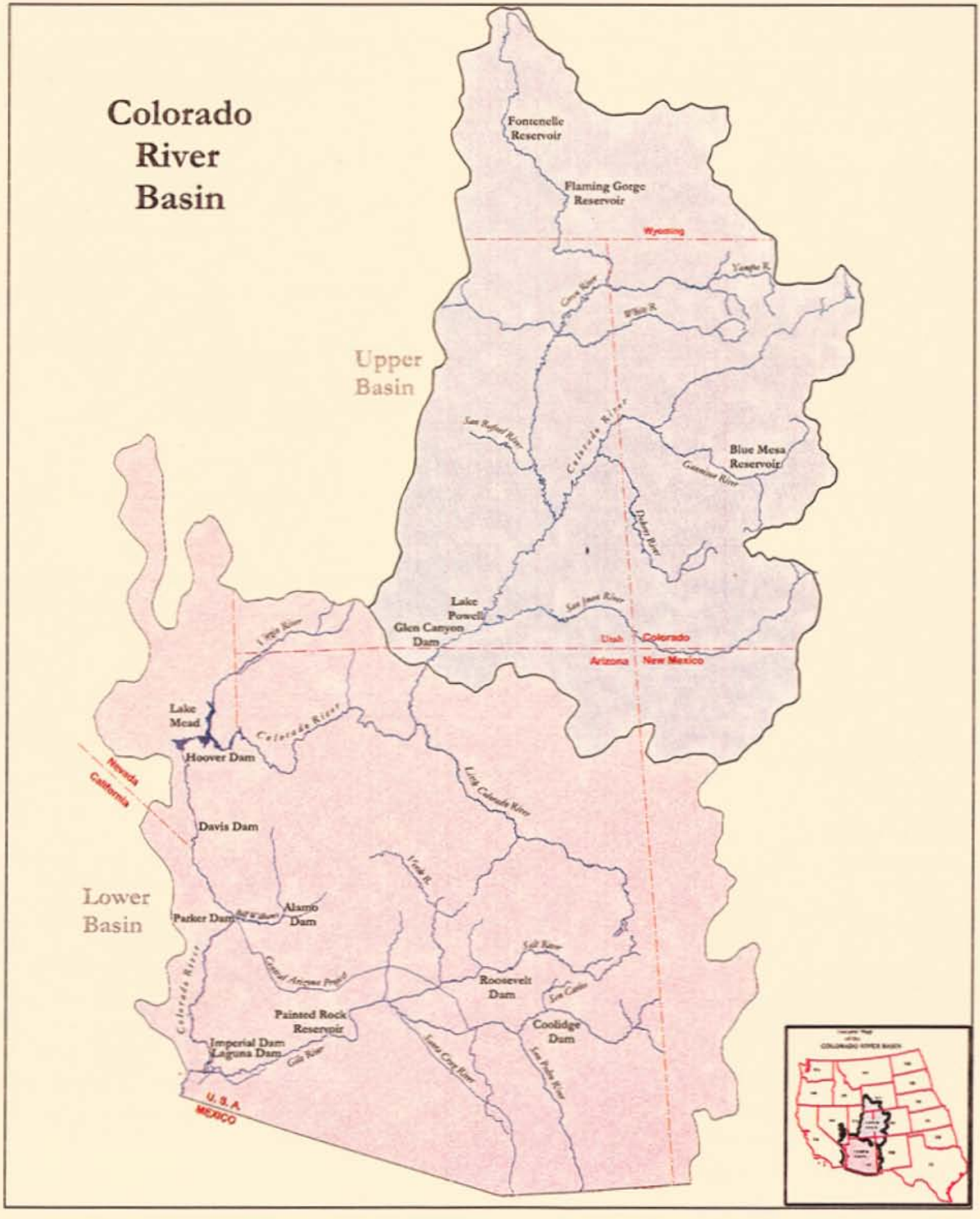
ANNUAL OPERATING PLAN
FOR
COLORADO RIVER RESERVOIRS
2001



THE SECRETARY OF THE INTERIOR

WASHINGTON

JAN 18 2001

Honorable Al Gore
President of the Senate
Washington, DC 20510

Dear Mr. President:

Enclosed is the 30th Annual Report on the operation of the Colorado River which has been prepared in compliance with the Colorado River Basin Project Act of September 30, 1968, Public Law No. 90-537 (82 Stat.885). The report describes the actual operation for water year 2000, for the reservoirs along the Colorado River, constructed under the authority of the Colorado River Storage Project Act and the Boulder Canyon Project Act.

The report also contains a projected plan of operation for water year 2001. That plan was prepared in late 2000 and is based on the most probable runoff conditions. The plan will be modified if necessary as the year progresses due to any changes in runoff conditions. The Bureau of Reclamation will keep representatives of the Colorado River Basin States, Indian tribes and other appropriate entities informed of any changes in the 2001 operating plan through the Colorado River Management Work Group.

The reservoir and river operations are kept in full compliance with the flood control regulations established by the Army Corps of Engineers and with the "Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs," issued by the Secretary of the Interior on June 4, 1970, in accordance with section 602, Public Law 90-537.

Sincerely,

Enclosure

United States Department of the Interior

BUREAU OF RECLAMATION
Washington, D.C. 20240

IN REPLY REFER TO:

JAN 24 2001

Honorable Kenny Guinn
Governor of Nevada
Carson City, Nevada 89701

Dear Governor Guinn:

The Bureau of Reclamation, after consultation at a meeting on December 1, 2000, with representatives of the Colorado River Basin States, the Upper Colorado River Commission, appropriate Federal agencies, Indian tribes, and other interested parties in Colorado River operations, established an Annual Operating Plan (a copy of the plan is enclosed) for the Colorado River reservoirs for 2001. The plan of operation reflects use of the reservoirs for all purposes consistent with the "Criteria for Coordinated Long-Range Operation of the Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act of September 30, 1968" (Operating Criteria).

