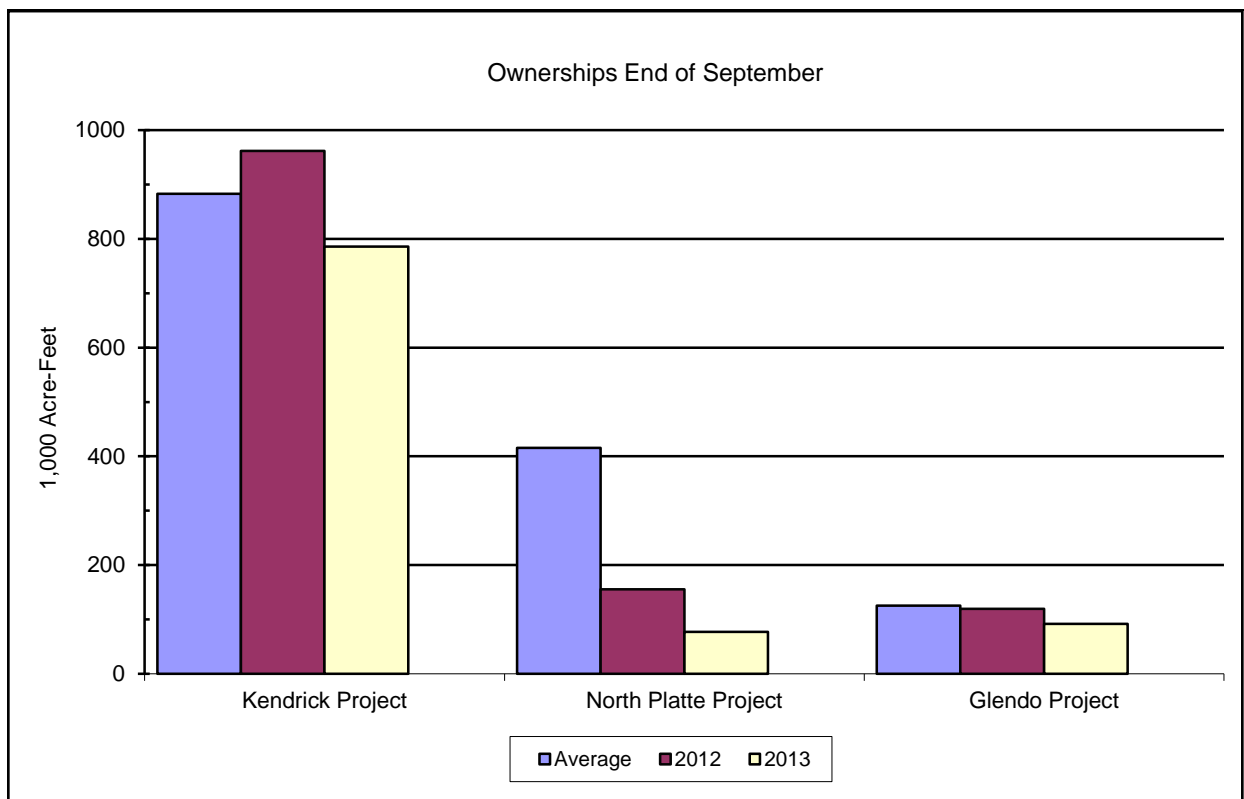
Below average precipitation in the lower elevation areas and below average snowpack in the higher elevation areas coupled with low water table levels and dry soil moisture conditions, resulted in a very low inflow to the system (50 percent of average for WY 2013). These conditions and low total system storage at the beginning of WY 2013 (80 percent of average) resulted in allocation being implemented during the irrigation season. The allocation, which went into effect on June 19, 2013 applied to the four Government Districts (Pathfinder, Goshen, Gering-Fort Laramie, and Northport Irrigation Districts) and to the nine Warren Act Contractors (Farmers, Gering, Hill, Rock Ranch, Central, Chimney Rock, and Browns Creek Irrigation Districts, Lingle Water Users Association, and Beerline Irrigation Canal Company). Farmers, Gering, Gering-Fort Laramie, and Pathfinder Irrigation Districts together borrowed a total of 51,122 AF from Kendrick ownership. Irrigation deliveries to the four Government Districts and nine Warren Act Contractors ended September 15. On September 30, 2013 the North Platte ownership contained 77,283 AF for use in WY 2014. The North Platte Project will pay back their 51,122 AF of water loan to Kendrick ownership in WY 2014. The most consecutive allocation years are 2002-2007, with 1953-1957 the second most.

### **Ownerships for WY 2013**

Stored water which is held in accounts for various entities is referred to as their ownership. At the beginning of WY 2013, the North Platte Project ownership (includes North Platte Pathfinder and North Platte Guernsey), contained 155,208 AF of water, which is 37 percent of average. The Kendrick ownership contained 961,645 AF of water, which is 109 percent of average; and the Glendo ownership contained 119,256 AF of water, which is 95 percent of average. The Guernsey ownership was the only ownership to fill to their permitted amount during WY 2013.

The total amount of water stored at the end of WY 2013 in the mainstem reservoirs for use in WY 2014 was 961,996 AF which was 67 percent of average.

At the end of WY 2013 the North Platte Project ownership (includes North Platte Pathfinder and North Platte Guernsey) contained 77,283 AF of water which is 36 percent of average. The Glendo ownership contained 91,841 AF of water which is 73 percent of average. The Kendrick ownership contained 785,562 AF, which is 89 percent of average and the operational/re-regulation water account contained 2,814 AF. Also stored in the North Platte storage system was 2,496 AF for the city of Cheyenne, zero AF for the Wyoming Water Development Commission, and 2,000 AF for Pacific Power. See Figure 11 for the last two WYs ownership carryover compared with average. Table 8 shows a summary of ownership for WY 2013.



**Figure 11.** Ownership End of September

## North Platte River Forecast 2013

Reservoir inflow forecasts are prepared at the first of each month during February - May to estimate the inflows expected for the April – July runoff period.

Runoff forecasts for the Seminole Reservoir watershed, the Sweetwater River above Pathfinder Reservoir, and the North Platte River from Alcova Dam to Glendo Reservoir are based on snow telemetry (SNOTEL) and/or snow course sites, precipitation sites, and calculated inflows. Reclamation maintains a database consisting of historic monthly data for reservoir inflows, snow and precipitation stations. WYAO staff coordinates with NRCS Portland Office staff to exchange forecasted numbers. Reclamation forecasts and NRCS forecasts are then reviewed by WYAO management. All the information available is considered and judgement is applied to result in a final forecast of reservoir inflow. The forecasted information is then made available to the public through a news release and is used in updating monthly reservoir operating plans. Table 7 depicts a summary of the monthly forecasts for WY 2013.

**Table 7.** Summary of Forecasts of April-July Runoff for WY 2013

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.		
Seminole Reservoir	260	35	260	35	210	28	450 <sup>2</sup>	60	327.8	44
Sweetwater River	39	65	20	33	20	33	18 <sup>3</sup>	30	10.4	17
Alcova to Glendo	20	15	20	15	20	15	50 <sup>4</sup>	37	49.6	37

<sup>1</sup> Average is based on the 1983-2012 period.

<sup>2</sup> The May 1 forecast includes an actual April inflow of 50,000 AF.

<sup>3</sup> The May 1 forecast includes an actual April inflow of 6,500 AF.

<sup>4</sup> The May 1 forecast includes an actual April inflow of 14,900 AF.

Table 8. Summary of North Platte River System Ownership for WY 2013

## Summary of North Platte River Systems Ownerships for Water Year 2013 (Acre-Feet)

Months	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
<b>Pathfinder Ownership</b>														
Evaporation		-1,440	-1,151	-228	-248	-327	-1,029	-1,456	-4,260	-8,292	-6,157	-2,909	-1,684	-29,181
Accural		15,691	24,191	18,189	19,640	22,742	40,413	54,420	158,030	46,493	0	0	29,079	428,888
B/ Delivery			0	0	0	0	0	0	0	-34,611	-250,523	-172,079	-22,260	-479,473
A/ PP&L payback		0	0	0	0	0	0	0	806	780	256	0	0	1,842
Evaporation payback													0	0
Re-Regulation transfer														0
Ownership total		169,459	192,499	210,460	229,852	252,267	291,651	344,615	499,191	503,561	247,137	72,149	77,284	
Actual Ownership	155,208	169,459	192,499	210,460	229,852	252,267	291,651	344,615	499,191	503,561	247,137	72,149	77,284	
<b>Kendrick Ownership</b>														
Evaporation		-4,874	-3,771	-713	-713	-909	-2,534	-3,182	-6,526	-10,378	-9,920	-8,976	-6,406	-58,902
Accural		0	0	0	0	0	0	0	0	0	0	0	0	0
B/ Delivery		0	0	0	0	0	0	0	-10,023	-14,440	-17,364	-62,627	-12,727	-117,181
Evaporation payback														0
Re-Regulation transfer														0
Ownership total		956,771	953,000	952,287	951,574	950,665	948,131	944,949	928,400	903,582	876,298	804,695	785,562	
Actual Ownership	961,645	956,771	953,000	952,287	951,574	950,665	948,131	944,949	928,400	903,582	876,298	804,695	785,562	
<b>Glendo Ownership</b>														
Evaporation		-1,362	-545	-207	-478	-174	-807	-1,000	-1,201	-2,048	-3,575	-2,502	-2,006	-15,905
Accural		0	0	0	0	0	0	0	4,107	2,153	0	0	4,470	10,730
B/ Delivery		0	0	0	0	0	0	0	-229	-526	-9,104	-4,917	-7,465	-22,241
Evaporation payback														0
Ownership total		117,894	117,349	117,142	116,664	116,490	115,683	114,683	117,360	116,939	104,260	96,841	91,840	
Actual Ownership	119,256	117,894	117,349	117,142	116,664	116,490	115,683	114,683	117,360	116,939	104,260	96,841	91,840	
<b>Guernsey Ownership</b>														
Evaporation		0	0	-2	-39	-55	-317	-409	-861	-969	0	0	0	-2,652
Accural		0	0	1,678	8,344	9,459	7,760	0	19,893	0	0	0	0	47,134
B/ Delivery		0	0	0	0	0	0	0	0	-44,482	0	0	0	-44,482
Evaporation payback											0		0	0
Re-Regulation transfer													0	0
Ownership total		0	0	1,676	9,981	19,385	26,828	26,419	45,451	0	0	0	0	
Actual Ownership	0	0	0	1,676	9,981	19,385	26,828	26,419	45,451	0	0	0	0	0
<b>Inland Lakes</b>														
Evaporation		-52	-48	-31	-54	-30	-88	-131	-52	0	0	0	0	-486
Accural		9,550	6,363	0	0	0	0	14,099	0	0	0	0	0	30,012
C/ Delivery		0	0	0	0	0	0	-2,035	-27,491	0	0	0	0	-29,526
Ownership total		9,498	15,813	15,782	15,728	15,698	15,610	27,543	0	0	0	0	0	
Actual Ownership	0	9,498	15,813	15,782	15,728	15,698	15,610	27,543	0	0	0	0	0	0

Table 8. (Continued) Summary of North Platte River System Ownership for WY 2013

Page 2 of 3

## Summary of North Platte River Systems Ownerships for Water Year 2013 (Acre-Feet)

Months	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
<b>City of Cheyenne</b>														
Evaporation		-26	-21	0	0	-2	-19	-36	-73	-34	-26	-29	-23	-289
Stored		1,165	912	658	568	2,561	782	1,773	896	128	683	702	484	11,312
Used		-49	-22	-74	-603	-1,269	-50	-54	-5,827	-4,020	-330	-122	-231	-12,651
Ownership total		5,214	6,083	6,667	6,632	7,922	8,635	10,318	5,314	1,388	1,715	2,266	2,496	
Actual Ownership	4,124	5,214	6,083	6,667	6,632	7,922	8,635	10,318	5,314	1,388	1,715	2,266	2,496	2,496
<b>Pacific Corp (PP&amp;L)</b>														
Evaporation		-18	-3	0	-3	0	-7	-6	-23	-29	-32	-31	-24	-176
Accrual		0	0	0	0	0	0	0	57	56	32	31	24	200
B/ Delivery		0	0	0	0	0	0	0	-6	-18	0	0	0	-24
Ownership total		1,982	1,979	1,979	1,976	1,976	1,969	1,963	1,991	2,000	2,000	2,000	2,000	
Actual Ownership	2,000	1,982	1,979	1,979	1,976	1,976	1,969	1,963	1,991	2,000	2,000	2,000	2,000	
<b>WWDC Ownership</b>														
Evaporation		0	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	0
Delivery		0	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	0
Actual Ownership	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Operational Ownership</b>														
Evaporation		-47	-11	0	-7	-1	-18	-29	-42	-69	-55	-19	-14	-312
Accrual		0	0	0	0	0	0	0	392	273	0	-603	2,653	2,715
Delivery		0	0	0	0	0	0	0	0	-701	-2,417	-1,498	0	-4,616
Evaporation payback														0
Ownership total		4,805	4,794	4,794	4,787	4,786	4,768	4,739	5,089	4,592	2,120	0	2,639	
Actual Ownership	4,852	4,805	4,794	4,794	4,787	4,786	4,768	4,739	5,089	4,592	2,120	0	2,639	
<b>Re-Regulation Water</b>														
Evaporation		-98	-44	-31	-60	-31	-124	-127	-247	-155	0	0	0	-917
Accrual		0	0	0	0	0	0	0	0	0	0	0	175	175
Delivery		0	0	0	0	0	0	0	0	-5,013	0	0	0	-5,013
Evaporation Payback														0
Re-Regulation Transfer														0
Ownership total		5,832	5,788	5,757	5,697	5,666	5,542	5,415	5,168	0	0	0	175	
Actual Ownership	5,930	5,832	5,788	5,757	5,697	5,666	5,542	5,415	5,168	0	0	0	175	



**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, 2013, until July 10, 2013, when the last 22 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. The Kendrick Delivery for 2013 includes 51,122 AF of water loaned to Pathfinder Ownership. This loan will be repaid in Water Year 2014.

**C/** Transfer refers to Inland Lakes ownership water which was delivered from storage in Glendo or Guernsey Reservoirs. In April and May, 29,526 AF was transferred to the Inland Lakes.

**D/** Wyoming Water Development Commission (WWDC) did not contract with the Bureau of Reclamation for storage space.

**Table 9. Actual Reservoir Operations for WY 2013**

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2012

HYDROLOGY OPERATIONS

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Seminole Reservoir Operations		Initial Content 565.4 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	14.3	19.8	17.2	16.9	19.2	33.3	50.0	153.3	101.0	23.5	25.1	30.4
Total Inflow	cfs	233.0	333.0	279.0	274.0	346.0	541.0	839.0	2493.0	1698.0	383.0	408.0	511.0
Turbine Release	kaf	31.8	31.7	32.9	32.7	28.2	32.9	40.8	62.6	107.8	132.0	61.6	58.7
Jetflow Release	kaf	0.8	0.0	0.0	0.0	1.5	0.0	0.0	0.0	31.6	14.3	0.0	0.6
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	32.7	31.7	32.9	32.7	29.7	32.9	40.8	62.6	139.4	146.3	61.6	59.3
Total Release	cfs	531.0	532.0	535.0	532.0	535.0	535.0	686.0	1018.0	2343.0	2380.0	1002.0	996.0
Evaporation	kaf	3.1	2.4	0.4	0.6	0.4	1.5	2.0	4.2	7.4	5.9	5.0	3.5
End-month content	kaf	543.9	529.7	513.5	497.0	486.1	485.0	492.1	578.6	532.8	404.2	362.6	330.3
End-month elevation	ft	6327.5	6326.3	6325.0	6323.6	6322.6	6322.5	6323.1	6330.3	6326.6	6314.8	6310.4	6306.7
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	32.7	31.7	32.9	32.7	29.7	32.9	40.8	62.6	139.4	146.3	61.6	59.3
Total Inflow	cfs	531.0	532.0	535.0	532.0	535.0	535.0	686.0	1018.0	2343.0	2380.0	1002.0	996.0
Turbine Release	kaf	32.5	30.9	30.5	32.4	29.4	32.9	40.8	62.7	104.7	130.9	61.6	59.4
Spillway Release	kaf	0.1	0.7	2.4	0.3	0.3	0.0	0.0	0.0	34.4	15.5	0.0	0.0
Total Release	kaf	32.6	31.7	32.9	32.7	29.7	32.9	40.8	62.7	139.1	146.4	61.6	59.4
Total Release	cfs	531.0	532.0	535.0	532.0	535.0	535.0	686.0	1020.0	2338.0	2381.0	1001.0	998.0
Pathfinder Reservoir Operations		Initial Content 384.9 Kaf					Operating Limits: Max 1070.2 Kaf, 5852.49 Ft.					Min 31.4 Kaf, 5746.00 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Sweetwater Inflow	kaf	1.7	2.7	2.3	1.8	1.6	2.2	6.5	3.0	0.7	0.2	0.3	0.2
Kortes-Path Gain	kaf	0.1	1.1	-0.8	2.3	3.8	5.9	2.7	3.9	9.2	2.4	-7.6	-0.7
Inflow from Kortes	kaf	32.6	31.7	32.9	32.7	29.7	32.9	40.8	62.7	139.1	146.4	61.6	59.4
Total Inflow	kaf	34.4	35.5	34.4	36.8	35.1	41.0	50.0	69.6	149.0	149.0	54.3	58.9
Total Inflow	cfs	560.0	596.0	560.0	598.0	633.0	667.0	840.0	1132.0	2504.0	2423.0	884.0	990.0
Turbine Release	kaf	0.1	13.4	26.0	25.7	24.1	35.5	60.0	61.8	63.3	58.4	114.8	34.4
Jetflow Release	kaf	6.0	18.3	5.0	4.9	4.2	8.0	12.7	5.0	76.3	122.9	4.8	4.7
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
Total Release	kaf	6.1	31.7	31.0	30.6	28.3	43.5	72.7	66.8	139.6	181.3	119.6	39.1
Total Release	cfs	99.0	534.0	504.0	497.0	509.0	708.0	1222.0	1086.0	2346.0	2948.0	1944.0	658.0
Evaporation	kaf	2.6	2.1	0.4	0.6	0.4	1.4	1.9	4.2	6.5	5.9	4.5	3.5
End-month content	kaf	410.6	412.2	415.3	421.0	427.5	423.6	399.0	397.6	400.6	362.4	292.7	309.0
End-month elevation	ft	5812.3	5812.5	5812.8	5813.3	5813.9	5813.5	5811.2	5811.1	5811.3	5807.5	5799.4	5801.4
Alcova Reservoir Operations		Initial Content 180.8 Kaf					Operating Limits: Max 184.4 Kaf, 5500.00 Ft.					Min 153.8 Kaf, 5487.00 Ft.	
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total Inflow	kaf	6.1	31.7	31.0	30.6	28.3	43.5	72.7	66.8	139.6	181.3	119.6	39.1
Total Inflow	cfs	99.0	534.0	504.0	497.0	509.0	708.0	1222.0	1086.0	2346.0	2948.0	1944.0	658.0
Turbine Release	kaf	30.4	29.9	30.8	31.0	27.9	43.0	49.2	55.4	123.3	162.0	103.3	29.5
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Casper Canal Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	14.4	17.4	15.0	9.3
Total Release	kaf	30.4	29.9	30.8	31.0	27.9	43.0	49.2	55.4	123.3	162.5	103.3	29.5
Total Release	cfs	494.0	503.0	500.0	504.0	503.0	700.0	827.0	900.0	2072.0	2643.0	1680.0	495.0
Evaporation	kaf	0.6	0.5	0.1	0.1	0.1	0.3	0.4	1.0	1.5	1.4	1.3	1.0
End-month content	kaf	155.9	157.3	157.4	156.9	157.1	157.3	180.4	180.8	181.1	181.1	181.1	180.5
End-month elevation	ft	5488.0	5488.6	5488.6	5488.4	5488.5	5488.6	5498.4	5498.5	5498.7	5498.6	5498.7	5498.4