Pursuant to required Secretarial determinations, storage equalization and the avoidance of spills will control the annual releases from Glen Canyon Dam in accordance with Article II (3) of the Operating Criteria unless the minimum objective release criterion in Article II (2) is controlling. If the equalization criterion is controlling, Glen Canyon Dam will be operated to release sufficient water during water year 2001 to equalize, as nearly as practicable, the active reservoir contents of Lake Powell and Lake Mead on September 30, 2001.

Taking into account the factors listed in Article III(3)(b) of the Operating Criteria, the surplus condition is the criterion governing the operation of Lake Mead for calendar year 2001. The surplus condition is defined as annual pumping and release from Lake Mead sufficient to satisfy in excess of 9,251 MCM (7.500 MAF) of consumptive use in accordance with Article III(3)(b) of the Operating Criteria and Article II(B)(2) of the U.S. Supreme Court Decree in Arizona vs. California (the Decree). The amount of additional mainstream water being made available during calendar year 2001 is limited to a maximum of 777 MCM (0.630 MAF). Any Lower Division State will be allowed to use water apportioned to, but unused by, another Lower Division State in accordance with Article II(B)(6) of the Decree.

Pursuant to the 1944 United States-Mexico Water Treaty, it has been determined that under most probable inflow conditions, water in excess of that required to supply uses in the United States will not be available during calendar year 2001. Therefore, a volume of 1,850 MCM (1.5 MAF) of water will be allowed to be scheduled for delivery to Mexico during calendar year 2001 in accordance with Article 15 of the 1944 U.S.-Mexico Water Treaty and Minute No. 242 of the International Boundary and Water Commission.

It is my intention that Glen Canyon Dam will continue to be operated on a long-term basis in conformance with the objectives of the Beach/Habitat Building Flow described in the Record of Decision for the Glen Canyon Dam Final Environmental Impact Statement.

Anticipated increases in the use of Colorado River water dictate that the efficient use of water must be a priority to properly manage the resource. Consultations concerning water conservation measures and operating practices will be carried out under Title 43 CFR Part 417, Procedural Methods for Implementing Colorado River Water Conservation Measures with Lower Basin Contractors and Others.

Sincerely,

J. William McDonald
Regional Director
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(Exercising the Commissioner's Authority)

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2001 ANNUAL OPERATING PLAN

FOR

COLORADO RIVER SYSTEM RESERVOIRS

INTRODUCTION

Authority

This 2001 annual operating plan (AOP) was developed in accordance with Section 602 of *The Colorado River Basin Project Act* (Public Law 90-537), and the *Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act of September 30, 1968* (Operating Criteria), promulgated by the Secretary of the Interior pursuant thereto and other applicable statutes. In accordance with *The Colorado River Basin Project Act* and the Operating Criteria, the AOP must be developed and administered consistent with applicable Federal laws, *The Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, Treaty Between the United States of America and Mexico*, signed February 3, 1944 (1944 U.S.-Mexico Water Treaty), interstate compacts, court decrees, and other documents relating to the use of the waters of the Colorado River, which are commonly and collectively known as "The Law of the River."

The Operating Criteria and Section 602 of *The Colorado River Basin Project Act* mandates consultation with representatives of the Governors of the seven Basin States and such other parties as the Secretary may deem appropriate in preparing the annual plan for operation of the Colorado River reservoirs. In addition, *The Grand Canyon Protection Act of 1992* (Title XVIII of Public Law 102-575) requires consultation to include the general public and others. Accordingly, the 2001 AOP was prepared by the Bureau of Reclamation (Reclamation) in consultation with the seven Basin States Governors' representatives; the Upper Colorado River Commission; Native American Tribes; appropriate Federal agencies; representatives of the academic and scientific communities, environmental organizations, and the recreation industry; water delivery contractors; contractors for the purchase of Federal power; others interested in Colorado River operations; and the general public, through the Colorado River Management Work Group (CRMWG).

Purpose

The purposes of the AOP are to determine: (1) the projected operation of the Colorado River reservoirs to satisfy project purposes under varying hydrologic and climatic conditions; (2) the quantity of water considered necessary as of September 30, 2001, to be in storage in the Upper Basin reservoirs as required by Section 602(a) of *The Colorado River Basin Project Act*; (3) water available for delivery pursuant to the 1944 U.S.-Mexico Water Treaty and Minute No. 242 of the International Boundary and Water Commission, United States and Mexico (IBWC); (4) whether the reasonable consumptive use requirements of mainstream users in the Lower Division States will be met under a "normal," "surplus," or "shortage" condition as outlined in Article III of the Operating Criteria; and (5) whether water apportioned to, but unused by one or more Lower Division States exists and can be used to satisfy beneficial consumptive use requests of mainstream users in other Lower Division States as provided in the 1964 U.S. Supreme Court Decree in *Arizona v. California* (Decree).

Consistent with the above determinations and in accordance with other provisions of "The Law of the River," the AOP was developed with "appropriate consideration of the uses of the reservoirs for all purposes, including flood control, river regulation, beneficial consumptive uses, power production, water quality control, recreation, enhancement of fish and wildlife, and other environmental factors" (Operating Criteria, Article I(2)).

Since the hydrologic conditions of the Colorado River Basin can never be completely known in advance, the AOP addresses the operations resulting from three different hydrologic scenarios: the probable maximum, most probable, and probable minimum reservoir inflow conditions. River operations under the plan are modified during the year as runoff predictions are adjusted to reflect existing snowpack, basin storage, and flow conditions.

Summary

Upper Basin Delivery. Storage equalization and the avoidance of spills will control the annual releases from Glen Canyon Dam in accordance with Article II(3) of the Operating Criteria unless the minimum objective release criterion in Article II(2) is controlling.

Lower Basin Delivery. Downstream deliveries and/or flood control parameters are expected to control the releases from Hoover Dam.

Taking into account (1) the existing water storage conditions in the basin, (2) the most probable near-term water supply conditions in the basin, and (3) that the beneficial consumptive use requirements of Colorado River mainstream users in the Lower Division States are expected to be more than 9,250 million cubic meters (MCM), or 7.5 million acre-feet (MAF), the surplus condition is the criterion governing the operation of Lake Mead for calendar year 2001 in accordance with Article III(3)(b) of the Operating Criteria and Article II(B)(2) of the Decree.

Any Lower Division State may be allowed to utilize water apportioned to, but unused by, another Lower Division State in accordance with Article II(B)(6) of the Decree.

1944 U.S.-Mexico Water Treaty Delivery. A volume of 1,850 MCM (1.5 MAF) of water will be allowed to be scheduled for delivery to Mexico during calendar year 2001 in accordance with Article 15 of the 1944 Mexico Water Treaty and Minute No. 242 of the International Boundary and Water Commission.

2000 OPERATIONS SUMMARY AND RESERVOIR STATUS

Water year 2000 observed dry hydrologic conditions in the basin. The distribution of precipitation and snowpack accumulation through the water year, however, was quite varied. Very dry weather in late October, November, and December 1999 resulted in snowpack levels being very low by January 1, 2000. The final January inflow forecast issued by the National Weather Service called for only 52 percent of average April through July unregulated inflow into Lake Powell. January, February, and March, however, were months with above average precipitation and the hydrologic picture had improved by April 1, 2000. The final April inflow forecast called for 85 percent of average April through July unregulated inflow into Lake Powell. Hydrologic conditions reversed again in April. April was very dry and much warmer than average in the Colorado River Basin, with many snow recording sites recording a record loss of snow during the month. The National Weather Service significantly reduced the April through July inflow forecast from April to May, with the May forecast calling for only 69 percent of average. Basinwide precipitation in the months of May, June, and July was also below average and inflow projections were further reduced as each of these months passed. The actual April through July unregulated inflow into Lake Powell was 5,370 MCM (4.35 MAF), only 56 percent of average.

Water year 2000 unregulated inflow into Lake Powell was 9,020 MCM (7.32 MAF), or 62 percent of average. This below average inflow resulted in a decrease of approximately 2,540 MCM (2.06 MAF) of storage in Lake Powell. Storage in reservoirs upstream of Lake Powell decreased by approximately 1,080 MCM (0.88 MAF). In Lower Basin reservoirs, storage decreased by approximately 2,660 MCM (2.16 MAF). Total Colorado River system storage decreased by approximately 6,280 MCM (5.09 MAF) during water year 2000. Even with this decrease in storage, Colorado River reservoirs remain relatively full with total system storage at 83 percent of capacity as of September 30, 2000. During 2000, all deliveries of water to meet valid obligations pursuant to applicable provisions of "The Law of the River" were maintained. It is estimated that with average inflow during 2001, the system will remain relatively full.

Tables 1(a) and 1(b) list the October 1, 2000, reservoir vacant space, live storage, water elevation, percent of capacity, change in storage, and change in water elevation during water year 2000.

Table 1(a). Reservoir Conditions on October 1, 2000 (Metric Units)

Reservoir	Vacant Space (MCM)	Live Storage (MCM)	Water Elevation (meters)	Percent of Capacity (percent)	Change in Storage* (MCM)	Change in Elevation* (meters)
Fontenelle	148	278	1978	65	-96	-3.3
Flaming Gorge	912	3,713	1835	80	-512	-3.4
Blue Mesa	334	688	2282	67	-224	-6.8
Navajo	417	1,674	1847	80	-248	-4.5
Lake Powell	4,173	25,828	1121	86	-2,539	-4.2
Lake Mead	6,085	27,685	365	82	-2,650	-4.4
Lake Mohave	354	1,879	194	84	10	0.1
Lake Havasu	66	698	136	91	-22	-0.3
Totals	12,488	62,442	--	83	-6,281	--

* From October 1, 1999 to September 30, 2000.

Table 1(b). Reservoir Conditions on October 1, 2000 (English Units)

Reservoir	Vacant Space (MAF)	Live Storage (MAF)	Water Elevation (feet)	Percent of Capacity (percent)	Change in Storage* (MAF)	Change in Elevation* (feet)
Fontenelle	0.120	0.225	6490	65	-0.078	-10.9
Flaming Gorge	0.739	3.010	6021	80	-0.415	-11.1
Blue Mesa	0.271	0.558	7487	67	-0.182	-22.3
Navajo	0.338	1.357	6061	80	-0.201	-14.8
Lake Powell	3.383	20.939	3678	86	-2.058	-13.8
Lake Mead	4.933	22.444	1197	82	-2.148	-14.6
Lake Mohave	0.287	1.523	636	84	0.008	0.3
Lake Havasu	0.053	0.566	447	91	-0.018	-1.0
Totals	10.124	50.622	--	83	-5.092	--

* From October 1, 1999 to September 30, 2000.

2001 WATER SUPPLY ASSUMPTIONS

For 2001 operations, three reservoir unregulated inflow scenarios were developed and analyzed and are labeled as probable maximum, most probable, and probable minimum. The attached graphs show these inflow scenarios and associated release patterns and end of month contents for each reservoir.