**Table 9. (Continued) Actual Reservoir Operations for WY 2013**

NORTH PLATTE RIVER OPERATING PLAN Year Beginning Oct 2012													
Gray Reef Reservoir Operations			Initial Content		1.5 Kaf			Operating Limits: Max			1.8 Kaf, 5332.00 Ft.		
-----			-----		-----			Min			0.0 Kaf, 5307.00 Ft.		
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total Inflow	kaf	30.4	29.9	30.8	31.0	27.9	43.0	49.2	55.4	123.3	162.5	103.3	29.5
Total Inflow	cfs	494.0	503.0	500.0	504.0	503.0	700.0	827.0	900.0	2072.0	2643.0	1680.0	495.0
Total Release	kaf	30.7	29.8	30.8	30.8	27.8	43.0	49.3	55.3	122.7	162.4	103.2	29.8
Total Release	cfs	500.0	501.0	501.0	501.0	501.0	699.0	829.0	900.0	2063.0	2642.0	1678.0	500.0
Glendo Reservoir Operations			Initial Content		115.5 Kaf			Operating Limits: Max			789.4 Kaf, 4653.00 Ft.		
-----			-----		-----			Min			63.2 Kaf, 4570.02 Ft.		
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Alcova-Glendo Gain	kaf	7.6	5.4	1.1	7.5	8.6	6.9	14.9	29.8	3.5	1.4	1.8	6.4
Infl from Gray Reef	kaf	31.2	31.1	30.9	29.9	27.0	42.6	46.5	53.9	109.2	166.8	113.8	29.9
Total Inflow	kaf	38.8	36.5	32.0	37.4	35.6	49.5	61.4	83.7	112.7	168.2	115.6	36.3
Total Inflow	cfs	631.0	614.0	521.0	608.0	641.0	805.0	1032.0	1361.0	1894.0	2735.0	1880.0	611.0
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.4	104.0	246.5	219.3	24.4
Low Flow Release	kaf	0.1	0.1	0.4	0.2	0.1	0.1	0.1	0.0	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	3.0	39.6	141.5	294.0	256.8	25.9
Total Release	kaf	0.1	0.1	0.4	0.2	0.1	0.1	3.1	39.6	141.5	294.0	256.8	25.9
Total Release	cfs	2.0	1.0	6.0	3.0	1.0	1.0	52.0	643.0	2377.0	4781.0	4176.0	435.0
Evaporation	kaf	1.3	0.6	0.3	0.7	0.4	1.4	2.0	3.7	6.2	5.7	3.2	1.8
End-month content	kaf	152.9	188.8	220.2	256.8	291.9	340.0	396.2	436.7	401.8	270.2	125.9	134.5
End-month elevation	ft	4595.2	4601.1	4605.7	4610.7	4615.0	4620.5	4626.3	4630.2	4626.8	4612.4	4589.9	4591.7
Guernsey Reservoir Operations			Initial Content		0.5 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	1.2	0.7	0.9	1.0	0.9	-0.7	1.8	-3.2	-0.6	-1.4	3.6
Inflow from Glendo	kaf	0.1	0.1	0.4	0.2	0.1	0.1	3.1	39.6	141.5	294.0	256.8	25.9
Total Inflow	kaf	2.4	1.3	1.1	1.1	1.0	1.0	2.4	41.4	138.3	293.4	255.4	29.4
Total Inflow	cfs	40.0	21.0	19.0	18.0	19.0	17.0	41.0	673.0	2324.0	4771.0	4153.0	495.0
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.6	41.0	31.0	62.6	11.4
Seepage	kaf	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.7	0.5	0.1
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	2.1	25.0	95.9	262.0	192.3	25.3
Total Release	kaf	0.3	0.2	0.2	0.1	0.1	0.1	2.1	39.6	136.9	292.9	254.9	36.7
Total Release	cfs	5.0	4.0	4.0	2.0	2.0	2.0	36.0	643.0	2300.0	4764.0	4146.0	616.0
Evaporation	kaf	0.1	0.0	0.0	0.1	0.0	0.1	0.2	0.3	0.6	0.3	0.5	0.2
End-month content	kaf	2.3	3.3	4.2	5.1	6.0	6.7	6.8	8.4	9.2	9.3	9.3	1.9
End-month elevation	ft	4388.9	4391.4	4393.1	4394.6	4395.9	4396.9	4397.0	4398.7	4399.5	4399.6	4399.6	4387.6

### Flood Benefits for WY 2013

**Table 10.** Flood Damage Prevented by Dams for WY 2013 (on the North Platte River Basin System)

DAMS	WY 2013	PRIOR TO 2013 <sup>2</sup>	ACCUMULATED TOTAL <sup>1</sup>
SEMINOE	\$0	\$79,317,200	\$79,317,200
PATHFINDER	\$0	\$24,616,000	\$24,616,000
ALCOVA	\$0	\$1,612,800	\$1,612,800
GLENDON	\$323,200	\$183,616,400	\$183,939,600
GUERNSEY	\$0	\$2,214,600	\$2,214,600
TOTAL	\$323,200	\$291,377,000	\$291,700,200

<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 - 2013 except for Glendo Dam, which is 1965 - 2013.

## Generation for WY 2013

Power generation was below average for all powerplants in the North Platte River Basin in WY 2013. See Table 11 for a breakdown of generation by powerplant.

**Table 11.** Power Generation WY 2013

Powerplant	Gross generation <sup>1</sup> (GWh)	Percent of Average <sup>2</sup>
Seminole	90.8	68
Kortes	113.3	81
Fremont Canyon	147.9	66
Alcova	93.6	81
Glendo	54.9	66
Guernsey	9.1	48
Total Basin	509.6	71

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

<sup>2</sup> 30 year average (1983-2012)

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	133.9
Kortes	3	12,000	36,000	192-204	2,910	139.1
Fremont Canyon	2	33,400	66,800	247-363	3,080	225.3
Alcova	2	19,500	39,000	153-165	4,100	116.0
Glendo	2	19,000	38,000	73-156	3,400	83.4
Guernsey	2	3,200	6,400	89-91	1,340	18.8
Total	14	---	237,200	---	---	716.5

<sup>1</sup> 1983-2012

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

## **PROPOSED OPERATIONS FOR WY 2014**

Three operation studies were developed for the System to establish an Annual Operating Plan (AOP) for WY 2014. Each of the studies conformed to the established operating criteria but used different inflow conditions and different demand conditions.

The three inflow conditions were determined from a statistical analysis of historic inflows and were labeled reasonable minimum, reasonable maximum, and most probable inflow estimates. Reservoir inflow during WY 2014 has a one-in-ten chance of being less than the reasonable minimum, and a one-in-ten chance of exceeding the reasonable maximum. Statistically, inflows in 2014 will have an eight-in-ten chance of falling between the two extremes. The most probable inflow is based on long-term averages and approximates a 50 percent chance of occurrence. The three studies for WY 2014 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 - 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 962,000 AF at the beginning of the WY 2014. This amount was 69 percent of the 30 year average (1984-2013) and 34 percent of capacity.

## **Seminole Reservoir**

### **Most Probable Condition WY 2014**

#### **October – March**

Seminole Reservoir had a storage of 565,363 AF at the beginning of WY 2013, which is 91 percent of the 30-year average and 56 percent of capacity. Planned turbine releases from Seminole Reservoir are approximately 530 cfs for October - April. Reservoir storage would decrease to about 397,600 AF by April 30. These releases are projected based on an estimated Seminole inflow for the October - March period of 181,100 AF. The planned Kortes release of 530 cfs for October - March is required to maintain a minimum flow of at least 500 cfs in the Miracle Mile reach of the river.

#### **April – September**

Turbine releases are expected to be 530 cfs for April then average 1950 cfs for May - September. There is no expected bypass of water through the jetflow gates in WY 2014. The total release from the reservoir during the April to September period will be scheduled through the power generators to meet downstream requirements. With most probable inflow, storage will reach a maximum of 713,800 AF by the end of June. Projected carryover storage of about 495,200 AF at the end of the water year would be 82 percent of average and 49 percent of capacity.

### **Reasonable Minimum Condition WY 2014**

#### **October - March**

Planned water release for this period under a reasonable minimum inflow condition will be the same as in the most probable condition at approximately 530 cfs. 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 154,600 AF for the period, which is 26,500 AF less than the most probable condition. The March 31 reservoir content is expected to be approximately 289,400 AF under these conditions.

#### **April – September**

Seminole water releases will be at 530 cfs for April, increasing to 1,150 cfs for May - August in order to meet irrigation requirements and provide increased power production. Under a minimum condition the June content will be approximately 419,000 AF, and the water year will end with a content of 264,000 AF which is 44 percent of average and 26 percent of capacity.

### **Reasonable Maximum Condition WY 2014**

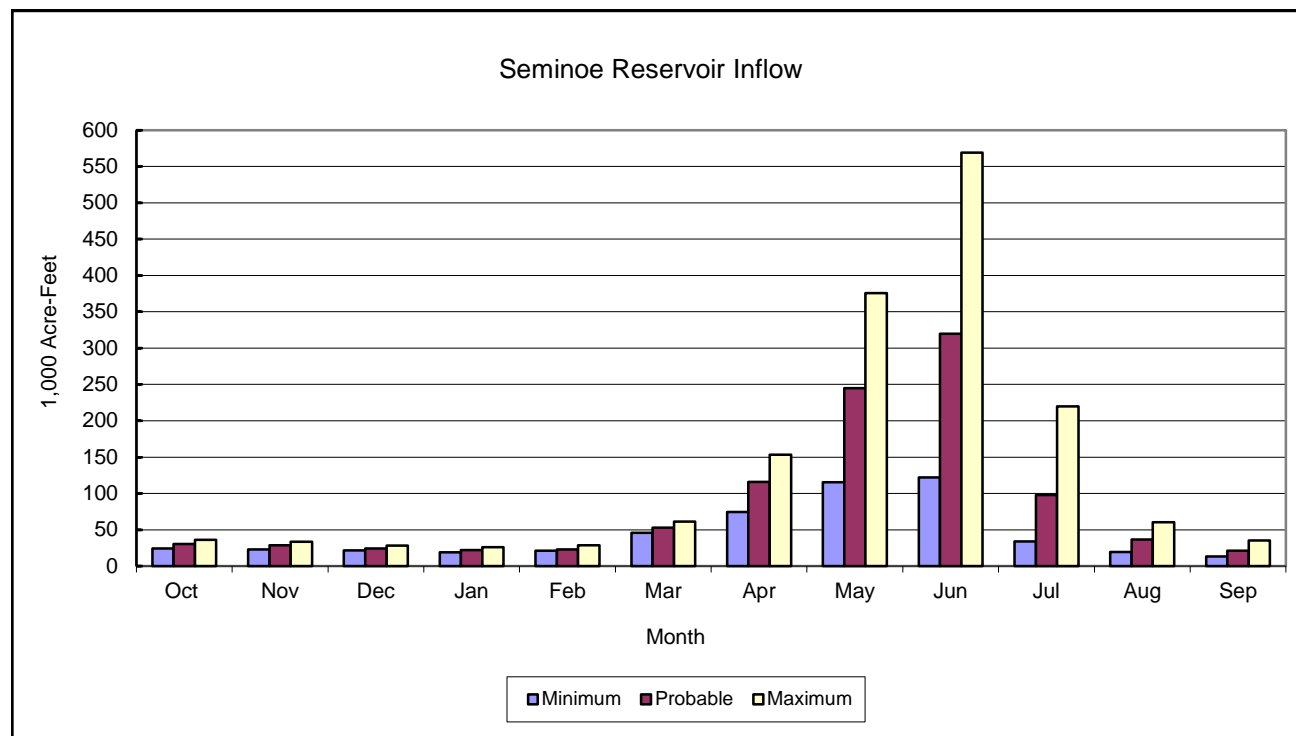
#### **October – March**

Planned water releases for this period under a reasonable maximum inflow condition are similar to the most probable condition as water is moved downstream to generate power and make room in Seminole Reservoir for spring runoff. Although inflows to Seminole Reservoir are higher under these conditions, actual changes in winter operations are made gradually until it is evident that the inflow quantities being experienced are showing a trend towards the reasonable

maximum inflows for the water year. October - March inflows under this condition would be 213,800 AF, which is 32,700 AF more than the most probable runoff condition. The reservoir content would increase from 320,300 AF at the end of March to 925,100 AF by the end of August under these conditions.

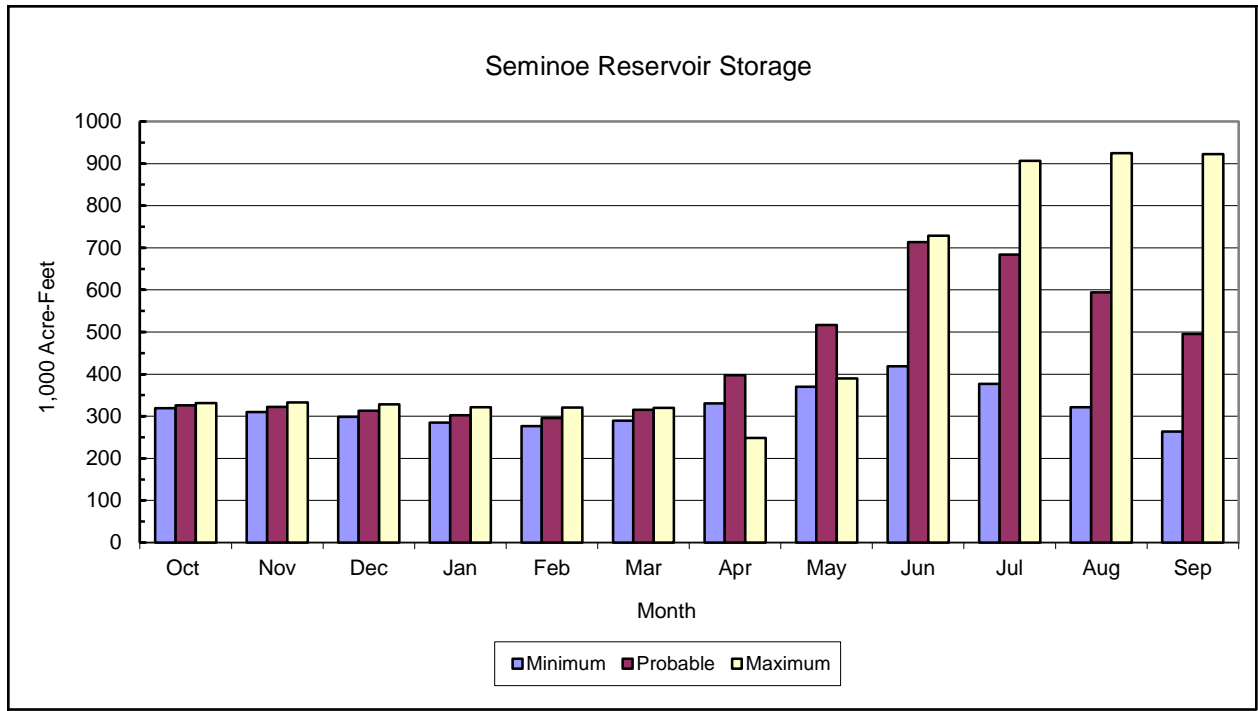
#### **April – September**

Seminole Reservoir release for March will be 1,000 cfs, then releases will increase to about 3,750 cfs in April - June, and decrease to 530 cfs July - September. Inflows for the April - July period will be 1,317,900 AF, which is 539,600 AF more than the most probable runoff condition. Seminole Reservoir will reach its maximum end of month content for the year in August with approximately 925,100 AF in storage. This plan of operation would result in an end of year carryover storage of 922,600 AF, which would be 154 percent of average and 91 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 WY 2014)





**Figure 13.** Seminole Reservoir Storage (Predicted for WY 2014)

## Pathfinder Reservoir

### Most Probable Condition WY 2014

#### October – March

Pathfinder Reservoir had a storage of 308,956 AF at the beginning of WY 2014, which is 64 percent of the 30 year average and 29 percent of capacity. Under this condition, gains to the river between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are expected to be 32,00 AF for the October-March period under the most probable inflow conditions. Fremont Canyon Powerplant releases will be reduced during October to allow Alcova Reservoir water surface level to be lowered to  $5488.0 \pm 1.0$  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 357,600 AF at the end of March.

#### April – September

Pathfinder Reservoir storage will reach a maximum content of about 360,600 AF by the end of June and be drawn down to a storage content of about 341,800 AF by the end of the WY, which would be 70 percent of average. River gain between Kortes and Pathfinder Reservoirs, including the Sweetwater River, is estimated at about 72,700 AF for the April-July period under most probable inflow conditions. In April, Fremont Canyon Powerplant releases will be coordinated with Alcova releases to refill Alcova Reservoir to its normal summer operating range of  $5498 \pm 1$  foot.

### **April – 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 April to approximately 900 cfs and then be increased to approximately 2,100 cfs for May, then 2,200 for June - August. Releases will be reduced in September to approximately 1,800 cfs.

## **Reasonable Minimum Condition WY 2014**

### **October – March**

Water releases for this period under a reasonable minimum inflow condition would be the same as in the most probable condition. Under this condition, gains to the river between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are expected to be 6,500 AF for the October-March period under the minimum inflow conditions. Pathfinder Reservoir storage will reach about 332,600 AF by the end of March. Fremont Canyon Powerplant releases for the period will be scheduled to maintain approximately 156,000 AF of water in Alcova Reservoir.

### **April – September**

River gains between Kortes Dam and Pathfinder Reservoir, including the Sweetwater River, are estimated at about 23,300 AF for the April-July period under reasonable minimum inflow conditions. In April, releases will be coordinated with Alcova releases to refill Alcova Reservoir to its normal summer operating range of 5498 ft  $\pm$  1 foot by the end of April.

### **April – September**

Fremont Canyon power releases will be scheduled to meet Kendrick Project and downstream irrigation deliveries and maintain a storage content of approximately 179,400 AF in Alcova Reservoir. The highest summer releases will be approximately 1,600 cfs, during July, and then reduced as irrigation demands drop off to end the WY at approximately 620 cfs during September. If reasonable minimum runoff develops, the reservoir content at the end of the water year will be about 186,100 AF, which would be 38 percent of average and 17 percent of capacity.

## **Reasonable Maximum Condition WY 2014**

### **October – March**

Water releases for this period under a reasonable maximum inflow condition would be similar to the most probable condition. Under this condition, gains between Kortes Dam and Pathfinder Dam would be expected to be 46,500 AF for the period. Pathfinder Reservoir content increases through this period from 339,800 AF at the end of October to 400,900 AF by the end of March.

### **April – September**

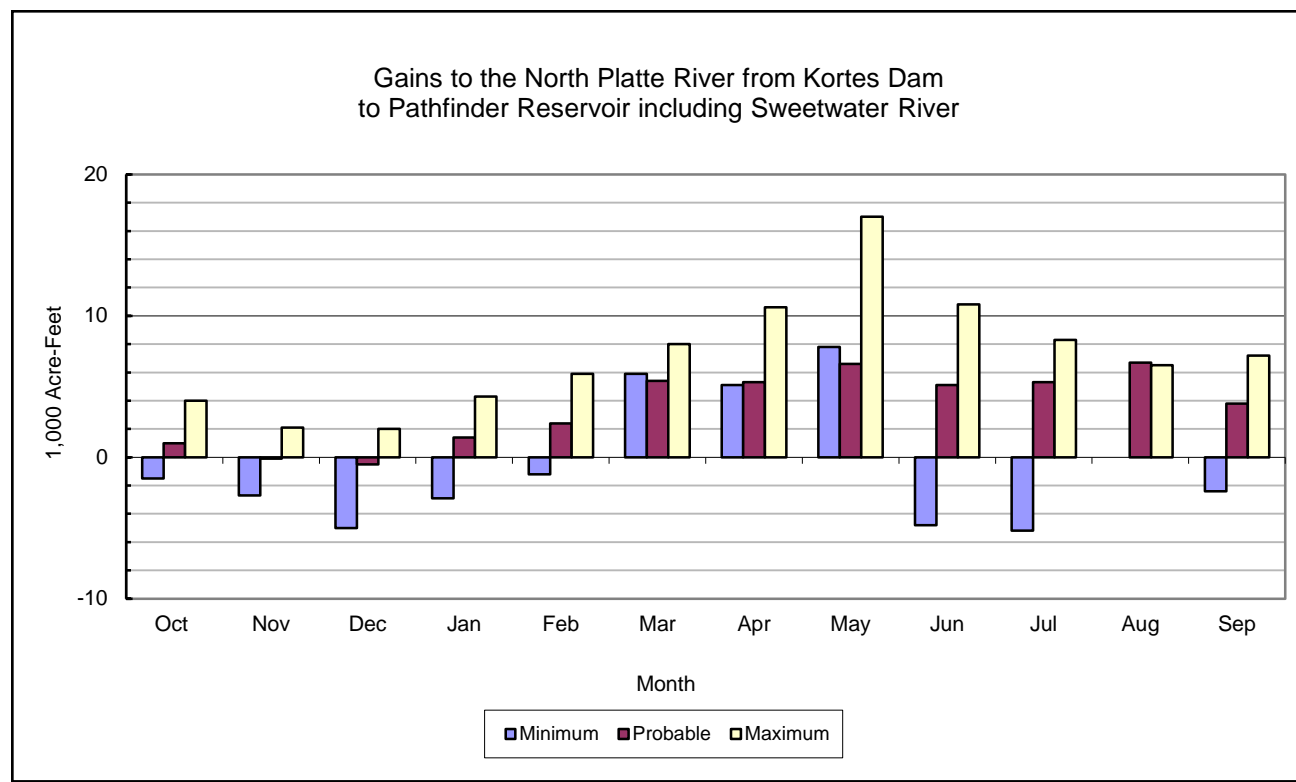
In April, water releases from Fremont Canyon Powerplant will be increased as Alcova Reservoir is refilled to water surface elevation 5498  $\pm$  1 foot. The rate of release will be increased through the summer as needed to meet downstream irrigation demands. Pathfinder Reservoir would reach a maximum content of 1,058,800 AF at the end of June. Releases will increase to

approximately 900 cfs in April and decrease in May and June, then increase to 1,900 cfs for July and August before declining to 1800 cfs in September.