Although there is considerable uncertainty associated with streamflow forecasts and reservoir operating plans made a year in advance, these projections are valuable in analyzing possible impacts on project uses and purposes. The most probable inflow in water year 2001 is projected to be near normal. Therefore, the magnitude of inflows in each of the three inflow scenarios are near the historical upper decile, mean, and lower decile (10 percent exceedance, 50 percent exceedance, and 90 percent exceedance, respectively) for each reservoir for water year 2001. The three inflow scenarios for Lake Powell are shown in Tables 2(a) and 2(b).

The volume of inflow resulting from these assumptions was used as input into Reclamation's monthly reservoir simulation model. This model is used to plan reservoir operations for the upcoming 24-month period. Projected water year 2001 inflow and October 1, 2000 reservoir storage conditions were used as input to this model and monthly releases were adjusted until release and storage levels accomplished project purposes.

Table 2(a). Projected Unregulated Inflow
Into Lake Powell for Water Year 2001
(Metric Units: MCM)

Time Period	Probable Maximum	Most Probable	Probable Minimum
10/00 - 12/00	1,950	1,233	1,143
1/01 - 3/01	2,176	1,613	1,497
4/01 - 7/01	15,802	9,541	4,199
8/01 - 9/01	2,043	1,342	797
10/01 - 12/01	1,850	1,850	1,850
WY 2001	21,971	13,731	7,637
CY 2001	21,871	14,347	8,343

Table 2(b). Projected Unregulated Inflow
Into Lake Powell for Water Year 2001
(English Units: MAF)

Time Period	Probable Maximum	Most Probable	Probable Minimum
10/00 - 12/00	1.581	1.000	0.927
1/01 - 3/01	1.764	1.308	1.214
4/01 - 7/01	12.811	7.735	3.404
8/01 - 9/01	1.656	1.088	0.646
10/01 - 12/01	1.500	1.500	1.500
WY 2001	17.812	11.131	6.191
CY 2001	17.731	11.631	6.764

2001 RESERVOIR OPERATIONS

Minimum instream flow levels and annual operating strategies have been established at several locations in the Upper Basin which are intended to protect the aquatic resources downstream of specific dams. The regulation of the Colorado River has had both positive and negative effects on aquatic resources. Controlled cool water releases from dams have provided for increased productivity of some aquatic resources and the development of significant introduced sport fisheries. However, the same releases may be deemed detrimental to endangered and other native species of fishes.

Consultations with the Fish and Wildlife Service in compliance with Section 7 of the Endangered Species Act (Section 7 consultations) on the operation of the Aspinall Unit on the Gunnison River, Navajo Dam on the San Juan River, Flaming Gorge on the Green River, and Glen Canyon Dam will continue in 2001. Studies associated with these consultations will be used to better understand the flow related needs of endangered and other native species of fish.

Modifications to planned operations may be made based on changes in forecast conditions. However, due to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, Section 7 consultations, and other downstream concerns, modification to the monthly operation plans may be based on other factors in addition to changes in streamflow forecasts. Decisions on spring peak releases and downstream habitat target flows may be made midway through the runoff season. Reclamation and the Fish and Wildlife Service will initiate meetings with interested parties, including representatives of the Basin States, to facilitate the decisions necessary to finalize site-specific operations plans.

Reclamation completed Section 7 consultation with the Fish and Wildlife Service in April 1997 on current and projected discretionary routine lower Colorado River operations and maintenance activities for a period of up to 5 years. Reclamation and the Fish and Wildlife Service have also formed a partnership with other federal, state, and private agencies to develop the Lower Colorado River Multi-Species Conservation Program. This program permits both nonfederal and federal parties to participate under Sections 7 and 10 of the Endangered Species Act.

The following paragraphs discuss the operation of each of the reservoirs with respect to compact, decree, and statutory water delivery obligations; and instream flow needs for maintaining or improving aquatic resources, where appropriate.

Fontenelle Reservoir

Precipitation and ensuing runoff in the Upper Green River Basin during water year 2000 was below average. The April through July runoff into Fontenelle during water year 2000 was 616 MCM (0.50 MAF), or 59 percent of normal. Inflow peaked at 154 cms (5,440 cfs) on May 27, 2000. Releases in excess of powerplant capacity were not required from Fontenelle Reservoir in 2000. Maximum releases in 2000 were powerplant capacity releases of approximately 45 cms

(1,600 cfs). Fontenelle Reservoir reached a peak elevation of 1,980.1 meters (6,496.3 feet), 3.0 meters (9.7 feet) from the crest of the spillway. This occurred on June 29, 2000.

Because the mean annual inflow of 1,516 MCM (1.229 MAF) far exceeds Fontenelle's storage capacity of 426 MCM (.345 MAF), significant power plant bypasses are expected under the most probable and maximum probable inflow scenarios. Additionally, there is little chance that the reservoir will not fill during water year 2001. In order to minimize spring high releases, and to maximize downstream resources and power production, the reservoir will probably be drawn down to minimum pool elevation, 1,970.0 meters (6,463 feet), which corresponds to a volume of 115 MCM (0.093 MAF) of live storage.

Flaming Gorge Reservoir

Inflow into Flaming Gorge was below average during water year 2000. April through July unregulated inflow was 696 MCM (0.564 MAF), or 47 percent of normal. Powerplant capacity releases of 130 cms (4600 cfs) were made for a period of 2 weeks in late May and early June as called for in the 1992 Final Biological Opinion on the Operation of Flaming Gorge. These powerplant capacity releases were successfully timed to meet peak flows on the Yampa River. The Yampa River peaked at approximately 340 cms (12,000 cfs) on June 1, 2000. Peak flows on the Green River near Jensen, an important reach of the Green River for endangered fish, reached a peak flow of about 467 cms (16,500 cfs) on June 1, 2000.

In September 2000, a final report entitled "Flow and Temperature Recommendations for Endangered Fishes in the Green River Downstream of Flaming Gorge Dam" (Flaming Gorge Flow Recommendations) was published by the Upper Colorado River Recovery Program. The report, prepared by a multi-disciplinary team, synthesizes research conducted on endangered fish in the Green River under the Upper Colorado River Recovery Program and presents flow recommendations for three reaches of the Green River. Reclamation has begun a National Environmental Policy Act (NEPA) process on the implementation of an operation at Flaming Gorge Dam that meets these flow recommendations. A Notice of Intent to prepare an Environmental Impact Statement (EIS) was filed on June 6, 2000, in the Federal Register. The draft EIS is scheduled to be published in August 2001. The completion of the final EIS and Record of Decision (ROD) is scheduled to occur in 2002.

In water year 2001, Flaming Gorge will be operated in accordance with the Biological Opinion on the Operation of Flaming Gorge (BOFG), issued in November 1992. The BOFG calls for high spring releases to occur each year, timed with the peak of the Yampa River, so as to mimic historic Green River flows.

Blue Mesa, Morrow Point, and Crystal Reservoirs (Aspinall Unit)

In water year 2000, the April through July unregulated runoff into Blue Mesa Reservoir was 623 MCM (0.505 MAF), or 72 percent of average. Water year 2000 unregulated inflow was 934 MCM (0.756 MAF), or 78 percent of average. Water year 2000 powerplant bypasses were

approximately 131 MCM (0.106 MAF) at Crystal, the result of annual system maintenance and spring runoff exceeding powerplant capacity. Releases up to 112 cms (3,960 cfs) occurred at Crystal, with flows in the river below the tunnel in excess of 92 cms (3,240 cfs). Blue Mesa Reservoir reached a peak elevation of 2,288.8 meters (7,509.1 feet), 3.1 meters (10.3 feet) from full, on June 17, 2000.

In January 2000, a final draft report entitled "Flow Recommendations to Benefit Endangered Fishes in the Colorado and Gunnison Rivers" was submitted to the Upper Colorado River Recovery Program Biology Committee. The report, prepared by a multi-disciplinary team, synthesizes research conducted on endangered fish in the Gunnison River and Colorado River under the Upper Colorado River Recovery Program. This report presents flow recommendations for two different river reaches, one for the Lower Gunnison River near Grand Junction, Colorado, and the other one for the Colorado River downstream from the Gunnison River. The Flow Recommendations report will most likely be finalized by the Upper Colorado River Recovery Program in 2000. Reclamation intends to initiate a NEPA process to implement the finalized flow recommendations. An EIS will be prepared which describes the effects of operating the Aspinall Unit to achieve the finalized flow recommendations.

For water year 2001 operations, Blue Mesa Reservoir will be drawn down to at least an elevation of 2,283 meters (7,490 feet) by December 31, 2000, in order to minimize icing problems in the Gunnison River. Blue Mesa will continue to be drawn down through April 2001 to a level that will accommodate the current most probable inflow scenario and accomplish the release objectives with minimal powerplant bypasses at Crystal.

The minimum release objectives of the Aspinall Unit are to meet the delivery requirements of the Uncompahgre Valley Project, to keep a minimum of 8.5 cms (300 cfs) flowing through the Black Canyon of the Gunnison National Park, and to maintain a minimum flow of 8.5 cms (300 cfs) below the Redlands Diversion Dam (located on the Gunnison River, 3.7 kilometers [2.3 miles] upstream of the confluence with the Colorado River) during the summer months. Under the most probable and maximum probable inflow scenarios, Blue Mesa is expected to fill in the summer of 2001 and flows through the Black Canyon of the Gunnison National Park are expected to be above the minimum release objective during the summer months. The Aspinall Unit reservoir system in water year 2001 will be operated in a manner that will ensure that reasonable specific test releases, for endangered fish, can be accommodated. The forecasted runoff for the spring of 2001 will be closely monitored to achieve these objectives. To protect both the blue ribbon trout fishery in the Black Canyon and recreation potential, releases during 2001 will be planned to minimize large fluctuations in the daily and monthly flows in the Gunnison River below the Uncompahgre Tunnel Diversion.

Navajo Reservoir

The San Juan River basin experienced another very dry winter, the second in a row. The April through July inflow into Navajo Reservoir in water year 2000 was 416 MCM (0.337 MAF), or

44 percent of average. Navajo Reservoir reached a peak elevation of 1,851.1 meters (6,077.16 feet) on May 30, 2000.

The final report titled "Flow Recommendations for the San Juan River," which outlines flow recommendations for the San Juan River below Navajo Dam, was completed by the Biology Committee of the San Juan River Basin Recovery Implementation Program (SJRIP) in May 1999. The report synthesizes research conducted on endangered fish in the San Juan River over a 7-year period. The purpose of the report is to provide flow recommendations for the San Juan River that promote the recovery of the endangered Colorado pikeminnow and razorback sucker, maintain important habitat for these two species, as well as the other native species, and provide information for the evaluation of continued water development potential in the basin. Reclamation has begun a National Environmental Policy Act (NEPA) process on the implementation of an operation at Navajo Dam that meets these flow recommendations or a reasonable alternative to them. A Notice of Intent to prepare an Environmental Impact Statement (EIS) was filed on October 1, 1999, in the Federal Register. The draft EIS is scheduled to be published in October 2001. The completion of the final EIS and Record of Decision (ROD) is scheduled to occur in 2002.