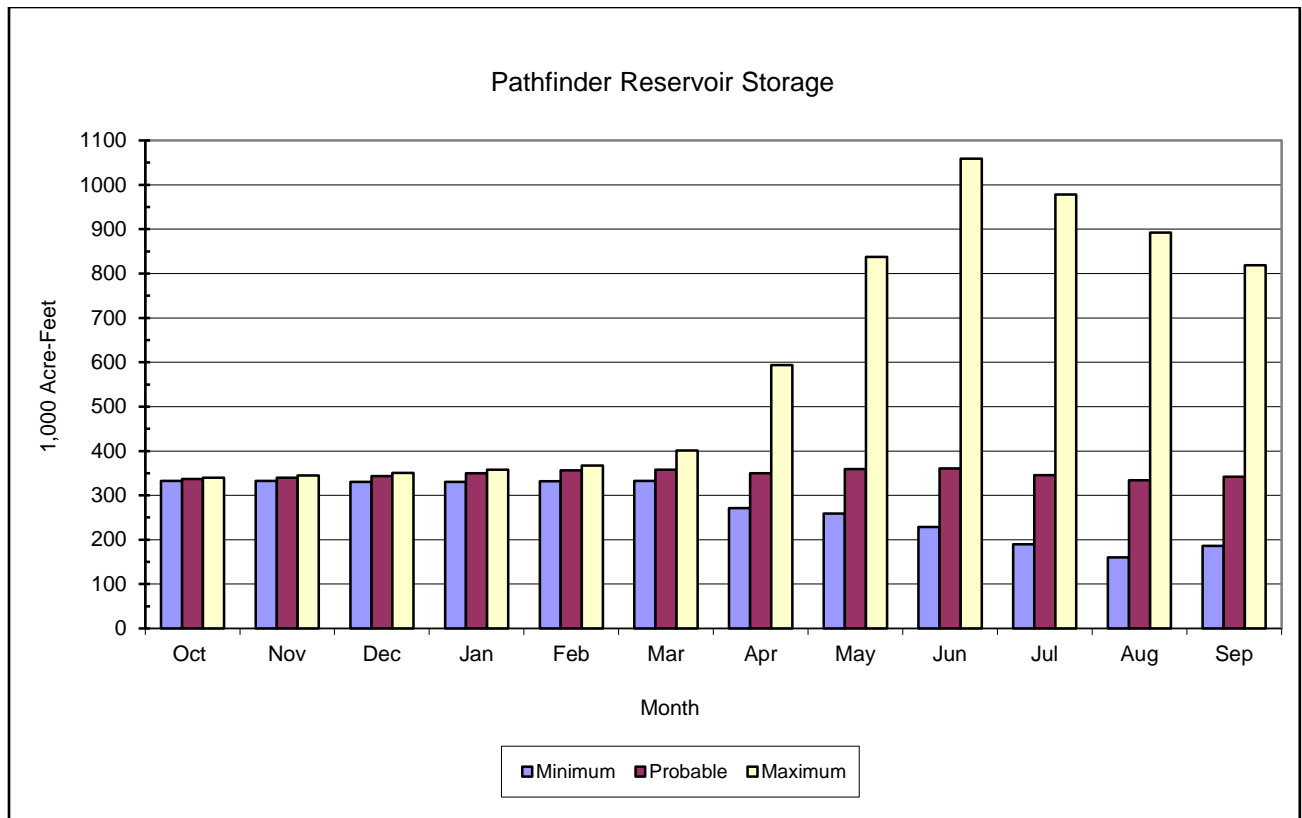
The Pathfinder Reservoir end of year storage content is projected to be about 819,100 AF, which would be 169 percent of average, and 76 percent of capacity.

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 WY 2014)



**Figure 15.** Pathfinder Reservoir Storage (Predicted for WY 2014)

## **Alcova Reservoir**

### **Most Probable Condition WY 2014**

#### **October – March**

During October, Alcova Reservoir will be drawn down to the normal winter operating range of  $5488.0 \pm 1$  foot and will be maintained there through March. October - February releases will be maintained at approximately 500 cfs for production of power, maintenance of fishery flows, pollution abatement, and transfer of water to Glendo Reservoir in preparation for meeting downstream irrigation demands during the coming irrigation season. Provisions have been made in the plan to increase the releases from Alcova during March for a flushing flow below Gray Reef Reservoir.

#### **April – September**

During April, the reservoir will be refilled to water surface elevation 5,498 feet (179,400 AF). This level will be maintained within  $\pm 1$  foot to provide the necessary water surface elevation to make irrigation deliveries to Casper Canal and for recreational purposes. About 60,000 AF of water are scheduled to be delivered during the May-September period to meet Kendrick Project irrigation requirements. In addition April releases to the river are scheduled to be approximately 29,800 AF and May-September releases to the river from Alcova Reservoir will total approximately 577,000 AF which will be re-regulated in Gray Reef Reservoir.

### **Reasonable Minimum Condition WY 2014**

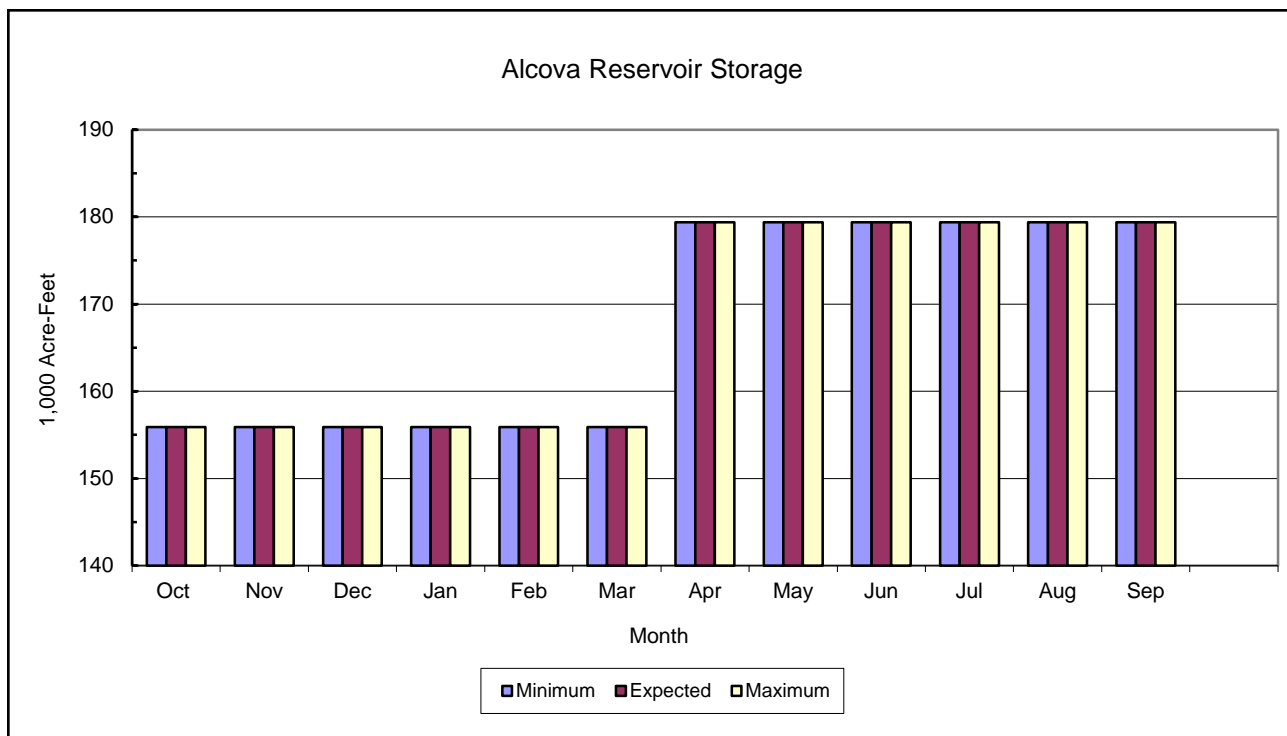
#### **October – September**

Operation of Alcova Reservoir would be the same as under the most probable condition, with about 60,000 AF of water are scheduled to be delivered during the May-September period to meet Kendrick Project irrigation requirements. However April releases are scheduled to be approximately 80,300 AF, and May-September releases to the North Platte River from Alcova Reservoir will total approximately 359,400 AF. Water released from Alcova Reservoir will be re-regulated in Gray Reef Reservoir.

### **Reasonable Maximum Condition WY 2014**

#### **October – September**

Operation of Alcova Reservoir would be the same as under the most probable condition, with about 60,000 AF of water are scheduled to be delivered during the May-September period to meet Kendrick Project irrigation requirements. However April releases would be approximately 29,800 AF, and May-September releases to the North Platte River from Alcova Reservoir will total approximately 362,000 AF. Figure 16 depicts a comparison of Minimum, Most Probable, and Maximum Alcova Storage.



**Figure 16** Alcova Reservoir Storage (Predicted for WY 2014)

## Gray Reef Reservoir

### Most Probable Condition WY 2014

#### **October – March**

Releases October - February from Gray Reef Dam will be maintained at approximately 500 cfs.

#### **April – September**

Releases from Gray Reef Reservoir will increase to 1,950 cfs in May and continue through August. The releases will be decreased to approximately 1,700 cfs in September as project irrigation water is moved downstream.

### Reasonable Minimum Condition WY 2014

#### **October – March**

Operation of Gray Reef Reservoir would be the same as under the most probable condition through March.

#### **April – September**

Releases from Gray Reef Reservoir will be approximately 1,350 cfs in April -August. The releases will be decreased to 500 cfs in September as project irrigation water is moved downstream. These predicted flows may be redistributed as the irrigators adjust their use of water from storage.

## **Reasonable Maximum Condition WY 2014**

### **October – March**

Operation of Gray Reef Reservoir would be the same as under the most probable condition through March.

### **April – September**

A release of 500 cfs will be started in April, then increase to 1,650 cfs in July and continue through September.

## **Glendo and Guernsey Reservoirs**

### **Most Probable Condition WY 2014**

### **October – March**

Glendo Reservoir had a storage of 134,544 AF at the beginning of WY 2014, which is 109 percent of average and 26 percent of capacity. With restorage of North Platte Project water released from Alcova and with North Platte River gains below Alcova Dam estimated to be normal, Glendo Reservoir storage will increase to about 378,000 AF by the end of March, which will be 95 percent of average and 73 percent of capacity.

A new area capacity table for Glendo Reservoir, based upon a recent silt survey was applied on September 30, 2013. This resulted in a reduced capacity with the top of active conservation being 492,022 AF at elevation 4635 feet.

The Glendo Dam outlet works low flow valve is shut off in late September 2014, to reduce inflows into Guernsey Reservoir in order to maintain the level of Guernsey Reservoir below the 4400 ft elevation required for Safety of Dams work at Guernsey Dam.

Guernsey Reservoir had a storage of 1,868 AF at the beginning of WY 2014. Natural inflow will be stored during the winter which is expected to increase storage to 22,000 AF by March 31.

### **April – September**

During April, releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. Maximum Glendo Reservoir storage will be about 456,100 AF by the end of May. Releases from Glendo Reservoir during the May - September period will be based upon meeting irrigation demand.

Guernsey Reservoir content will be maintained near 27,400 AF during May - July. A possible silt run in July will require close coordination of Glendo and Guernsey release schedules as Guernsey Reservoir is drawn down to about 1,000 AF in August during the silt run and refilled to about 9,700 AF following the silt run. Releases for delivery of irrigation water will draw down Glendo Reservoir to about 109,300 AF by the end of September. During September Guernsey Reservoir will be lowered to approximately zero AF.

## **Reasonable Minimum Condition WY 2014**

### **October – March**

Guernsey Reservoir had a storage of 1,868 AF at the beginning of WY 2014. Under the reasonable minimum inflow conditions, the natural inflow will be stored during the winter which will increase the Guernsey Reservoir content to 22,000 AF by March 31. Glendo Reservoir content will increase from the carryover storage of 134,544 AF to a March 31 content of 355,800 AF.

### **April – September**

During April, releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. Glendo Reservoir storage will increase to about 480,200 AF by the end of May.

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 359,400 AF lower than most probable conditions by the end of the WY under reasonable minimum water supply conditions.

Guernsey Reservoir content will be maintained near 35,000 AF during April, May and June. A possible silt run in July will require close coordination of Glendo and Guernsey release schedules. September releases will be made to meet irrigation requirements leaving 124,900 AF of water in Glendo Reservoir at years end. Guernsey Reservoir content on September 30 will be 5,000 AF under minimum conditions.

## **Reasonable Maximum Condition WY 2014**

### **October – March**

Guernsey Reservoir had a storage of 1,868 AF at the beginning of WY 2014. Under the reasonable maximum inflow conditions, the natural inflow will be stored during the winter, which will increase the reservoir content to 22,000 AF by March 31. Glendo Reservoir content is expected to increase from the starting content of 134,544 AF to an end of March content of 379,900 AF.

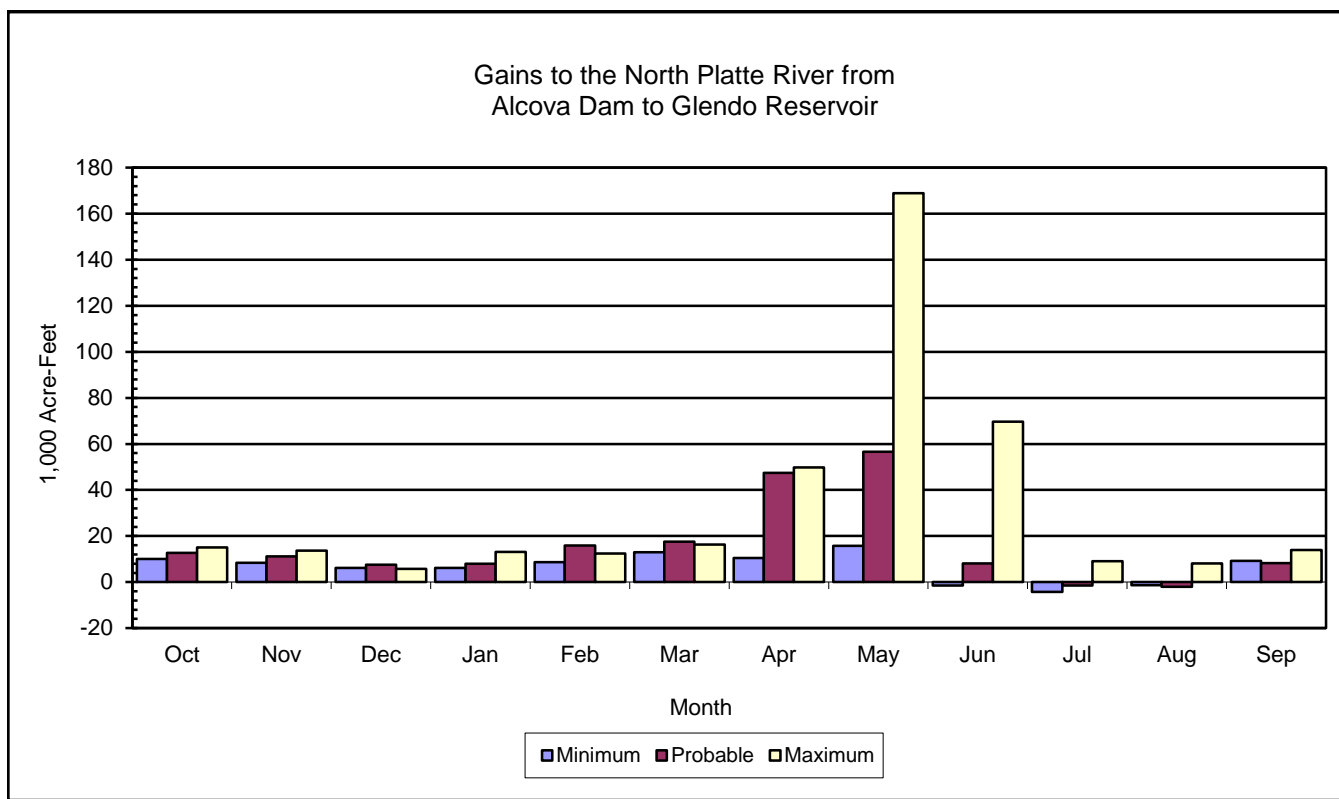
### **April – September**

Under maximum conditions, re-regulation water would be released as natural flow to meet irrigation demands until the supply is used as required. A total of 1,027,500 AF of water would be released from Guernsey Reservoir under reasonable maximum conditions. Guernsey Reservoir content would reach a maximum end of month content of 28,000 AF in April and remain as such through August. Under reasonable maximum conditions Glendo Reservoir will increase to peak storage of 492,500 AF in May. During September, releases will be scheduled to lower Guernsey Reservoir to approximately 15,000 AF.

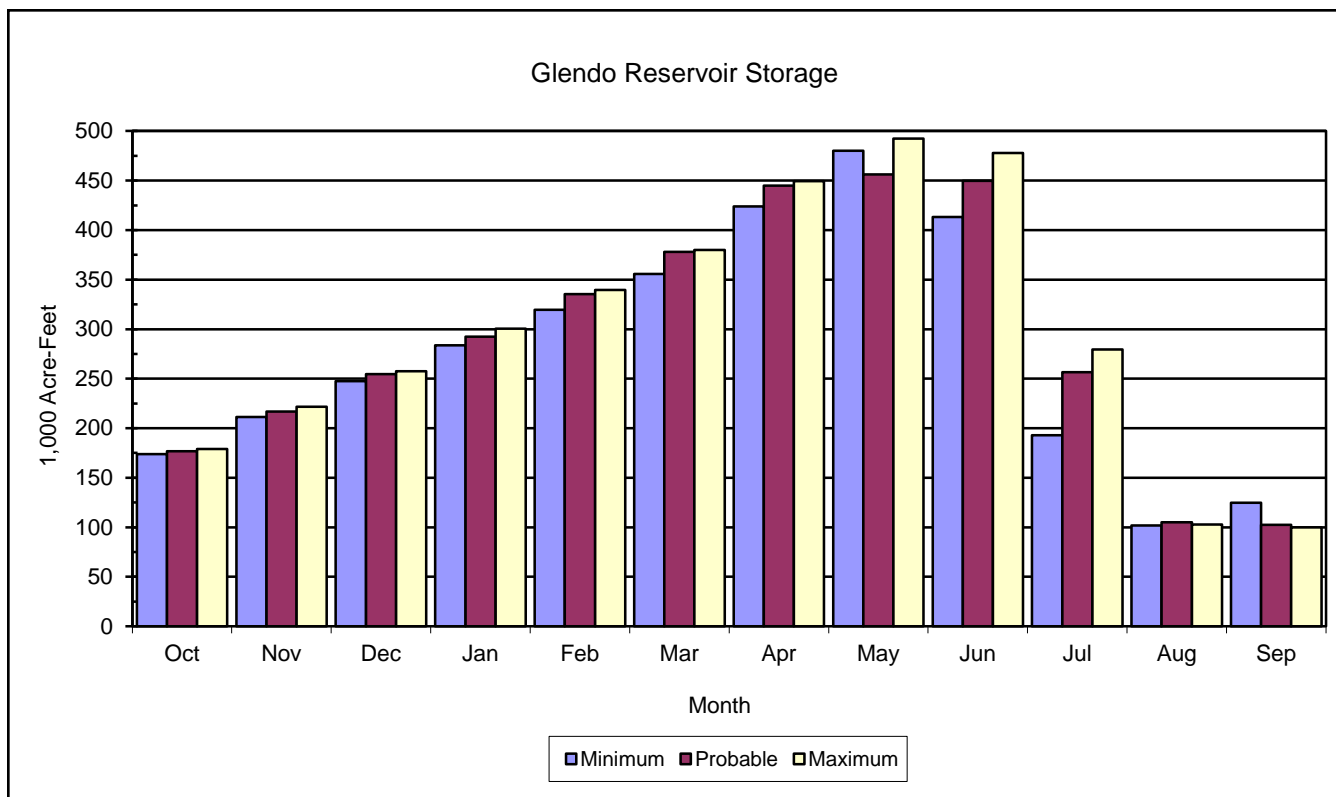


The operating plan shown assumes no downstream flow restrictions and normal irrigation deliveries. Glendo storage is projected to decrease to about 279,400 AF by the end of July and will be about 100,000 AF by the end of September. This end of year Glendo storage would be 81 percent of average and the Total System storage at the end of the water year would be 2,040,400 AF, 146 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 WY 2014)



**Figure 18.** Glendo Reservoir Storage (Predicted for WY 2014)

## Ownerships

### Most Probable Condition WY 2014

Stored water which is held in accounts for various entities is referred to as their ownership. At the close of WY 2014, the North Platte Project storage ownership is expected to be at 359,500 AF (92 percent of average); the Kendrick Project storage ownership is expected to be near 658,900 AF (76 percent of average). Glendo storage ownership at the end of WY 2014 is expected to be 102,100 AF (80 percent of average). The Kendrick Project ownership will not accrue any water under the Most Probable condition. Only North Platte Guernsey ownership will fill under most probable conditions.