During the spring a large release of up to 142 cms (5,000 cfs) was made during May and June to coincide with the peak flows of the Animas River as prescribed by the flow recommendations. After the completion of the large spring releases, releases were gradually reduced to approximately 14 cms (500 cfs) for the remainder of the year.

In water year 2001, Navajo Reservoir is expected to nearly fill under the probable maximum inflow scenario. The reservoir should fill above 80 percent of full under the most probable and probable minimum scenarios. Releases from the reservoir will be held near 14 cms (500 cfs) through the fall and winter months and large releases will likely be made in May and June pursuant to the flow recommendations to improve the habitat and provide better spawning conditions for endangered fish in the San Juan River.

Lake Powell

Lake Powell began water year 2000 nearly full with 28.4 MCM (23.0 MAF) of storage (95 percent of capacity). Only in the high water years of 1983 and 1984 was storage higher in Lake Powell on October 1. Because of this high carryover storage and early season forecasted inflow, releases in October, November, and December from Lake Powell were relatively high, approximately 1.2 MCM (1.0 MAF) per month.

Water year 2000, however, turned out to be quite dry in the Colorado River basin. April through July unregulated inflow into Lake Powell in water year 2000 was 5,370 MCM (4.35 MAF), 56 percent of average. Water year 2000 unregulated inflow was 9,020 MCM (7.32 MAF), 62 percent of average. Lake Powell reached a peak elevation of 1,122.7 meters (3683.4 feet) on June 30, 2000 (16.6 feet from full).

In 1994, the Fish and Wildlife Service issued a Biological Opinion on the Operation of Glen Canyon Dam. One of the elements of the reasonable and prudent alternative in the Biological Opinion is a "program of experimental flows . . . to include high steady flows in the spring and low steady flows in the summer and fall during low water years (releases of approximately 8.23 MAF)." This 10,152 MCM (8.23 MAF) release volume is the minimum release objective of the Operating Criteria.

Since issuance of the Biological Opinion, hydrologic conditions have caused releases from Glen Canyon Dam to exceed the minimum release objective and this experimental flow program has not been initiated.

The January inflow forecast for April through July unregulated inflow to Lake Powell was for 4,942 MCM (4.0 MAF) which is only 52 percent of average. Under this forecast, scheduled releases from Lake Powell in water year 2000 were 10,300 MCM (8.3 MAF). Planning for the implementation of experimental flows began at this time. January, February, and March, however, were months with moderately above average precipitation in the Colorado River Basin. Forecasted inflow stayed below average but increased from 52 percent of average in January to 78 percent of average in March, resulting in planned water year releases of about 11,600 MCM (9.40 MAF), as required under the equalization criterion. However, because initial releases in water year 2000 were above the minimum release objective, releases for the remainder of water year 2000 closely resembled a minimum release objective pattern and Reclamation continued with the planning for a test release. This test release proposal was called low steady summer flows (LSSF).

The LSSF test releases were begun in April. From April through May, "ponding" releases of 382 cms (13,500 cfs) or higher were made. A 4-day powerplant capacity release of approximately 850 cms (30,000 cfs), as part of the test releases, was made from May 3 through May 5, as well. Releases in June, July, August, and most of September were 227 cms (8,000 cfs).

Even though 2000 was not a minimum release objective year, Reclamation executed the LSSF test release pattern because the unusual hydrologic conditions required release volumes in the second half of water year 2000 to be similar to those seen in a minimum objective release year. Knowledge will be gained about the effect of such releases on the endangered humpback chub and other native fish, and better prepare Reclamation to pursue the element of the reasonable and prudent alternative under minimum release objective conditions. Conducting this experiment was consistent with Reclamation's plan to implement the elements of the reasonable and prudent alternative in the Biological Opinion.

During water year 2001, releases greater than the minimum release objective of 10,152 MCM (8.230 MAF) will likely be made to avoid anticipated spills and/or to equalize the storage between Lakes Powell and Mead. Under the most probable inflow conditions, releases of 11,600 MCM (9.40 MAF) will be made, while under the probable maximum inflow scenario, approximately 17,400 MCM (14.1 MAF) will be released. Releases above powerplant capacity are possible in 2001. Such releases would be made consistent with the 1956 Colorado River Storage Project Act,

the 1968 Colorado River Basin Project Act, the 1992 Grand Canyon Protection Act, and the Secretary of the Interior's agreement for managing spills from Glen Canyon Dam, initially made in the 1996 AOP. This agreement provides for the use of reservoir releases in excess of powerplant capacity required for dam safety purposes during high reservoir conditions to accomplish the objectives of the Beach/Habitat Building Flow described in the ROD for the Glen Canyon Dam Final Environmental Impact Statement (GCDFEIS).

Releases from Lake Powell in water year 2001 will continue to reflect consideration of the uses and purposes identified in the authorizing legislation for Glen Canyon Dam. Power plant releases and Beach/Habitat Building Flows will reflect criteria based on the findings, conclusions, and recommendations made in the ROD for the GCDFEIS pursuant to the Grand Canyon Protection Act of 1992.

Daily and hourly releases will continue to be made according to the parameters of the ROD for the GCDFEIS preferred alternative, and published in the Glen Canyon Dam Operating Criteria (62 Federal Register 9447, Mar. 3, 1997), as shown in the following table:

Table 3. Glen Canyon Dam Release Restrictions

Parameter	(cms)	(cfs)	conditions
Maximum flow [1]	708.0	25,000	
Minimum flow	141.6	5,000	nighttime
	226.6	8,000	7:00 am to 7:00 pm
Ramp rates			
ascending	113.3	4,000	per hour
descending	42.5	1,500	per hour
Daily fluctuations [2]	141.6 / 226.6	5,000 / 8,000	

[1] to be evaluated and potentially increased as necessary and in years when delivery to the Lower Basin exceeds 10,152 MCM (8.23 MAF).