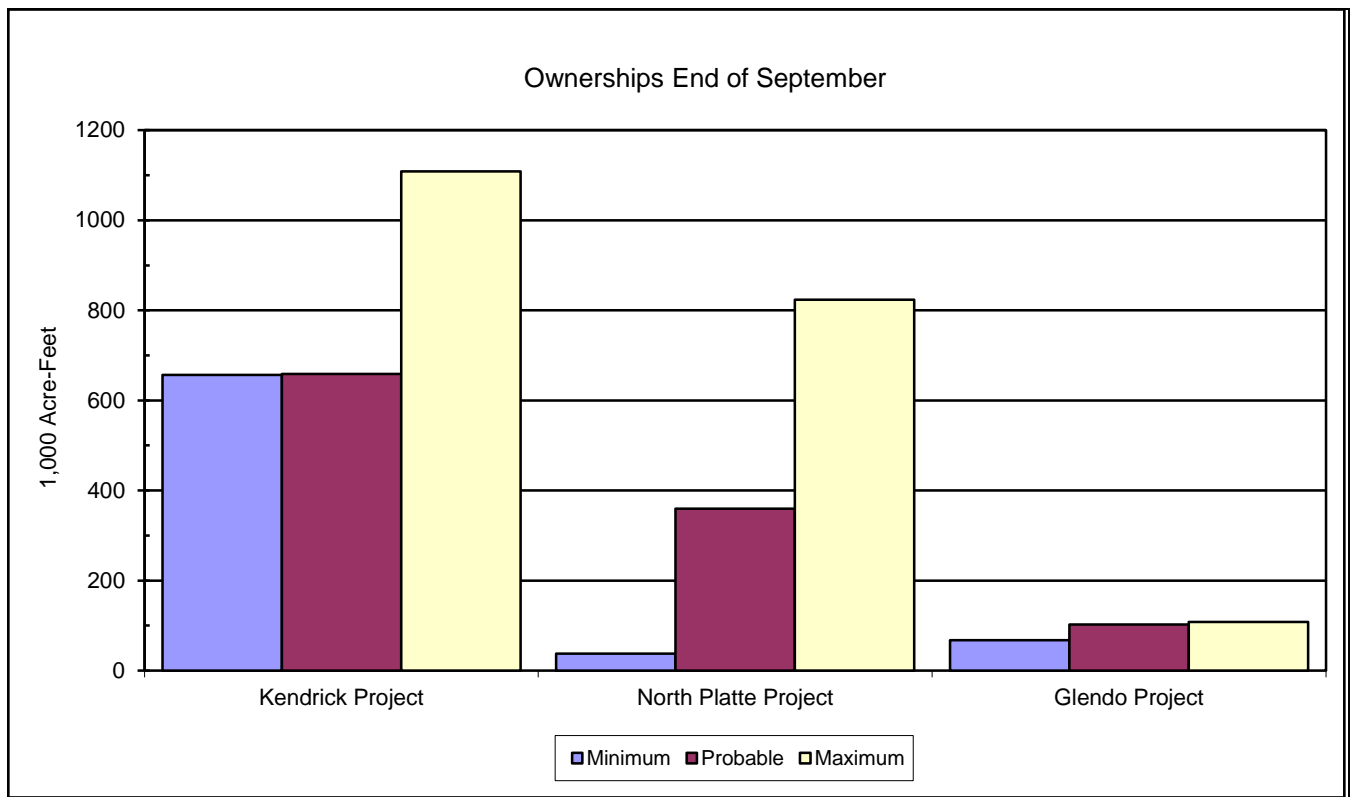
### Reasonable Minimum Condition WY 2014

The North Platte Project storage ownership is expected to be at 37,800 AF (10 percent of average) at the close of WY 2014. The North Platte Project ownership will not fill under minimum conditions. The Kendrick Project storage ownership is expected to be near 656,300 AF which is 75 percent of average at the close of the WY. The Kendrick Project ownership will not accrue any water under the reasonable minimum conditions. Glendo storage ownership is expected to be near 67,200 AF (53 percent of average) at the close of WY 2014 under the reasonable minimum runoff conditions.

### Reasonable Maximum Condition WY 2014

Under reasonable maximum conditions Pathfinder and Guernsey storage water ownerships will fill during the WY 2014. About 81,000 AF will be captured in the reservoirs as re-regulation water in the North Platte System under maximum condition. The water in the operational/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 Ownership.



**Figure 19.** Ownerships at the End of September (Predicted for WY 2014)

### Most Probable Generation WY 2014

The most probable power generation for WY 2014 will be above average for Seminoe, Kortes, and Alcova Powerplants on the North Platte River Basin. See Table 13 for a breakdown of generation by powerplant.

**Table 13.** Most Probable Power Generation WY 2014

Powerplant	Gross generation <sup>1</sup> (GWh)	Percent of Average <sup>2</sup>
Seminoe	126.4	94
Kortes	139.8	101
Fremont Canyon	201.5	89
Alcova	110.7	95
Glendo	80.6	97
Guernsey	18.0	96
Total Basin	677.0	94

<sup>1</sup> Gross generation is based on October 2013 storage and most probable inflow.

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

<sup>2</sup> 30 year average (1983-2012)

The Operation and Maintenance Division (O&M) creates a schedule of maintenance for all generating units. See Table 14 for the maintenance schedule for WY 2014. The O&M maintenance schedule is updated throughout the WY but only the October schedule is used for publication.

**Table 14.** Proposed Generating Unit Maintenance Schedule (October 2013 - September 2014)

<b><u>Facility and Unit No.</u></b>	<b><u>Scheduled Period</u></b>	<b><u>Description of Work</u></b>
Seminole Unit #1	12-12-13 through 01-30-14	Annual Maintenance
Seminole Unit #2	11-14-13 through 12-12-13	Annual Maintenance
Seminole Unit #3	09-23-13 through 10-30-13	Annual Maintenance
Kortes Unit #1	04-10-14 through 05-15-14	Annual Maintenance
Kortes Unit #2	02-27-14 through 04-17-14	Annual Maintenance
Kortes Unit #3	02-03-14 through 03-06-14	Annual Maintenance
Fremont Unit #1	12-02-13 through 12-19-13	Annual Maintenance
Fremont Unit #2	10-08-13 through 11-21-13	Annual Maintenance
Alcova Unit #1	03-04-14 through 03-28-14	Annual Maintenance
Alcova Unit #2	01-02-14 through 02-28-14	Annual Maintenance
Glendo Unit #1	12-03-13 through 12-17-13	Annual Maintenance
Glendo Unit #2	02-04-14 through 02-20-14	Annual Maintenance
Guernsey Unit #1	11-05-13 through 11-26-13	Annual Maintenance
Guernsey Unit #2	01-06-14 through 01-23-14	Annual Maintenance

**Table 15. Most Probable Operating Plan for WY 2014**

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Based on Most Probable April-July Inflow Estimates: : Seminoe 778 KAF / Sweetwater 50 KAF / Alcova-Glendo 111 KAF

NORTH PLATTE RIVER OPERATING PLAN  
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HYDROLOGY OPERATIONS

Seminoe Reservoir Operations		Initial Content 330.2 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	30.3	28.7	24.1	22.1	23.0	52.9	115.8	244.8	319.8	97.9	36.6	21.0
Total Inflow	cfs	493.	482.	392.	359.	414.	860.	1946.	3981.	5374.	1592.	595.	353.
Turbine Release	kaf	32.7	31.4	32.5	32.5	29.3	32.5	31.4	119.7	115.9	119.7	119.7	115.9
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	32.7	31.4	32.5	32.5	29.3	32.5	31.4	119.7	115.9	119.7	119.7	115.9
Total Release	cfs	532.	528.	529.	529.	528.	529.	528.	1947.	1948.	1947.	1947.	1948.
Evaporation	kaf	2.4	1.3	0.7	0.7	0.7	1.4	2.9	3.4	6.9	8.5	6.8	4.3
End-month content	kaf	325.7#	322.0	313.3	302.5	295.8	315.6	397.6#	516.8	713.8	683.6	594.1	495.2*
End-month elevation	ft	6306.1	6305.7	6304.6	6303.3	6302.4	6304.9	6314.1	6325.3	6339.9	6337.9	6331.5	6323.4
Kortes Reservoir Operations		Initial Content 4.6 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	31.4	32.5	32.5	29.3	32.5	31.4	119.7	115.9	119.7	119.7	115.9
Total Inflow	cfs	532.	528.	529.	529.	528.	529.	528.	1947.	1948.	1947.	1947.	1948.
Turbine Release	kaf	32.5	31.4	32.5	32.5	29.3	32.5	31.4	119.7	115.9	119.7	119.7	115.9
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	31.4	32.5	32.5	29.3	32.5	31.4	119.7	115.9	119.7	119.7	115.9
Total Release	cfs	529.	528.	529.	529.	528.	529.	528.	1947.	1948.	1947.	1947.	1948.
Pathfinder Reservoir Operations		Initial Content 309.0 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	3.1	3.6	3.5	3.6	3.8	4.8	12.6	17.4	15.6	4.8	2.3	1.4
Kortes-Path Gain	kaf	1.0	-0.1	-0.5	1.4	2.4	5.4	5.3	6.6	5.1	5.3	6.7	3.8
Inflow from Kortes	kaf	32.5	31.4	32.5	32.5	29.3	32.5	31.4	119.7	115.9	119.7	119.7	115.9
Total Inflow	kaf	36.6	34.9	35.5	37.5	35.5	42.7	49.3	143.7	136.6	129.8	128.7	121.1
Total Inflow	cfs	595.	587.	577.	610.	639.	694.	829.	2337.	2296.	2111.	2093.	2035.
Turbine Release	kaf	2.0	25.6	26.4	26.3	23.8	35.2	49.6	126.2	125.0	134.0	130.7	104.8
Jetflow Release	kaf	4.6	4.5	4.6	4.6	4.2	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	6.6	30.1	31.0	30.9	28.0	39.8	54.1	130.8	129.5	138.6	135.3	109.3
Total Release	cfs	107.	506.	504.	503.	504.	647.	909.	2127.	2176.	2254.	2200.	1837.
Evaporation	kaf	2.4	1.4	0.8	0.7	0.8	1.6	3.0	3.7	5.5	6.0	5.2	4.0
End-month content	kaf	336.6	340.0	343.7	349.6	356.3	357.6	349.8	359.0	360.6	345.8	334.0	341.8
End-month elevation	ft	5804.6	5805.0	5805.4	5806.1	5806.8	5806.9	5806.1	5807.1	5807.3	5805.7	5804.3	5805.2
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	6.6	30.1	31.0	30.9	28.0	39.8	54.1	130.8	129.5	138.6	135.3	109.3
Total Inflow	cfs	107.	506.	504.	503.	504.	647.	909.	2127.	2176.	2254.	2200.	1837.
Turbine Release	kaf	30.5	29.8	30.8	30.7	27.8	39.4	29.8	119.8	116.1	120.0	119.9	101.2
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	12.0	17.0	14.0	7.0
Total Release	kaf	30.5	29.8	30.8	30.7	27.8	39.4	29.8	129.8	128.1	137.0	133.9	108.2
Total Release	cfs	496.	501.	501.	499.	501.	641.	501.	2111.	2153.	2228.	2178.	1818.
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 WY 2014**

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Based on Most Probable April-July Inflow Estimates: : Seminole 778 KAF / Sweetwater 50 KAF / Alcova-Glendo 111 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2013

Gray Reef Reservoir Operations				Initial Content		1.3 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	30.5	29.8	30.8	30.7	27.8	39.4	29.8	119.8	116.1	120.0	119.9	101.2
Total Inflow	cfs	496.	501.	501.	499.	501.	641.	501.	1948.	1951.	1952.	1950.	1701.
Total Release	kaf	30.7	29.8	30.8	30.7	27.8	39.4	29.8	119.8	116.0	119.9	119.8	101.1
Total Release	cfs	499.	501.	501.	499.	501.	641.	501.	1948.	1949.	1950.	1948.	1699.
Glendo Reservoir Operations				Initial Content		134.5 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	12.7	11.2	7.5	8.0	15.9	17.5	47.4	56.6	8.1	-1.5	-2.1	8.3
Infl from Gray Reef	kaf	30.7	29.8	30.8	30.7	27.8	39.4	29.8	119.8	116.0	119.9	119.8	101.1
Total Inflow	kaf	43.4	41.0	38.3	38.7	43.7	56.9	77.2	176.4	124.1	118.4	117.7	109.4
Total Inflow	cfs	706.	689.	623.	629.	787.	925.	1297.	2869.	2086.	1926.	1914.	1839.
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	11.0	5.5	159.0	122.6	224.4	217.2	107.8
Low Flow Release	kaf	0.0	0.0	0.0	0.0	0.0	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	79.0	44.5	0.0
Total Release	kaf	0.0	0.0	0.0	0.0	0.0	12.5	7.0	160.5	124.1	304.9	263.2	109.3
Total Release	cfs	0.	0.	0.	0.	0.	203.	118.	2610.	2086.	4959.	4281.	1837.
Evaporation	kaf	1.2	0.8	0.7	0.7	0.8	1.8	3.2	4.8	6.5	6.2	3.7	1.9
End-month content	kaf	176.7*	216.9	254.5	292.5	335.4*	378.0*	445.0*	456.1	449.6	256.4	105.2*	102.4*
End-month elevation	ft	4599.2	4605.3	4610.4	4615.1	4620.0	4624.5	4630.9	4631.9	4631.3	4610.6	4585.3	4584.6
Guernsey Reservoir Operations				Initial Content		1.9 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	3.4	2.1	1.8	1.4	1.3	0.6	5.9	8.3	2.9	2.2	0.0	5.2
Inflow from Glendo	kaf	0.0	0.0	0.0	0.0	0.0	12.5	7.0	160.5	124.1	304.9	263.2	109.3
Total Inflow	kaf	3.4	2.1	1.8	1.4	1.3	13.1	12.9	168.8	127.0	307.1	263.2	114.5
Total Inflow	cfs	55.	35.	29.	23.	23.	213.	217.	2745.	2134.	4995.	4281.	1924.
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	6.6	53.7	51.9	53.7	56.3	59.9
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	113.2	71.1	249.2	221.2	63.8
Total Release	kaf	0.3	0.2	0.3	0.4	0.3	0.3	7.0	168.1	126.0	306.0	280.0	124.0
Total Release	cfs	5.	3.	5.	7.	5.	5.	118.	2734.	2117.	4977.	4554.	2084.
Evaporation	kaf	0.1	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1.0	1.1	0.9	0.2
End-month content	kaf	4.9	6.6	7.9	8.7	9.5#	22.0*	27.4*	27.4*	27.4*	27.4*	9.7*	0.0
End-month elevation	ft	4394.3	4396.7	4398.2	4399.0	4399.8	4408.7	4411.6	4411.6	4411.6	4411.6	4400.0	4370.0
Physical EOM Cont	kaf	1005.7	1047.3	1081.2	1115.1	1158.8	1235.0	1405.1	1544.6	1736.7	1498.5	1228.3	1124.7

**Table 15. (Continued) Most Probable Operating Plan for WY 2014**

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Based on Most Probable April-July Inflow Estimates Seminoe 778 KAF / Sweetwater 50 KAF / Alcova-Glendo 111 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2013

OWNERSHIP OPERATIONS

North Platte Pathfinder		Initial Ownership 77.2 Kaf, Accrued this WY: 345.5 Kaf											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	33.9	31.8	26.7	26.7	28.7	62.1	131.3	199.7	216.9	0.0	0.0	0.0
Evaporation	kaf	0.5	0.4	0.4	0.4	0.5	1.0	2.4	4.0	8.6	11.3	8.2	4.2
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	140.0	231.5	80.3
End-month Ownership	kaf	111.1	142.9	169.6	196.3	225.0	287.1	418.4	618.1	835.0	683.7	444.0	359.5
North Platte Guernsey		Initial Ownership 0.0 Kaf, Accrued this WY: 45.6 Kaf											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	0.0	0.0	9.0	9.0	16.9	10.1	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	0.5	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	43.0	0.0	0.0
End-month Ownership	kaf	0.0	0.0	9.0	18.0	34.9	45.0	44.6	44.2	43.6	0.0	0.0	0.0
Inland Lakes		Initial Ownership 0.0 Kaf, Accrued this WY: 46.0 Kaf											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	15.8	13.0	0.0	0.0	0.0	0.0	17.2	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.3	0.3	0.1	0.1	0.1	0.2	0.2	0.4	0.0	0.0	0.0	0.0
Trnsfr fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	7.0	38.1	0.0	0.0	0.0	0.0
End-month Ownership	kaf	15.8	28.8	28.7	28.6	28.5	28.3	38.5	0.0	0.0	0.0	0.0	0.0
Kendrick		Initial Ownership 785.6 Kaf, Accrued this WY: 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	5.6	3.1	1.9	1.8	1.9	3.7	6.5	7.4	10.3	9.8	8.4	6.3
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	12.0	17.0	14.0	7.0
End-month Ownership	kaf	780.0	776.9	775.0	773.2	771.3	767.6	761.1	743.7	721.4	694.6	672.2	658.9
Glendo Unit		Initial Ownership 91.9 Kaf, Accrued this WY: 10.6 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	7.5	27.5	0.0	0.0	0.0	0.0	0.0
Evaporation	kaf	0.6	0.4	0.2	0.2	0.2	0.4	0.8	1.2	1.7	1.6	1.4	1.1
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	91.3	90.9	90.7	90.5	90.3	97.4	124.1	122.9	121.2	113.6	107.2	102.1
Re-regulation		Initial Ownership 0.2 Kaf, Accrued this WY: 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	8.4	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0
End-month total	kaf	0.2	0.2	0.2	0.2	0.2	0.2	8.6	8.5	8.4	0.0	0.0	0.0



**Table 15. (Continued) Most Probable Operating Plan for WY 2014**

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Based on Most Probable April-July Inflow Estimates: Seminole 778 KAF / Sweetwater 50 KAF / Alcova-Glendo 111 KAF

NORTH PLATTE RIVER OPERATING PLAN  
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City of Cheyenne		Initial Ownership 2.5 Kaf,											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Inflow	kaf	0.3	0.3	0.4	0.3	0.3	0.8	0.5	0.5	0.5	0.5	0.4	0.3
Evaporation	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	0.4	0.0	0.0
Ownership	kaf	2.8	3.1	3.5	3.8	4.1	4.9	5.3	2.7	2.7	2.8	3.2	3.5
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	0.1	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	1.9	1.9
Other		Initial Ownership 2.6 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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.0	1.0
Ownership	kaf	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	1.8	-0.2	-1.2
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	12.0	17.0	14.0	7.0
Delivered	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	12.0	17.0	14.0	7.0
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	130.0	124.0	300.0	275.0	120.0
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	7.0	38.1	0.0	0.0	0.0	0.0
Total Requirement	kaf	0.0	0.0	0.0	0.0	0.0	0.0	7.0	168.1	126.0	306.0	280.0	124.0
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	7.0	168.1	126.0	306.0	280.0	124.0

**Table 15. (Continued) Most Probable Operating Plan for WY 2014**

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Based on Most Probable April-July Inflow Estimates: Seminole 778 KAF / Sweetwater 50 KAF / Alcova-Glendo 111 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2013

POWER GENERATION

Seminole Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		32.7	31.4	32.5	32.5	29.3	32.5	31.4	119.7	115.9	119.7	119.7	115.9
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		25.909	24.972	25.634	25.371	22.659	25.317	25.822	28.956	30.881	33.457	32.340	29.599
Actual generation gwh		4.555	4.361	4.494	4.462	3.997	4.455	4.465	18.194	19.008	20.175	19.751	18.444
Percent max generation		18.	17.	18.	18.	18.	18.	17.	63.	62.	60.	61.	62.
Average kwh/af		139.	139.	138.	137.	136.	137.	142.	152.	164.	169.	165.	159.
Kortes Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		32.5	31.4	32.5	32.5	29.3	32.5	31.4	119.7	115.9	119.7	119.7	115.9
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		29.085	26.712	27.606	27.606	24.940	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	5.040	5.590	5.401	20.588	19.935	20.588	20.588	19.935
Percent max generation		19.	20.	20.	20.	20.	20.	20.	75.	75.	75.	75.	75.
Average kwh/af		172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.
Fremont Canyon		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		2.0	25.6	26.4	26.3	23.8	35.2	49.6	126.2	125.0	134.0	130.7	104.8
Bypass kaf		4.6	4.5	4.6	4.6	4.2	4.6	4.5	4.6	4.5	4.6	4.6	4.5
Maximum generation gwh		41.646	40.545	41.968	42.049	38.058	42.200	40.785	42.165	40.865	42.149	41.935	40.538
Actual generation gwh		0.493	6.344	6.552	6.540	5.932	8.784	12.365	31.468	31.223	33.400	32.412	25.968
Percent max generation		1.	16.	16.	16.	16.	21.	30.	75.	76.	79.	77.	64.
Average kwh/af		247.	248.	248.	249.	249.	250.	249.	249.	250.	249.	248.	248.
Alcova Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		30.5	29.8	30.8	30.7	27.8	39.4	29.8	119.8	116.1	120.0	119.9	101.2
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		27.177	26.588	27.472	27.472	24.820	27.472	26.275	27.552	26.656	27.552	27.552	26.656
Actual generation gwh		4.212	4.053	4.189	4.175	3.781	5.358	4.112	16.772	16.254	16.800	16.786	14.168
Percent max generation		15.	15.	15.	15.	15.	20.	16.	61.	61.	61.	61.	53.
Average kwh/af		138.	136.	136.	136.	136.	136.	138.	140.	140.	140.	140.	140.
Glendo Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		0.0	0.0	0.0	0.0	0.0	11.0	5.5	159.0	122.6	224.4	217.2	107.8
Bypass kaf		0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	80.5	46.0	1.5
Maximum generation gwh		15.766	17.593	19.858	21.009	20.081	23.477	24.223	26.169	25.383	23.371	17.225	12.368
Actual generation gwh		0.000	0.000	0.000	0.000	0.000	1.149	0.598	17.759	13.715	23.371	17.225	6.734
Percent max generation		0.	0.	0.	0.	0.	5.	2.	68.	54.	100.	100.	54.
Average kwh/af		0.	0.	0.	0.	0.	104.	109.	112.	112.	104.	79.	62.
Guernsey Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		0.0	0.0	0.0	0.0	0.0	0.0	6.6	53.7	51.9	53.7	56.3	59.9
Bypass kaf		0.3	0.2	0.3	0.4	0.3	0.3	0.4	114.4	74.1	252.3	223.7	64.1
Maximum generation gwh		2.115	2.974	3.171	3.230	2.959	3.538	3.599	3.783	3.656	3.783	3.634	2.719
Actual generation gwh		0.000	0.000	0.000	0.000	0.000	0.000	0.454	3.783	3.656	3.783	3.634	2.719
Percent max generation		0.	0.	0.	0.	0.	0.	13.	100.	100.	100.	100.	100.
Average kwh/af		0.	0.	0.	0.	0.	0.	69.	70.	70.	70.	65.	45.

**Table 16. Reasonable Minimum Operating Plan for WY 2014**

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Based on April - July MINIMUM Inflow Estimates: Seminole 346 KAF / Sweetwater 21 KAF / Alcova-Glendo 21 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2013

HYDROLOGY OPERATIONS

Seminole Reservoir Operations		Initial Content 330.2 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	24.1	23.0	21.7	18.8	21.3	45.7	74.7	115.6	122.1	33.8	19.5	13.3
Total Inflow	cfs	392.	387.	353.	306.	384.	743.	1255.	1880.	2052.	550.	317.	224.
Turbine Release	kaf	32.7	31.4	32.5	32.5	29.3	32.5	31.4	70.7	68.4	70.7	70.7	68.4
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	32.7	31.4	32.5	32.5	29.3	32.5	31.4	70.7	68.4	70.7	70.7	68.4
Total Release	cfs	532.	528.	529.	529.	528.	529.	528.	1150.	1150.	1150.	1150.	1150.
Evaporation	kaf	2.4	1.3	0.7	0.6	0.6	1.3	2.6	2.8	4.9	5.5	4.3	2.8
End-month content	kaf	319.5#	310.1	299.0	285.0	276.7	289.4	330.6#	370.2	419.0	376.7	321.6	264.0*
End-month elevation	ft	6305.4	6304.2	6302.9	6301.1	6300.0	6301.6	6306.7	6311.2	6316.3	6311.9	6305.6	6298.2
Kortes Reservoir Operations		Initial Content 4.6 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	31.4	32.5	32.5	29.3	32.5	31.4	70.7	68.4	70.7	70.7	68.4
Total Inflow	cfs	532.	528.	529.	529.	528.	529.	528.	1150.	1150.	1150.	1150.	1150.
Turbine Release	kaf	32.5	31.4	32.5	32.5	29.3	32.5	31.4	70.7	68.4	70.7	70.7	68.4
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	31.4	32.5	32.5	29.3	32.5	31.4	70.7	68.4	70.7	70.7	68.4
Total Release	cfs	529.	528.	529.	529.	528.	529.	528.	1150.	1150.	1150.	1150.	1150.
Pathfinder Reservoir Operations		Initial Content 309.0 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	2.2	2.1	2.0	1.9	3.8	9.4	6.4	4.0	1.4	0.9	0.7
Kortes-Path Gain	kaf	-1.5	-2.7	-5.0	-2.9	-1.2	5.9	5.1	7.8	-4.8	-5.2	0.0	-2.4
Inflow from Kortes	kaf	32.5	31.4	32.5	32.5	29.3	32.5	31.4	70.7	68.4	70.7	70.7	68.4
Total Inflow	kaf	32.9	30.9	29.6	31.6	30.0	42.2	45.9	84.9	67.6	66.9	71.6	66.7
Total Inflow	cfs	535.	519.	481.	514.	540.	686.	771.	1381.	1136.	1088.	1164.	1121.
Turbine Release	kaf	2.0	25.6	26.3	26.3	23.8	35.2	100.1	89.4	89.3	97.1	93.8	33.5
Jetflow Release	kaf	4.6	4.5	4.6	4.6	4.2	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	6.6	30.1	30.9	30.9	28.0	39.8	104.6	94.0	93.8	101.7	98.4	38.0
Total Release	cfs	107.	506.	503.	503.	504.	647.	1758.	1529.	1576.	1654.	1600.	639.
Evaporation	kaf	2.4	1.3	0.7	0.7	0.7	1.5	2.7	2.9	4.1	4.1	3.3	2.5
End-month content	kaf	332.9	332.4	330.4	330.4	331.7	332.6	271.2	259.2	228.9	190.0	159.9	186.1
End-month elevation	ft	5804.2	5804.2	5803.9	5803.9	5804.1	5804.2	5796.7	5795.1	5790.8	5784.6	5779.4	5784.0
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	6.6	30.1	30.9	30.9	28.0	39.8	104.6	94.0	93.8	101.7	98.4	38.0
Total Inflow	cfs	107.	506.	503.	503.	504.	647.	1758.	1529.	1576.	1654.	1600.	639.
Turbine Release	kaf	30.5	29.8	30.7	30.7	27.8	39.4	80.3	83.0	80.4	83.1	83.0	29.9
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	12.0	17.0	14.0	7.0
Total Release	kaf	30.5	29.8	30.7	30.7	27.8	39.4	80.3	93.0	92.4	100.1	97.0	36.9
Total Release	cfs	496.	501.	499.	499.	501.	641.	1349.	1512.	1553.	1628.	1578.	620.
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 WY 2014**

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Based on April - July MINIMUM Inflow Estimates: Seminole 346 KAF / Sweetwater 21 KAF / Alcova-Glendo 21 KAF

NORTH PLATTE RIVER OPERATING PLAN  
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Gray Reef Reservoir Operations		Initial Content						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	30.5	29.8	30.7	30.7	27.8	39.4	80.3	83.0	80.4	83.1	83.0	29.9
Total Inflow	cfs	496.	501.	499.	499.	501.	641.	1349.	1350.	1351.	1351.	1350.	502.
Total Release	kaf	30.7	29.8	30.7	30.7	27.8	39.4	80.3	83.0	80.3	83.0	82.9	29.8
Total Release	cfs	499.	501.	499.	499.	501.	641.	1349.	1350.	1349.	1350.	1348.	501.
Glendo Reservoir Operations		Initial Content						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	10.0	8.4	6.2	6.2	8.6	12.9	10.5	15.8	-1.5	-4.2	-1.3	9.2
Infl from Gray Reef	kaf	30.7	29.8	30.7	30.7	27.8	39.4	80.3	83.0	80.3	83.0	82.9	29.8
Total Inflow	kaf	40.7	38.2	36.9	36.9	36.4	52.3	90.8	98.8	78.8	78.8	81.6	39.0
Total Inflow	cfs	662.	642.	600.	600.	655.	851.	1526.	1607.	1324.	1282.	1327.	655.
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	12.7	18.2	36.2	137.8	221.4	166.2	11.4
Low Flow Release	kaf	0.0	0.0	0.0	0.0	0.0	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	69.9	0.0	0.0
Total Release	kaf	0.0	0.0	0.0	0.0	0.0	14.2	19.7	37.7	139.3	292.8	167.7	12.9
Total Release	cfs	0.	0.	0.	0.	0.	231.	331.	613.	2341.	4762.	2727.	217.
Evaporation	kaf	1.2	0.8	0.7	0.7	0.8	1.7	3.0	4.8	6.5	5.7	3.2	1.9
End-month content	kaf	174.0*	211.4	247.6	283.8	319.4*	355.8*	423.9	480.2	413.2	193.0	101.7*	124.9#
End-month elevation	ft	4598.8	4604.5	4609.5	4614.0	4618.2	4622.2	4629.0	4634.0	4627.9	4601.8	4584.5	4589.7
Guernsey Reservoir Operations		Initial Content						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	2.4	1.7	1.3	1.0	1.2	1.3	0.0	2.8	-1.2	-3.6	-1.3	1.8
Inflow from Glendo	kaf	0.0	0.0	0.0	0.0	0.0	14.2	19.7	37.7	139.3	292.8	167.7	12.9
Total Inflow	kaf	2.4	1.7	1.3	1.0	1.2	15.5	19.7	40.5	138.1	289.2	166.4	14.7
Total Inflow	cfs	39.	29.	21.	16.	22.	252.	331.	659.	2321.	4703.	2706.	247.
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	5.8	38.4	50.9	52.9	53.3	38.7
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	0.0	83.0	236.9	109.7	0.0
Total Release	kaf	0.3	0.2	0.3	0.4	0.3	0.3	6.2	39.6	136.9	292.9	165.5	39.0
Total Release	cfs	5.	3.	5.	7.	5.	5.	104.	644.	2301.	4764.	2692.	655.
Evaporation	kaf	0.1	0.2	0.2	0.2	0.2	0.3	0.5	0.9	1.2	1.3	0.9	0.7
End-month content	kaf	3.9	5.2	6.0	6.4	7.1#	22.0*	35.0*	35.0*	35.0*	30.0*	30.0*	5.0*
End-month elevation	ft	4392.6	4394.8	4395.9	4396.4	4397.3	4408.7	4415.3	4415.3	4415.3	4412.9	4412.9	4394.5
Physical BOM Cont	kaf	992.1	1020.9	1044.8	1067.4	1096.7	1161.6	1246.0	1329.9	1281.4	975.0	798.5	765.3

**Table 16.** (Continued) Reasonable Minimum Operating Plan for WY 2014

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Based on April - July MINIMUM Inflow Estimates: Seminole 346 KAF / Sweetwater 21 KAF / Alcova-Glendo 21 KAF

NORTH PLATTE RIVER OPERATING PLAN  
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OWNERSHIP OPERATIONS

North Platte Pathfinder

Initial Ownership 77.2 Kaf, Accrued this WY: 345.5 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	24.0	22.1	18.5	17.6	21.6	54.6	87.2	126.6	0.0	0.0	0.0	0.0
Evaporation	kaf	0.5	0.4	0.3	0.3	0.4	0.8	2.0	3.2	6.1	6.3	2.7	0.6
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	240.8	142.7	12.4
End-month Ownership	kaf	101.2	123.3	141.8	159.4	181.0	235.6	322.8	449.4	443.3	196.2	50.8	37.8

North Platte Guernsey

Initial Ownership 0.0 Kaf, Accrued this WY: 45.6 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	0.0	0.0	7.2	6.8	9.5	13.8	0.0	4.0	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	0.4	0.6	0.4	0.0	0.0
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.1	23.9	0.0	0.0
End-month Ownership	kaf	0.0	0.0	7.2	14.0	23.5	37.3	37.0	41.0	24.3	0.0	0.0	0.0

Inland Lakes

Initial Ownership 0.0 Kaf, Accrued this WY: 46.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	12.1	9.8	0.0	0.0	0.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.3	0.3	0.1	0.1	0.1	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	6.2	25.4	0.0	0.0	0.0	0.0
End-month Ownership	kaf	12.1	21.9	21.8	21.7	21.6	21.5	25.6	0.0	0.0	0.0	0.0	0.0

Kendrick

Initial Ownership 785.6 Kaf, Accrued this WY: 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	5.6	3.1	1.9	1.8	1.8	3.7	6.3	7.6	10.2	10.3	9.4	7.6
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	12.0	17.0	14.0	7.0
End-month Ownership	kaf	780.0	776.9	775.0	773.2	771.4	767.7	761.4	743.8	721.6	694.3	670.9	656.3

Glendo Unit

Initial Ownership 91.9 Kaf, Accrued this WY: 10.6 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	0.6	0.3	0.2	0.2	0.2	0.4	0.7	0.9	1.2	1.2	1.0	0.8
Deliv fm Ownership	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
End-month Ownership	kaf	91.3	91.0	90.8	90.6	90.4	90.0	89.3	88.4	85.2	78.0	72.0	67.2

Re-regulation

Initial Ownership 0.2 Kaf, Accrued this WY: 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	0.0	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	0.2	0.0	0.0	0.0
End-month total	kaf	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0

**Table 16. (Continued) Reasonable Minimum Operating Plan for WY 2014**

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Based on April - July MINIMUM Inflow Estimates: Seminoe 346 KAF / Sweetwater 21 KAF / Alcova-Glendo 21 KAF

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City of Cheyenne		Initial Ownership 2.5 Kaf,											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Inflow	kaf	0.3	0.3	0.4	0.3	0.3	0.8	0.5	0.5	0.5	0.5	0.4	0.3
Evaporation	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.5	0.4	0.0	0.0
Ownership	kaf	2.8	3.1	3.5	3.8	4.1	4.9	5.3	2.7	2.7	2.8	3.2	3.4
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	0.1	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	1.9	1.9
Other		Initial Ownership 2.6 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	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.0	1.0
Ownership	kaf	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.3	1.7	-0.3	-1.3
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	12.0	17.0	14.0	7.0
Delivered	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	12.0	17.0	14.0	7.0
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	14.2	134.9	286.9	160.5	35.0
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	6.2	25.4	0.0	0.0	0.0	0.0
Total Requirement	kaf	0.0	0.0	0.0	0.0	0.0	0.0	6.2	39.6	136.9	292.9	165.5	39.0
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	6.2	39.6	136.9	292.9	165.5	39.0

**Table 16.** (Continued) Reasonable Minimum Operating Plan for WY 2014

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NORTH PLATTE RIVER OPERATING PLAN  
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POWER GENERATION

-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Seminole Power Plant													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	32.7	31.4	32.5	32.5	29.3	32.5	31.4	70.7	68.4	70.7	70.7	68.4
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	25.837	24.740	25.282	24.818	22.054	24.498	24.612	26.514	26.824	27.806	26.491	24.048
Actual generation	gwh	4.545	4.333	4.451	4.400	3.914	4.348	4.317	10.008	9.988	10.347	9.999	9.272
Percent max generation		18.	18.	18.	18.	18.	18.	18.	38.	37.	37.	38.	39.
Average kwh/af		139.	138.	137.	135.	134.	134.	137.	142.	146.	146.	141.	136.
Kortes Power Plant													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	32.5	31.4	32.5	32.5	29.3	32.5	31.4	70.7	68.4	70.7	70.7	68.4
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	29.085	26.712	27.606	27.606	24.940	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	5.040	5.590	5.401	12.160	11.765	12.160	12.160	11.765
Percent max generation		19.	20.	20.	20.	20.	20.	20.	44.	44.	44.	44.	44.
Average kwh/af		172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.
Fremont Canyon													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	2.0	25.6	26.3	26.3	23.8	35.2	100.1	89.4	89.3	97.1	93.8	33.5
Bypass	kaf	4.6	4.5	4.6	4.6	4.2	4.6	4.5	4.6	4.5	4.6	4.6	4.5
Maximum generation	gwh	41.615	40.453	41.791	41.774	37.733	41.804	39.949	40.672	38.964	38.732	36.376	35.077
Actual generation	gwh	0.492	6.330	6.500	6.497	5.881	8.702	24.443	21.502	21.268	22.656	21.433	7.645
Percent max generation		1.	16.	16.	16.	16.	21.	61.	53.	55.	58.	59.	22.
Average kwh/af		246.	247.	247.	247.	247.	247.	244.	241.	238.	233.	228.	228.
Alcova Power Plant													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	30.5	29.8	30.7	30.7	27.8	39.4	80.3	83.0	80.4	83.1	83.0	29.9
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	27.177	26.588	27.472	27.472	24.820	27.472	26.275	27.552	26.656	27.552	27.552	26.656
Actual generation	gwh	4.212	4.053	4.175	4.175	3.781	5.358	11.081	11.620	11.256	11.634	11.620	4.186
Percent max generation		15.	15.	15.	15.	15.	20.	42.	42.	42.	42.	42.	16.
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	12.7	18.2	36.2	137.8	221.4	166.2	11.4
Bypass	kaf	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	71.4	1.5	1.5
Maximum generation	gwh	15.688	17.354	19.670	20.772	19.741	22.939	23.625	26.208	25.209	21.910	15.295	12.909
Actual generation	gwh	0.000	0.000	0.000	0.000	0.000	1.308	1.947	4.047	15.350	21.910	11.968	0.736
Percent max generation		0.	0.	0.	0.	0.	6.	8.	15.	61.	100.	78.	6.
Average kwh/af		0.	0.	0.	0.	0.	103.	107.	112.	111.	99.	72.	65.
Guernsey Power Plant													
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	5.8	38.4	50.9	52.9	53.3	38.7
Bypass	kaf	0.3	0.2	0.3	0.4	0.3	0.3	0.4	1.2	86.0	240.0	112.2	0.3
Maximum generation	gwh	1.895	2.572	3.063	3.102	2.836	3.500	3.683	3.840	3.716	3.835	3.838	3.486
Actual generation	gwh	0.000	0.000	0.000	0.000	0.000	0.000	0.412	2.803	3.716	3.835	3.838	2.457
Percent max generation		0.	0.	0.	0.	0.	0.	11.	73.	100.	100.	100.	70.
Average kwh/af		0.	0.	0.	0.	0.	0.	71.	73.	73.	72.	72.	63.