[2] Daily fluctuations limit is 141.6 cms (5,000 cfs) for months with release volumes less than 740 MCM (.600 MAF); 169.9 cms (6,000 cfs) for monthly release volumes of 740 to 987 MCM (.600 to .800 MAF); and 226.6 cms (8,000 cfs) for monthly volumes over 990 MCM (.800 MAF)

Lake Mead

For calendar year 2000, the surplus condition was the criterion governing the operation of Lake Mead in accordance with Article III(3)(b) of the Operating Criteria and Article II(B)(2) of the Decree. A volume of 2,097 MCM (1.7 MAF) of water was scheduled for delivery to Mexico in accordance with Article 15 of the 1944 U.S.-Mexico Treaty and Minute No. 242 of the International Boundary and Water Commission.

Lake Mead began water year 2000 at elevation 369 meters (1,211.3 feet), with 30,334 MCM (24.592 MAF) in storage, 95 percent of the conservation capacity of 31,919 MCM (25.877 MAF). During the year, Lake Mead reached its maximum elevation of 370 meters (1214.3 feet) at the end of January, 2000, with 30,894 MCM (25.046 MAF) in storage, 97 percent of capacity. Lake Mead reached its minimum elevation of 365 meters (1,196.6 feet) at the end of August 2000.

Non-damaging, space building, flood control releases were once again initiated in September 1999. These releases continued through December 1999. In total 2,109 MCM (1.71 MAF) were released above downstream demands in water year 2000. The total release from Lake Mead through Hoover Dam during water year 2000 was 13,559 MCM (10.993 MAF), with an additional 396 MCM (0.321 MAF) being diverted from Lake Mead by the Robert Griffith Water Project.

Under the most probable inflow conditions during water year 2001, Lake Mead will be at its maximum elevation of 365 meters (1,196.69 feet) at the beginning of the water year and will generally decline during the water year to reach its minimum elevation of 361 meters (1,184.05 feet) in June 2001, dropping approximately 4 meters (12 feet). After June, Lake Mead will slowly rise to end the water year at an elevation of 362 meters (1187.89 feet). No flood control releases are required during water year 2001 under the most probable inflow scenario.

No flood control releases are anticipated in calendar year 2001 under the minimum probable scenario. Under the maximum probable scenario, flood control releases are required January, February, and March 2001 at the 19,000 cfs level, and space building releases are required in November and December 2001.

As Lake Mead remains near capacity and flood control releases may be required by the Hoover Dam Flood Control Regulations, consideration will be given to making these releases over the fall and winter months of 2001 to avoid high flow releases during the January through July runoff season in year 2002. This distribution of water reduces the chance of bypassing hydroelectric powerplants below Hoover Dam and avoids the adverse impacts of higher flood control releases on recreation, water quality, property, and river stabilization.

Lakes Mohave and Havasu

At the beginning of water year 2000, Lake Mohave was at an elevation of 194 meters (636.1 feet), with an active storage of 1,869 MCM (1.515 MAF). The water level of Lake Mohave was regulated as needed between elevation 192 meters (631 feet) and 196 meters (644 feet) throughout the water year, ending at an elevation of 194 meters (636.4 feet) with 1,878 MCM (1.523 MAF) in storage. The total release from Lake Mohave through Davis Dam was 13,176 MCM (10.682 MAF) for downstream water use requirements, flood control, and space building.

For water year 2001, Lake Mohave is expected to release 12,260 MCM (9.939 MAF). The water level will be regulated between an elevation of 192 meters (630 feet) and 196 meters (643 feet).

Lake Havasu started water year 2000 at an elevation of 136.6 meters (448.2 feet), with 720 MCM (0.584 MAF) in storage. During the year, 9,891 MCM (8.019 MAF) was released from Parker Dam. In addition to these releases, 1,669 MCM (1.353 MAF) was diverted from Lake Havasu into the Central Arizona Project (CAP) and 1,602 MCM (1.299 MAF) by the Metropolitan Water District (MWD).

For water year 2001, Lake Havasu is expected to release 9,008 MCM (7.303 MAF). Diversions from Lake Havasu by MWD and CAP are expected to be 1,542 MCM (1.25 MAF) and 2,023 MCM (1.640 MAF), respectively.

Mohave and Havasu Reservoirs are scheduled to be drawn down in the late summer and winter months to provide storage space for local storm runoff and will be filled in the spring to meet higher summer water needs. This drawdown will also correspond with maintenance at both Davis and Parker powerplants which is scheduled for September through February. During 2001, Lake Mohave will continue to be operated under the constraints as described in the Biological and Conference Opinion on Lower Colorado River Operations and Maintenance. The normal filling pattern of these two reservoirs coincides well with the fishery spawning period. Since lake elevations will be typical of previous years, normal conditions are expected for boating and other recreational uses.

Reclamation is the lead agency in the Native Fish Work Group, a multi-agency group of scientists attempting to augment the aging stock of the endangered razorback sucker in Lake Mohave. Larval suckers are captured by hand in and around spawning areas in late winter and early spring for rearing at Willow Beach Fish Hatchery below Hoover Dam. The following year, one year old suckers are placed into predator-free, lake-side backwaters for rearing through the spring and summer. When the lake is normally drawn down during the fall, these fish are harvested from these rearing areas and then released to the lake. The suckers grow very quickly, usually exceeding ten inches in length by September.