**Table 17. Reasonable Maximum Operating Plan for WY 2014**

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Based on April - July MAXIMUM Inflow Estimates: Seminole 1318 KAF / Sweetwater 118 KAF / Alcova-Glendo 298 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2013

HYDROLOGY OPERATIONS

Seminole Reservoir Operations		Initial Content 330.2 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	36.1	33.5	28.2	26.1	28.8	61.1	153.2	375.7	569.1	219.9	60.3	35.3
Total Inflow	cfs	587.	563.	459.	424.	519.	994.	2575.	6110.	9564.	3576.	981.	593.
Turbine Release	kaf	32.7	31.4	32.5	32.5	29.3	61.4	177.4	185.5	186.7	32.5	32.5	31.4
Jetflow Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	45.7	45.1	36.4	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	31.4	32.5	32.5	29.3	61.4	223.1	230.6	223.1	32.5	32.5	31.4
Total Release	cfs	532.	528.	529.	529.	528.	999.	3749.	3750.	3749.	529.	529.	528.
Evaporation	kaf	2.4	1.3	0.7	0.7	0.7	1.4	2.5	2.6	6.4	9.7	9.1	6.7
End-month content	kaf	331.5#	332.6	328.0	321.4	321.0#	320.3*	248.9	389.9	729.0*	906.5	925.1	922.6#
End-month elevation	ft	6306.8	6306.9	6306.4	6305.6	6305.6	6305.5	6296.1	6313.3	6340.9	6351.3	6352.3	6352.2
Kortes Reservoir Operations		Initial Content 4.6 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	31.4	32.5	32.5	29.3	61.4	223.1	230.6	223.1	32.5	32.5	31.4
Total Inflow	cfs	532.	528.	529.	529.	528.	999.	3749.	3750.	3749.	529.	529.	528.
Turbine Release	kaf	32.5	31.4	32.5	32.5	29.3	61.4	155.3	160.5	155.3	32.5	32.5	31.4
Spillway Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	67.8	70.1	67.8	0.0	0.0	0.0
Total Release	kaf	32.5	31.4	32.5	32.5	29.3	61.4	223.1	230.6	223.1	32.5	32.5	31.4
Total Release	cfs	529.	528.	529.	529.	528.	999.	3749.	3750.	3749.	529.	529.	528.
Pathfinder Reservoir Operations		Initial Content 309.0 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	3.3	3.4	2.7	2.4	2.6	5.8	17.1	44.5	43.3	13.2	4.6	3.0
Kortes-Path Gain	kaf	4.0	2.1	2.0	4.3	5.9	8.0	10.6	17.0	10.8	8.3	6.5	7.2
Inflow from Kortes	kaf	32.5	31.4	32.5	32.5	29.3	61.4	223.1	230.6	223.1	32.5	32.5	31.4
Total Inflow	kaf	39.8	36.9	37.2	39.2	37.8	75.2	250.8	292.1	277.2	54.0	43.6	41.6
Total Inflow	cfs	647.	620.	605.	638.	681.	1223.	4215.	4751.	4658.	878.	709.	699.
Turbine Release	kaf	2.0	25.6	26.3	26.3	23.8	35.2	49.6	37.1	38.8	115.6	112.3	101.9
Jetflow Release	kaf	4.6	4.5	4.6	4.6	4.2	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	6.6	30.1	30.9	30.9	28.0	39.8	54.1	41.7	43.3	120.2	116.9	106.4
Total Release	cfs	107.	506.	503.	503.	504.	647.	909.	678.	728.	1955.	1901.	1788.
Evaporation	kaf	2.4	1.4	0.8	0.8	0.8	1.7	4.0	6.8	12.3	14.4	12.2	8.8
End-month content	kaf	339.8	345.2	350.7	358.2	367.2	400.9	593.6	837.2	1058.8	978.2	892.7	819.1
End-month elevation	ft	5805.0	5805.6	5806.2	5807.0	5808.0	5811.4	5827.0	5841.4	5852.0	5848.3	5844.2	5840.5
Alcova Reservoir Operations		Initial Content 180.5 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	6.6	30.1	30.9	30.9	28.0	39.8	54.1	41.7	43.3	120.2	116.9	106.4
Total Inflow	cfs	107.	506.	503.	503.	504.	647.	909.	678.	728.	1955.	1901.	1788.
Turbine Release	kaf	30.5	29.8	30.7	30.7	27.8	39.4	29.8	30.7	29.9	101.6	101.5	98.3
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	12.0	17.0	14.0	7.0
Total Release	kaf	30.5	29.8	30.7	30.7	27.8	39.4	29.8	40.7	41.9	118.6	115.5	105.3
Total Release	cfs	496.	501.	499.	499.	501.	641.	501.	662.	704.	1929.	1878.	1770.
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 WY 2014**

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Based on April - July MAXIMUM Inflow Estimates: Seminole 1318 KAF / Sweetwater 118 KAF / Alcova-Glendo 298 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2013

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	30.5	29.8	30.7	30.7	27.8	39.4	29.8	30.7	29.9	101.6	101.5	98.3
Total Inflow	cfs	496.	501.	499.	499.	501.	641.	501.	499.	502.	1652.	1651.	1652.
Total Release	kaf	30.7	29.8	30.7	30.7	27.8	39.4	29.8	30.7	29.8	101.5	101.4	98.2
Total Release	cfs	499.	501.	499.	499.	501.	641.	501.	499.	501.	1651.	1649.	1650.
Glendo Reservoir Operations		Initial Content 134.5 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	15.1	13.6	5.8	13.1	12.4	16.3	49.8	168.9	69.7	9.1	8.1	14.0
Infl from Gray Reef	kaf	30.7	29.8	30.7	30.7	27.8	39.4	29.8	30.7	29.8	101.5	101.4	98.2
Total Inflow	kaf	45.8	43.4	36.5	43.8	40.2	55.7	79.6	199.6	99.5	110.6	109.5	112.2
Total Inflow	cfs	745.	729.	594.	712.	724.	906.	1338.	3246.	1672.	1799.	1781.	1886.
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	12.2	5.4	150.1	103.9	227.0	218.8	110.6
Low Flow Release	kaf	0.0	0.0	0.0	0.0	0.0	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	71.9	59.9	0.0
Total Release	kaf	0.0	0.0	0.0	0.0	0.0	13.7	6.9	151.6	105.4	300.4	280.2	112.1
Total Release	cfs	0.	0.	0.	0.	0.	223.	116.	2466.	1771.	4886.	4557.	1884.
Evaporation	kaf	1.2	0.8	0.8	0.7	1.0	1.8	3.2	4.9	6.9	6.5	3.8	1.9
End-month content	kaf	179.1#	221.7	257.4	300.5	339.7#	379.9*	449.4	492.5#	477.7#	279.4	102.9	100.0*
End-month elevation	ft	4599.6	4606.0	4610.7	4616.0	4620.4	4624.7	4631.3	4635.0	4633.8	4613.5	4584.8	4584.1
Guernsey Reservoir Operations		Initial Content 1.9 Kaf						Operating Limits: Max Min			28.0 Kaf, 4411.92 Ft. 0.0 Kaf, 4370.00 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	0.7	6.7	28.7	21.7	5.9	0.8	4.6
Inflow from Glendo	kaf	0.0	0.0	0.0	0.0	0.0	13.7	6.9	151.6	105.4	300.4	280.2	112.1
Total Inflow	kaf	2.9	1.6	1.3	1.6	1.0	14.4	13.6	180.3	127.1	306.3	281.0	116.7
Total Inflow	cfs	47.	27.	21.	26.	18.	234.	229.	2932.	2136.	4981.	4570.	1961.
Turbine Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	6.6	53.6	51.8	53.6	53.6	53.4
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	0.0	0.0	124.7	71.2	249.3	223.9	75.3
Total Release	kaf	0.3	0.3	0.2	0.4	0.3	0.3	7.0	179.5	126.0	306.0	280.0	129.0
Total Release	cfs	5.	5.	3.	7.	5.	5.	118.	2919.	2117.	4977.	4554.	2168.
Evaporation	kaf	0.1	0.2	0.1	0.1	0.1	0.3	0.6	0.8	1.1	0.3	1.0	0.7
End-month content	kaf	4.4	5.5	6.5	7.6	8.2#	22.0*	28.0*	28.0*	28.0*	28.0*	28.0*	15.0*
End-month elevation	ft	4393.5	4395.2	4396.6	4397.9	4398.5	4408.7	4411.9	4411.9	4411.9	4411.9	4411.9	4404.3
Physical EOM Cont	kaf	1016.6	1066.8	1104.4	1149.5	1197.9	1284.9	1505.2	1932.9	2478.8	2377.4	2134.0	2042.0

**Table 17. (Continued) Reasonable Maximum Operating Plan for WY 2014**

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Based on April - July MAXIMUM Inflow Estimates: Seminole 1318 KAF / Sweetwater 118 KAF / Alcova-Glendo 298 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2013

OWNERSHIP OPERATIONS

North Platte Pathfinder

Initial Ownership 77.2 Kaf, Accrued this WY: 345.5 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	42.9	38.5	32.5	32.4	36.8	73.7	178.0	431.7	126.3	0.0	0.0	0.0
Evaporation	kaf	0.5	0.5	0.4	0.4	0.5	1.2	2.9	5.5	13.8	14.0	12.2	8.0
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	151.3	60.9
End-month Ownership	kaf	120.1	158.6	191.1	223.5	260.3	334.0	512.0	943.7	1070.0	1056.0	892.5	823.6

North Platte Guernsey

Initial Ownership 0.0 Kaf, Accrued this WY: 45.6 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	0.0	0.0	6.9	14.3	13.0	10.8	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	0.5	0.4	0.5	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	42.4	0.0
End-month Ownership	kaf	0.0	0.0	6.9	21.2	34.2	45.0	44.6	44.1	43.5	42.9	0.0	0.0

Inland Lakes

Initial Ownership 0.0 Kaf, Accrued this WY: 46.0 Kaf

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Net Accrual	kaf	17.7	14.8	0.0	0.0	0.0	0.0	13.5	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	0.4	0.0	0.0	0.0	0.0
Trnsfr fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	7.0	38.1	0.0	0.0	0.0	0.0
End-month Ownership	kaf	17.7	32.5	32.4	32.3	32.2	32.0	38.5	0.0	0.0	0.0	0.0	0.0

Kendrick

Initial Ownership 785.6 Kaf, Accrued this WY: 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	425.7	0.0	0.0	0.0
Evaporation	kaf	5.6	3.1	1.9	1.8	1.9	3.6	6.6	8.1	10.8	15.4	13.4	10.2
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	14.0	7.0
End-month Ownership	kaf	780.0	776.9	775.0	773.2	771.3	767.7	761.1	743.0	1168.7	1153.3	1125.9	1108.7

Glendo Unit

Initial Ownership 91.9 Kaf, Accrued this WY: 10.6 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	5.7	29.3	0.0	0.0	0.0	0.0	0.0
Evaporation	kaf	0.6	0.3	0.2	0.2	0.2	0.4	0.8	1.3	1.8	1.6	1.4	1.0
Deliv fm Ownership	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	4.0
End-month Ownership	kaf	91.3	91.0	90.8	90.6	90.4	95.7	124.2	122.9	121.1	119.5	113.1	108.1

Re-regulation

Initial Ownership 0.2 Kaf, Accrued this WY: 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	13.4	67.6	0.0	0.0	0.0	0.0
Evaporation/Seepage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.1	0.9	0.0	0.0
Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.4	0.0	66.6	1.0	0.0
End-month total	kaf	0.2	0.2	0.2	0.2	0.2	0.2	13.6	69.6	68.5	1.0	0.0	0.0

**Table 17. (Continued) Reasonable Maximum Operating Plan for WY 2014**

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Based on April - July MAXIMUM Inflow Estimates: Seminole 1318 KAF / Sweetwater 118 KAF / Alcova-Glendo 298 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2013

City of Cheyenne		Initial Ownership 2.5 Kaf,											
-----		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Inflow	kaf	0.3	0.3	0.4	0.5	0.8	1.0	1.0	1.5	1.0	0.5	0.6	0.3
Evaporation	kaf	0.0	0.0	0.0	0.0	0.0	0.0	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	3.0	1.5	0.7	0.7	0.0
Ownership	kaf	2.8	3.1	3.5	4.0	4.8	5.8	6.7	5.1	4.5	4.2	4.0	4.2
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 2.6 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	0.0	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	2.0	2.0	2.0	1.1
Ownership	kaf	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0.5	-1.5	-3.5	-4.6
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	12.0	17.0	14.0	7.0
Delivered	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	12.0	17.0	14.0	7.0
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	130.0	124.0	300.0	275.0	125.0
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	7.0	38.1	0.0	0.0	0.0	0.0
Total Requirement	kaf	0.0	0.0	0.0	0.0	0.0	0.0	7.0	168.1	126.0	306.0	280.0	129.0
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	0.3	7.0	179.5	126.0	306.0	280.0	129.0
Spill	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.4	0.0	0.0	0.0	0.0

**Table 17. (Continued) Reasonable Maximum Operating Plan for WY 2014**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2013 11:36

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Based on April - July MAXIMUM Inflow Estimates: Seminole 1318 KAF / Sweetwater 118 KAF / Alcova-Glendo 298 KAF

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2013

POWER GENERATION

Seminole Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		32.7	31.4	32.5	32.5	29.3	61.4	177.4	185.5	186.7	32.5	32.5	31.4
Bypass kaf		0.0	0.0	0.0	0.0	0.0	0.0	45.7	45.1	36.4	0.0	0.0	0.0
Maximum generation gwh		25.991	25.189	25.980	25.821	23.247	25.718	23.763	25.681	29.872	33.251	32.603	31.586
Actual generation gwh		4.564	4.387	4.535	4.517	4.062	8.508	23.763	25.681	29.872	5.667	5.787	5.616
Percent max generation		18.	17.	17.	17.	17.	33.	100.	100.	100.	17.	18.	18.
Average kwh/af		140.	140.	140.	139.	139.	139.	134.	138.	160.	174.	178.	179.
Kortes Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		32.5	31.4	32.5	32.5	29.3	61.4	155.3	160.5	155.3	32.5	32.5	31.4
Bypass kaf		0.0	0.0	0.0	0.0	0.0	0.0	67.8	70.1	67.8	0.0	0.0	0.0
Maximum generation gwh		29.085	26.712	27.606	27.606	24.940	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	5.040	10.561	26.712	27.606	26.712	5.590	5.590	5.401
Percent max generation		19.	20.	20.	20.	20.	38.	100.	100.	100.	20.	20.	20.
Average kwh/af		172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.	172.
Fremont Canyon		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		2.0	25.6	26.3	26.3	23.8	35.2	49.6	37.1	38.8	115.6	112.3	101.9
Bypass kaf		4.6	4.5	4.6	4.6	4.2	4.6	4.5	4.6	4.5	4.6	4.6	4.5
Maximum generation gwh		41.673	40.614	42.071	42.166	38.177	42.567	42.586	46.416	45.747	47.336	47.276	45.683
Actual generation gwh		0.493	6.355	6.543	6.558	5.950	8.861	12.911	10.184	10.850	32.360	31.396	28.454
Percent max generation		1.	16.	16.	16.	16.	21.	30.	22.	24.	68.	66.	62.
Average kwh/af		247.	248.	249.	249.	250.	252.	260.	275.	280.	280.	280.	279.
Alcova Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		30.5	29.8	30.7	30.7	27.8	39.4	29.8	30.7	29.9	101.6	101.5	98.3
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		27.177	26.588	27.472	27.472	24.820	27.472	26.275	27.552	26.656	27.552	27.552	26.656
Actual generation gwh		4.212	4.053	4.175	4.175	3.781	5.358	4.112	4.298	4.186	14.224	14.210	13.762
Percent max generation		15.	15.	15.	15.	15.	20.	16.	16.	16.	52.	52.	52.
Average kwh/af		138.	136.	136.	136.	136.	136.	138.	140.	140.	140.	140.	140.
Glendo Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		0.0	0.0	0.0	0.0	0.0	12.2	5.4	150.1	103.9	227.0	218.8	110.6
Bypass kaf		0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	73.4	61.4	1.5
Maximum generation gwh		15.829	17.802	19.976	21.175	20.250	23.562	24.310	26.766	26.315	24.090	17.845	12.241
Actual generation gwh		0.000	0.000	0.000	0.000	0.000	1.277	0.588	17.002	11.882	24.090	17.845	6.852
Percent max generation		0.	0.	0.	0.	0.	5.	2.	64.	45.	100.	100.	56.
Average kwh/af		0.	0.	0.	0.	0.	105.	109.	113.	114.	106.	82.	62.
Guernsey Power Plant		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Turbine Release kaf		0.0	0.0	0.0	0.0	0.0	0.0	6.6	53.6	51.8	53.6	53.6	53.4
Bypass kaf		0.3	0.3	0.2	0.4	0.3	0.3	0.4	125.9	74.2	252.4	226.4	75.6
Maximum generation gwh		2.003	2.771	3.091	3.161	2.901	3.519	3.609	3.795	3.667	3.795	3.795	3.572
Actual generation gwh		0.000	0.000	0.000	0.000	0.000	0.000	0.455	3.795	3.667	3.795	3.795	3.572
Percent max generation		0.	0.	0.	0.	0.	0.	13.	100.	100.	100.	100.	100.
Average kwh/af		0.	0.	0.	0.	0.	0.	69.	71.	71.	71.	71.	67.



## 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 WY.

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

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

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

**Cubic Feet 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).

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

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

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

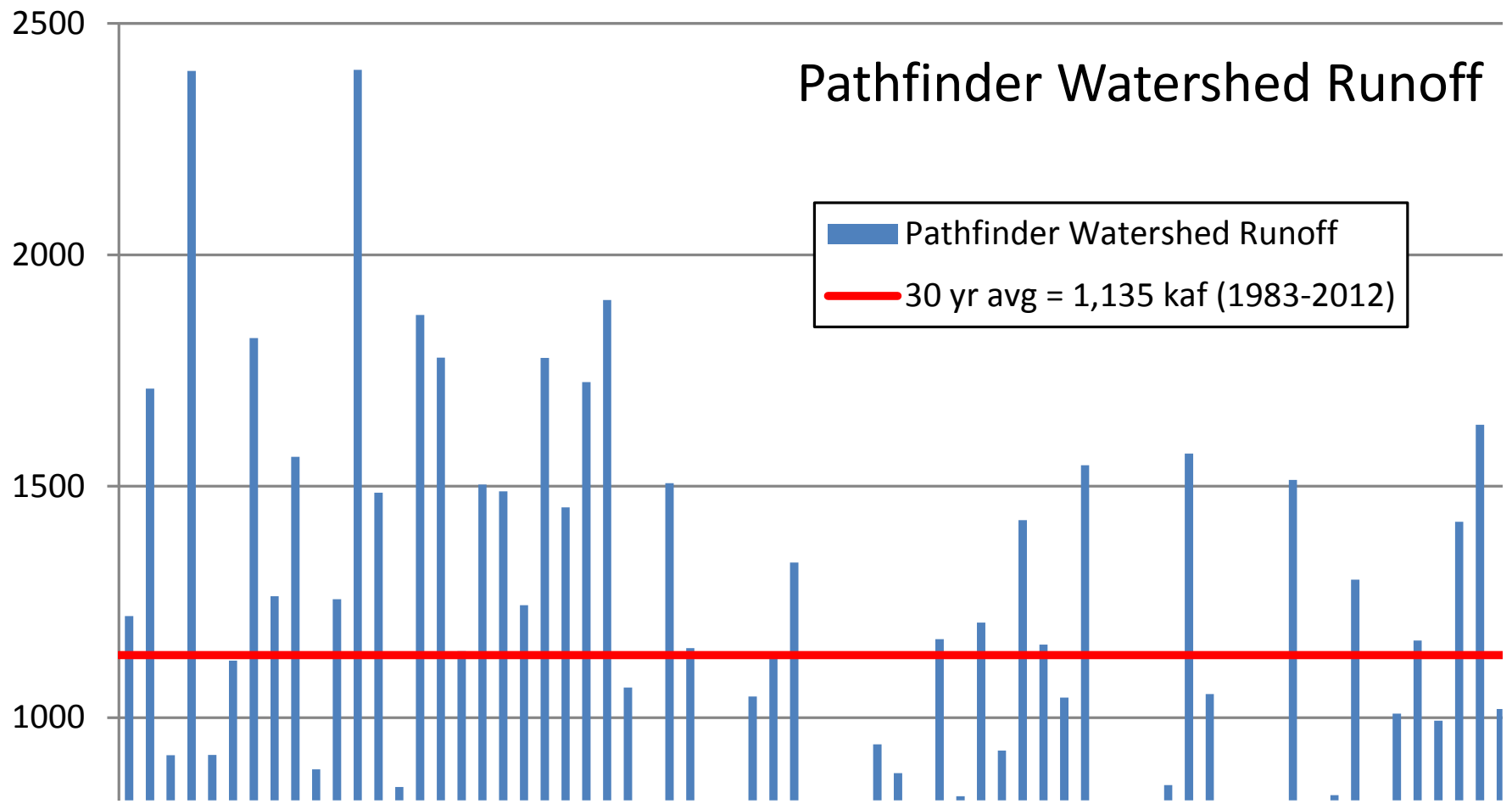
**Silt Run** - The name given to the practice of flushing silt from Guernsey Reservoir into the North Platte River downstream where the silt laden water is diverted by irrigators. The silt tends to settle in the slower moving water of canals and laterals helping to seal the wetted perimeter and reduce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

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

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

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

**WY (WY)** - October 1 - September 30.



**Figure 20** Pathfinder Watershed Runoff 1906-2013





## 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 these 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.

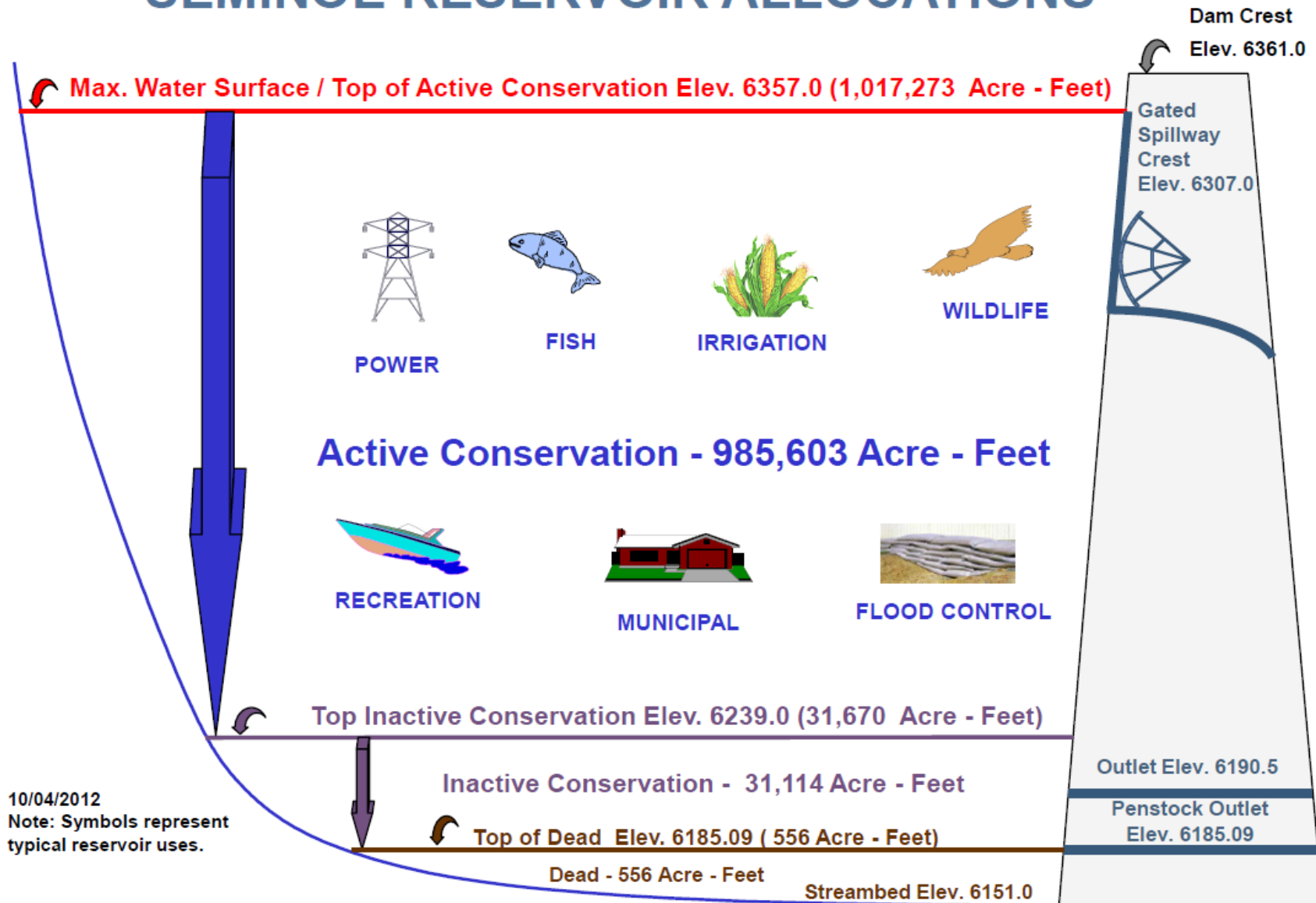
**Exclusive Flood Control Capacity** - the reservoir capacity assigned to the sole purpose of regulating flood inflows to reduce flood damage downstream.

**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.

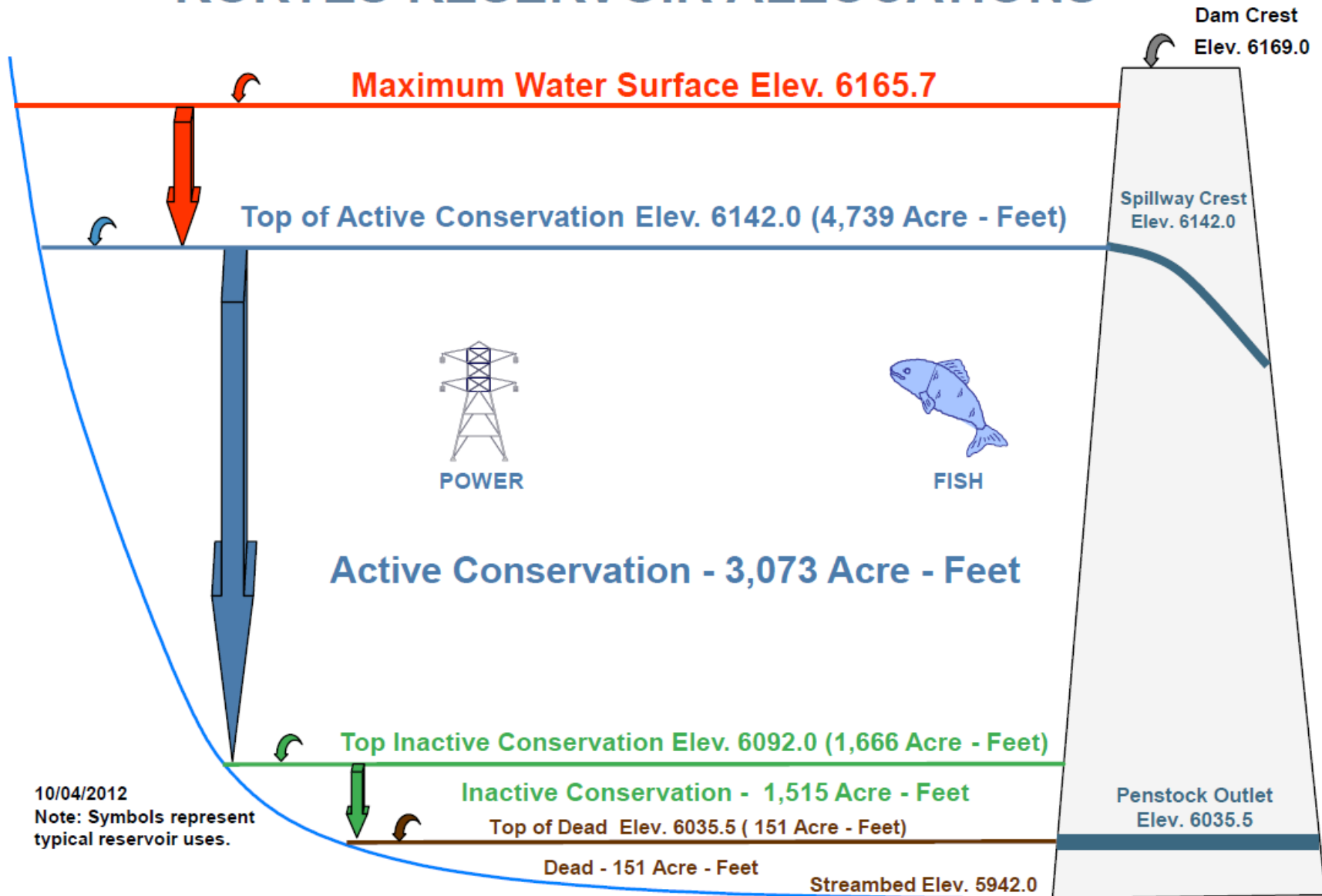
**Active Conservation Capacity** - the reservoir capacity assigned to regulate reservoir inflow for irrigation, power, municipal, and industrial, fish and wildlife, navigation, recreation, water quality, and other purposes. It does not include exclusive flood control or joint use capacity. The active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

## Reservoir Allocation Sheets

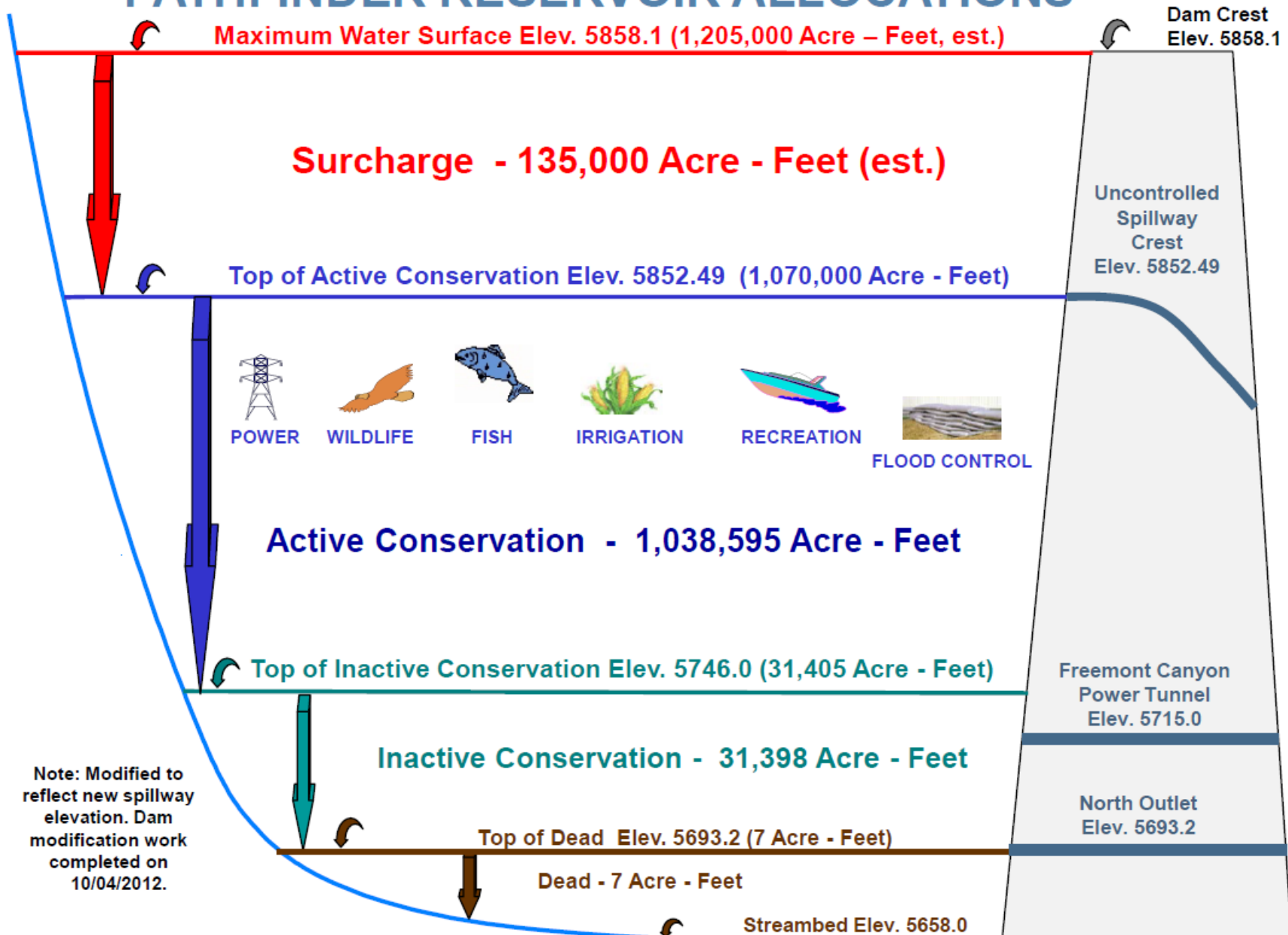
# SEMINOE RESERVOIR ALLOCATIONS



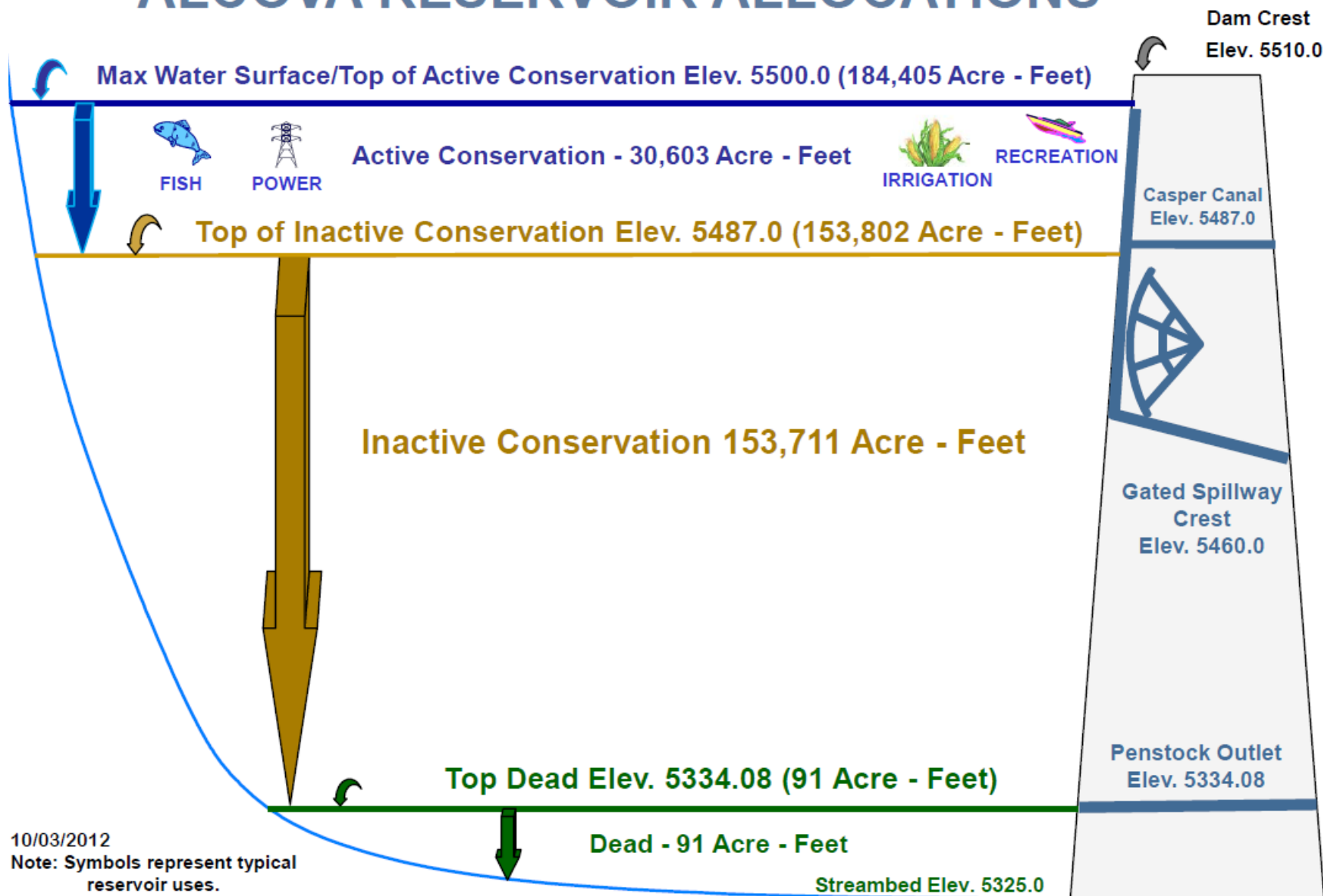
# KORTES RESERVOIR ALLOCATIONS



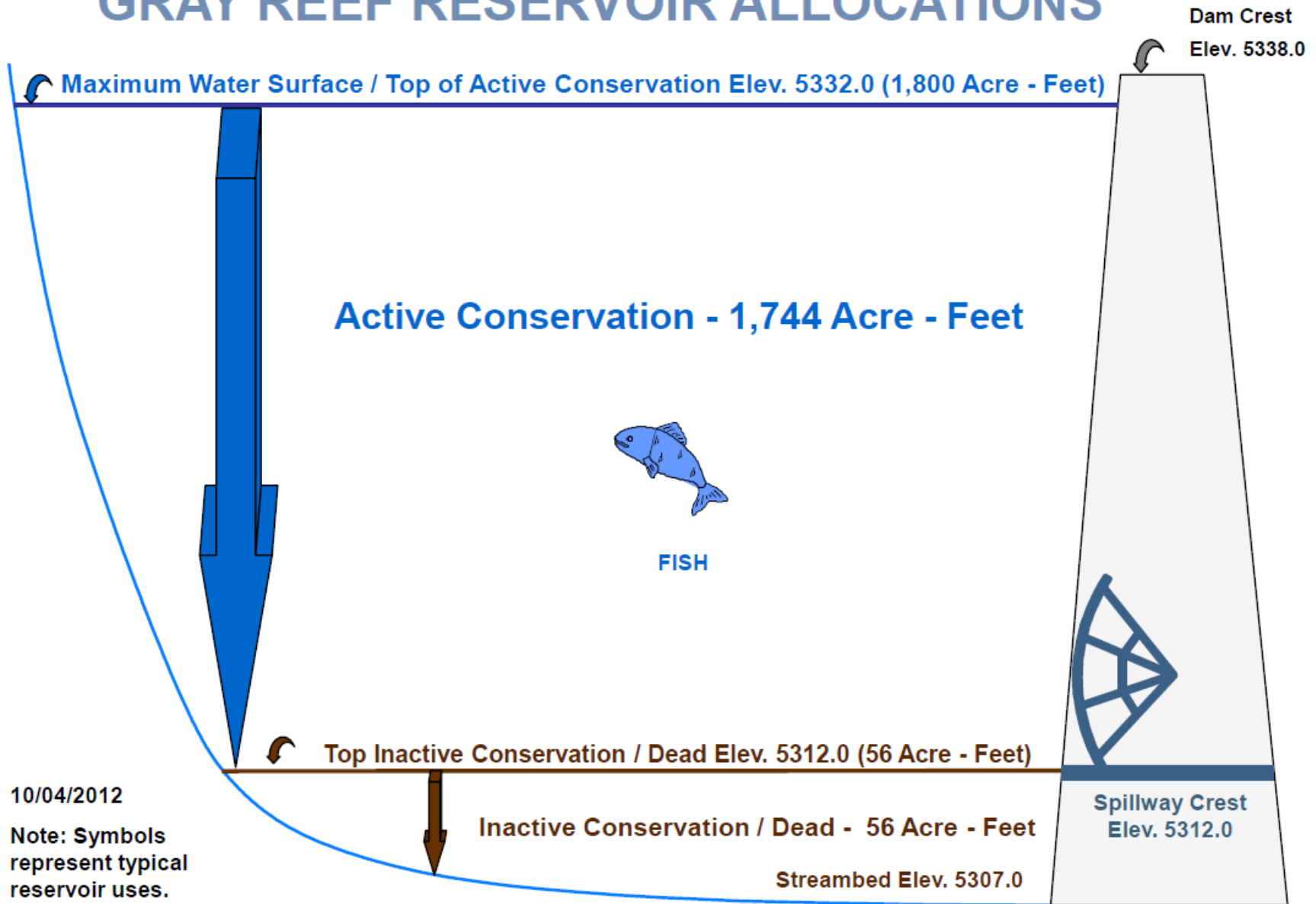
# PATHFINDER RESERVOIR ALLOCATIONS



# ALCOVA RESERVOIR ALLOCATIONS

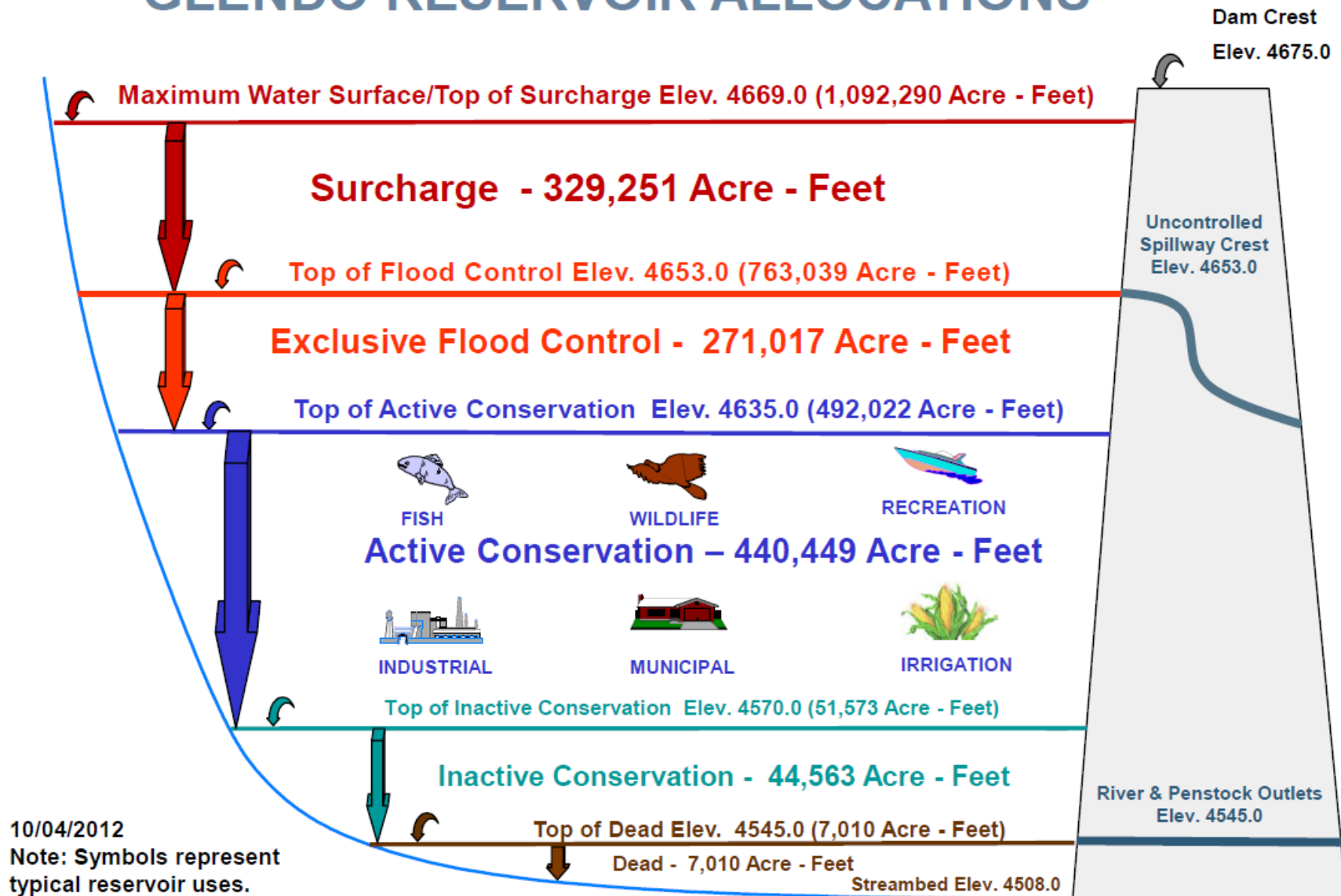


# GRAY REEF RESERVOIR ALLOCATIONS

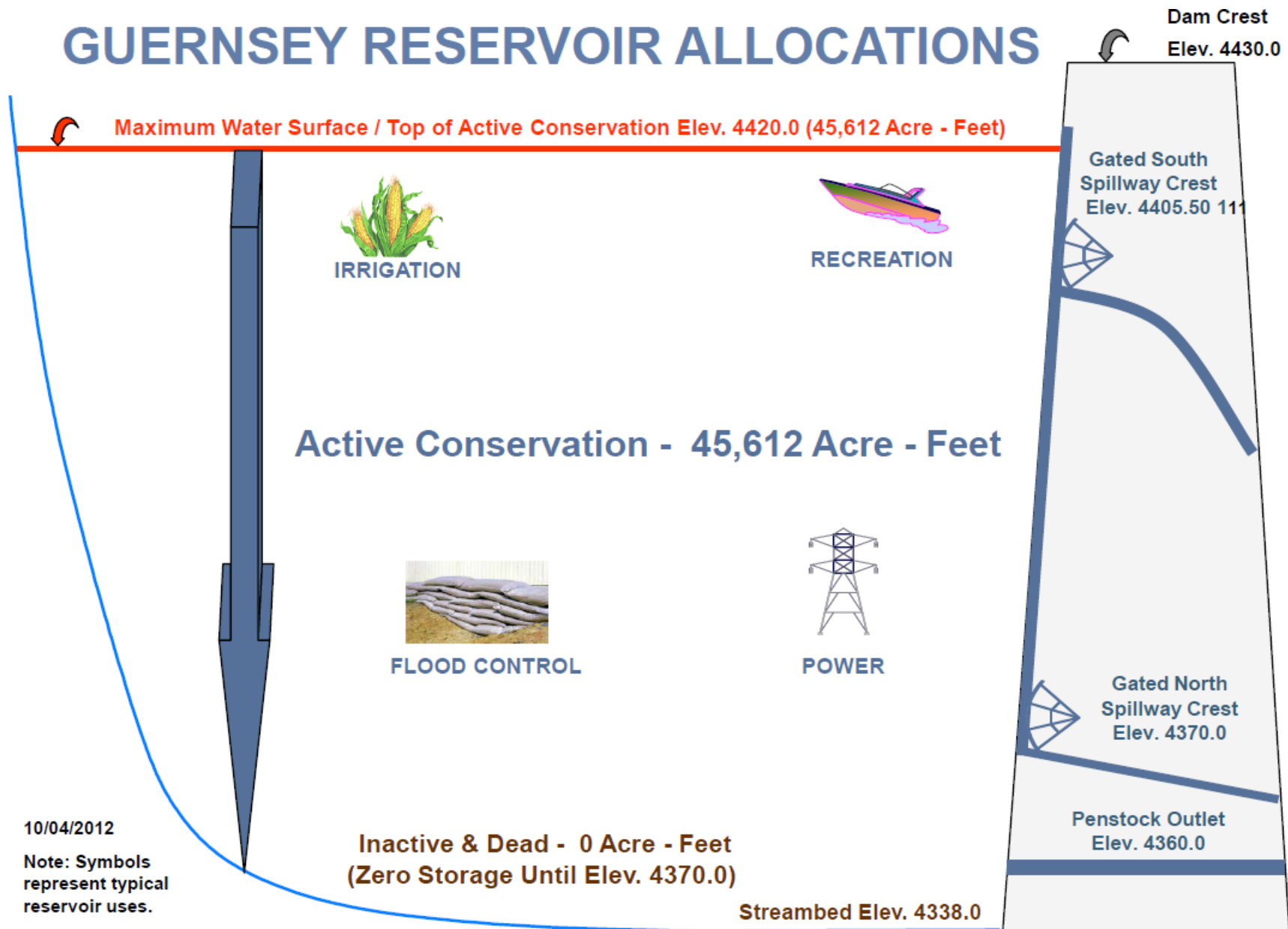




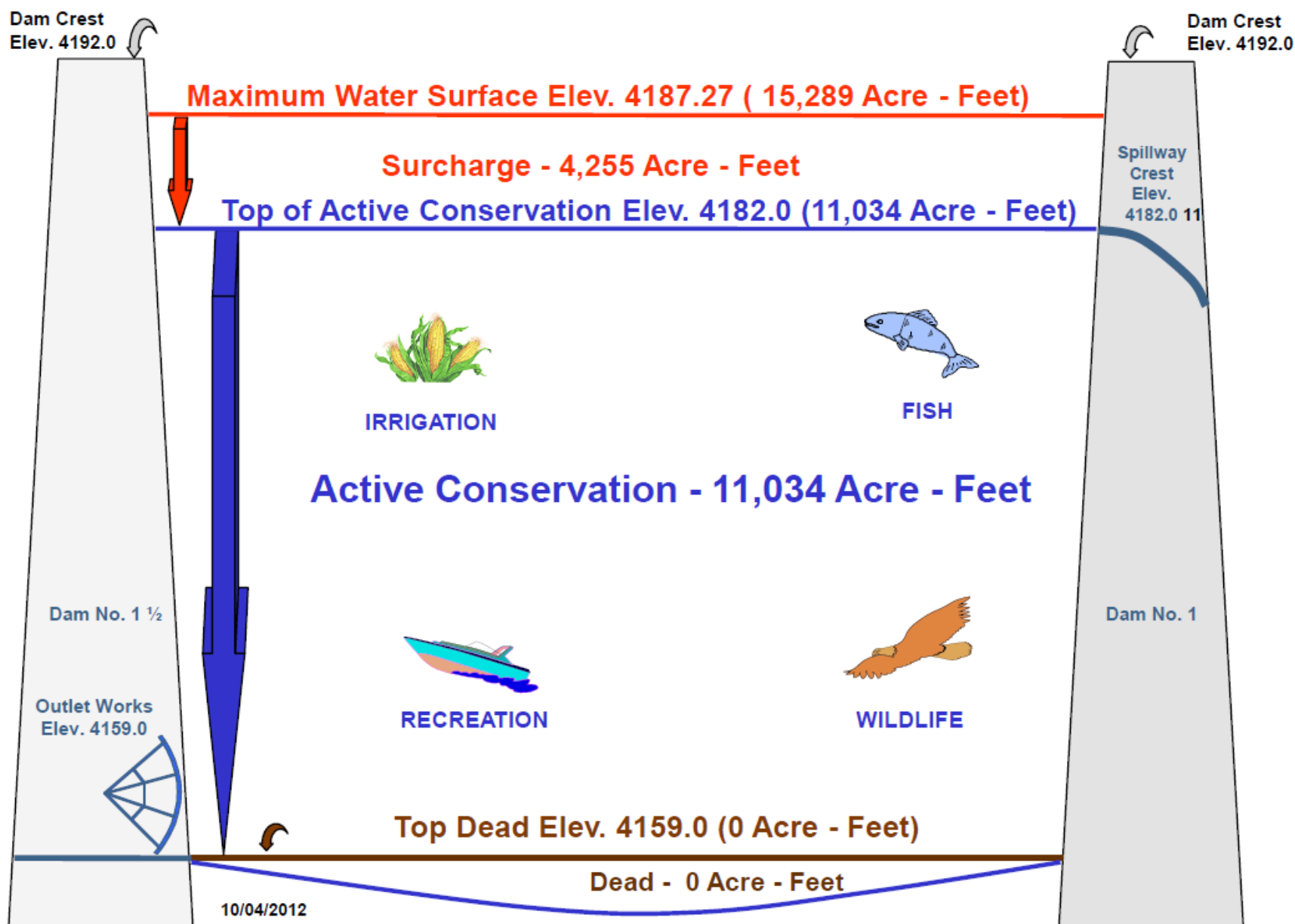
# GLEND0 RESERVOIR ALLOCATIONS



# GUERNSEY RESERVOIR ALLOCATIONS

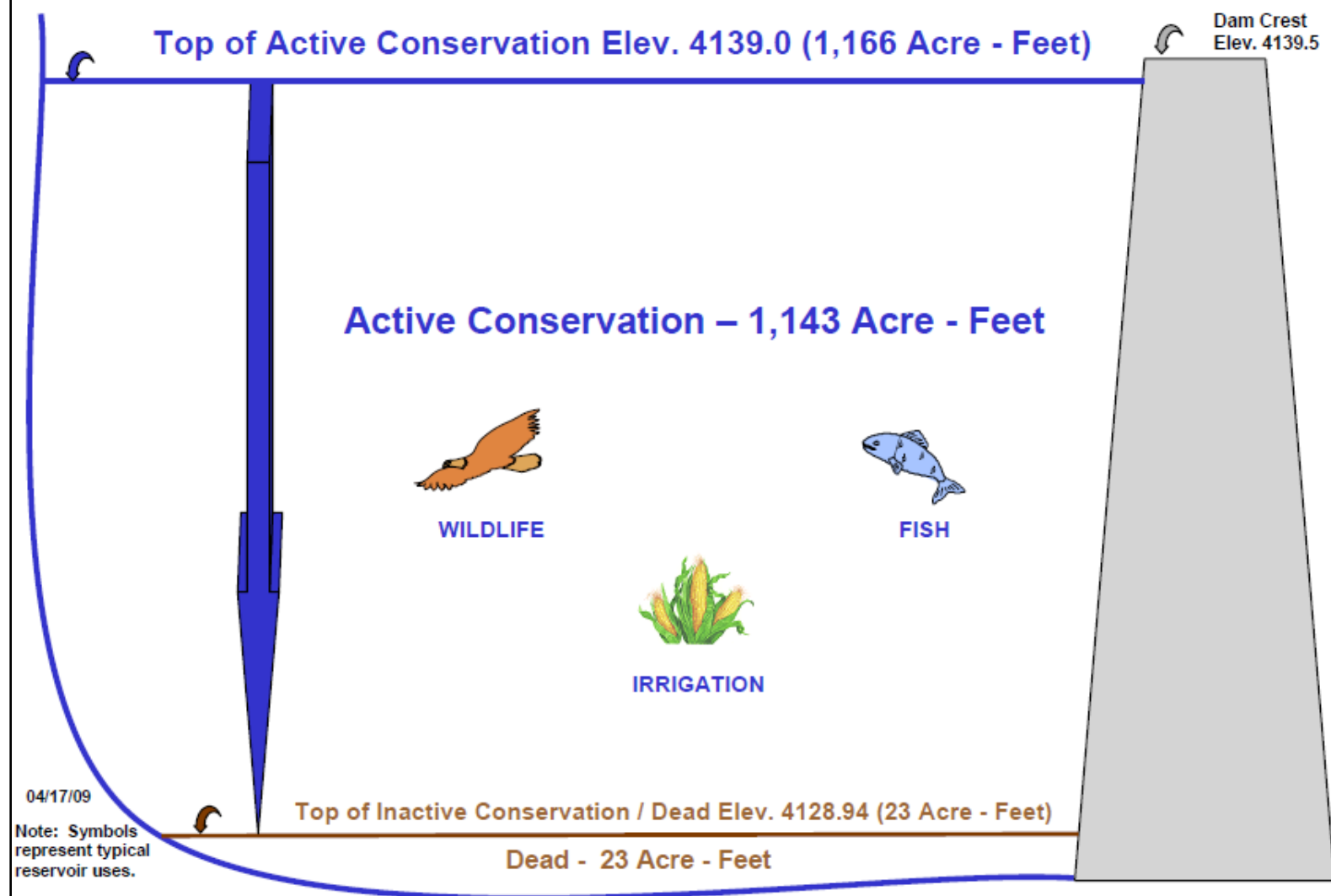


# LAKE ALICE RESERVOIR ALLOCATIONS

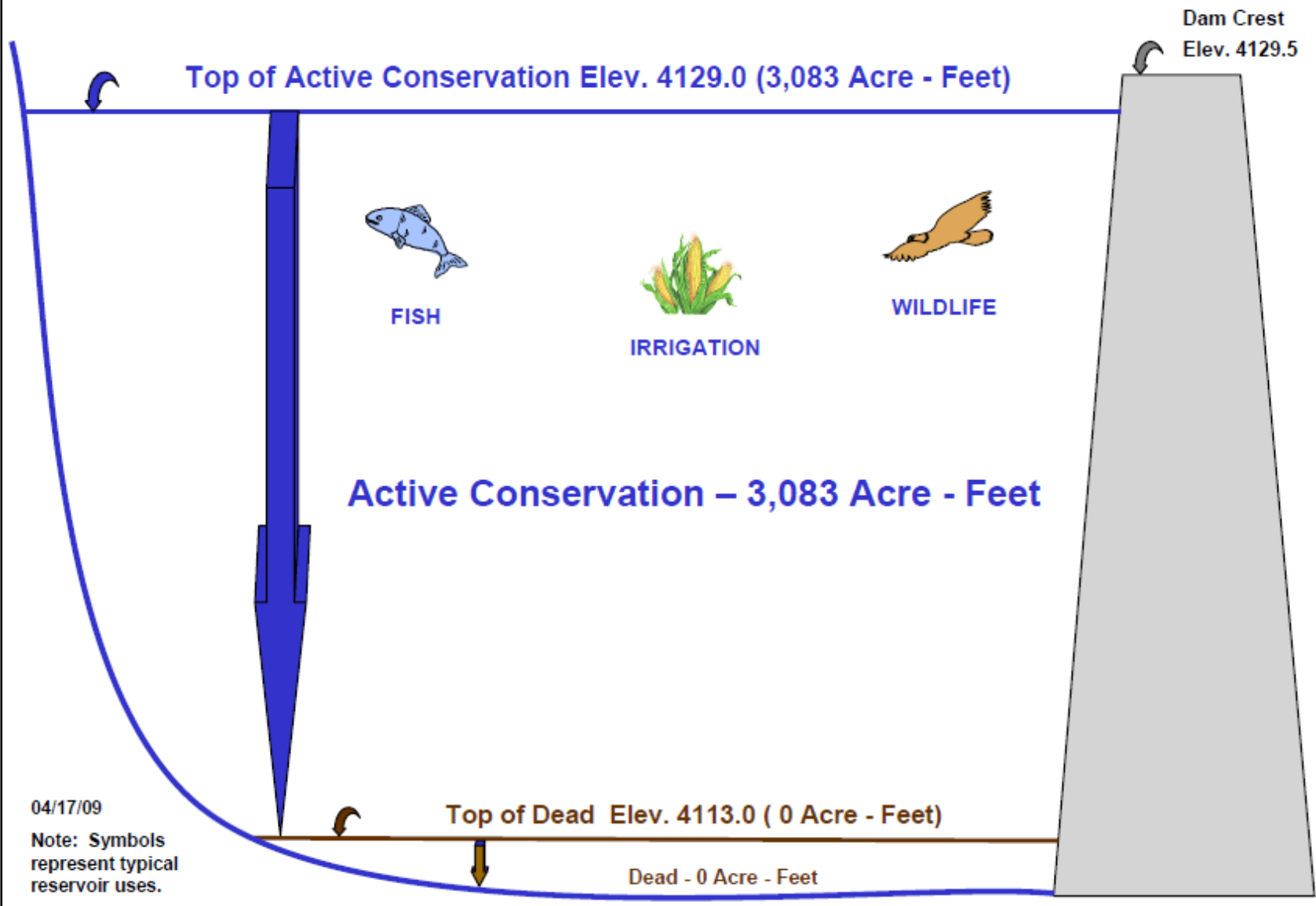


Note: Symbols re present typical reservoir uses.

# LITTLE LAKE ALICE RESERVOIR ALLOCATIONS



# WINTERS CREEK RESERVOIR ALLOCATIONS



# LAKE MINATARE RESERVOIR ALLOCATIONS

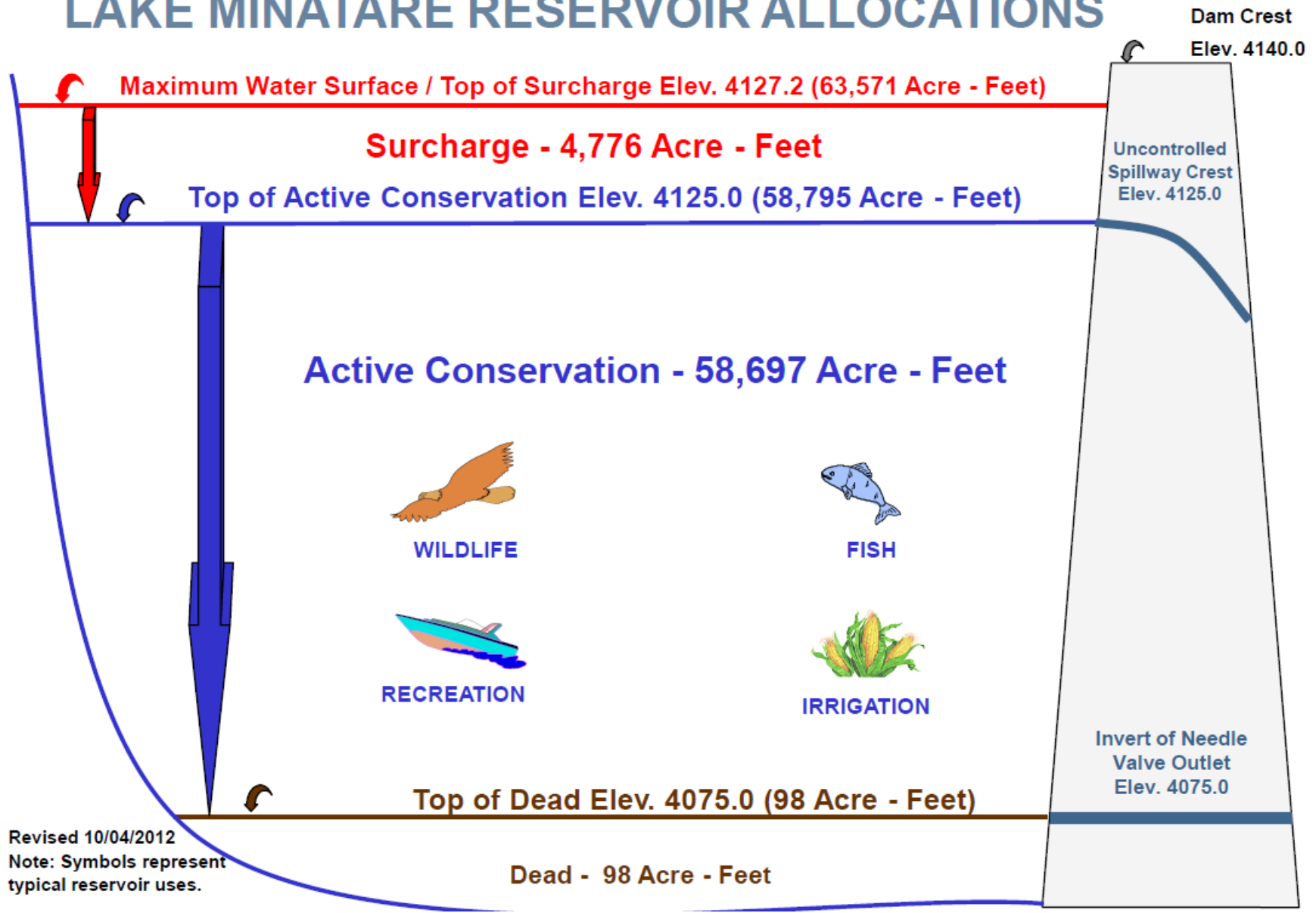




Figure 21. North Platte River Basin Map