Imperial Dam

Imperial Dam is the last diversion dam on the Colorado River for United States water users. From its headworks flow the diversions into the All American Canal on the California side, and into the Gila Gravity Main Canal on the Arizona side. These diversions supply all the irrigation districts in the Yuma area and in the Wellton-Mohawk, Imperial, and Coachella Valleys. During the flood control releases of 1997-1999, large amounts of sediment were moved to the dam and accumulated, impairing operation of the diversion gates to both the California and Arizona sides. Contracted dredging operations began in March 2000 to remove approximately one million cubic yards of material from in front of both diversion works and across the face of the overflow weir. The dredging operation was completed in June 2000.

Senator Wash and Laguna Reservoirs

Operations at Senator Wash Reservoir allow regulation of water deliveries to United States and Mexican water users downstream at Imperial Dam. The reservoir is utilized as an off-stream storage facility to meet downstream water demands and to conserve water for future uses in the United States and the scheduled uses of Mexico Treaty obligation. Senator Wash Reservoir is the first storage facility below Parker Dam, located approximately 142 river miles upstream. Operational objectives are to store excess flows from the river which have been caused by water user cutbacks and sidewash inflows due to rain. Stored waters are utilized to meet irrigation, recreational, and Treaty demands. An elevation restriction of 240.0 feet at Senator Wash Reservoir, due to potential piping at West Squaw Lake Dike and Senator Wash Dam, currently diminishes the storage capability of the Reservoir. A Safety of Dams project is underway at Senator Wash which has temporarily decreased the storage elevation to 230.0 feet. A first-fill monitoring test is scheduled to occur at Senator Wash Reservoir in late water year 2000 or early water year 2001, to determine the extent of repairs required in order to utilize the full storage capacity of the Reservoir.

Laguna Reservoir is a regulating storage facility located approximately 7 river miles downstream of Senator Wash. Operational objectives are similar to those for Senator Wash Reservoir. The storage capability of Laguna Reservoir is currently diminished due to sediment accumulation and vegetation growth. Sediment accumulation in the reservoir has occurred primarily due to flooding that occurred in 1983 and 1984. Dredging of the Laguna Reservoir to increase its storage capability is scheduled to begin in water year 2002.

Yuma Desalting Plant

The Yuma Desalting Plant (YDP) was not operated in 2000. Most of the damage to the YDP's associated facilities caused by the 1993 Gila River flood has been repaired. Those associated facilities are the Main Outlet Drain (MOD), the Main Outlet Drain Extension (MODE), and the Bypass Drain, which extends from the YDP to the Cienega de Santa Clara on the coast of the Sea of Cortez. The first half mile section of the MODE was damaged during the 1993 Gila River flood. This section is operable and the damage is not affecting the operation of the MODE or

YDP. This section has not been repaired to date because of the high costs involved associated with dewatering the area. Seepage from the drain is less than one percent of the ground water flow in the area and is not affecting the quality of the ground water. Since the 1993 flood, a levee has been built between the MODE and the Gila River channel to direct flood flows away from the damaged area. Minor repair work is accomplished each year to replace isolated, broken panels and to clean debris from the drain system. At this time, repair for the first half mile reach of the MODE has not been included in any future budgets. All Wellton-Mohawk Irrigation & Drainage District drainage flows should be diverted into the MODE in 2001. There is a potential that a portion of the drainage return flows may be diverted to the Colorado River during short periods while repairs to the MODE and Bypass Drain are being made. These releases are not expected to impact meeting the requirements of the salinity differential of Minute 242 of the International Boundary and Water Commission (IBWC).

The Water Quality Improvement Center (WQIC) processes about one million gallons per day of drainage water, delivered either from the MODE, pumped from an on-site well, or diverted from the Cooper Lateral. The WQIC will continue to operate during calendar year 2001. An Education Center affiliated with the WQIC was constructed during 1999 and currently offers classes to the public in water treatment by reverse osmosis. The first class started in August 1999 in cooperation with Arizona Western College in Yuma.

Colorado River Channel Aggradation Below Gila River Confluence

The 1993 Gila River flood deposited approximately 10 million cubic yards of sediment in the Colorado River between its confluence with the Gila and Morelos Dam. An additional unspecified volume of sediment was deposited in the river channel below Morelos Dam. The aggradation of the channel has substantially reduced the river's capability to carry flood flows, to act as a drain for groundwater, and has occasionally caused operational problems with the delivery of Treaty water to Mexico at Morelos Dam.

The Yuma Area Office developed a project proposal to address the aggradation problems in cooperation with local irrigation districts, the IBWC, Native American Tribes, local environmental organizations, local governments, and other state and federal agencies.

The overall project has been developed in phases. Phase 1 of the project was completed in late 1997 so the channel below Morelos Dam could accommodate flood control releases from Hoover Dam during the winters of 1997 and 1998. Phase 1 consisted of limited clearing of a flow path in the channel below Morelos Dam, and realignment of the channel upstream of Yuma at River Mile 31, where the levee was in danger of being breached during high flows.

Phase 2 of the project began in September 1999. Phase 2 consisted of dredging a sediment basin in the river channel immediately upstream of Morelos Dam to a location about one mile above the NIB. The sediment basin will alleviate most of the operational problems due to sediment laden waters being delivered to Mexico at Morelos Dam. A postponement of the operations of

this phase occurred due to mechanical problems. Dredging of this basin was resumed in May 2000 and is scheduled to last until January 2001.

The need for completing Phases 3 and 4 of the project is currently being reviewed and studied. The space building and flood control releases experienced during the winters of 1997, 1998, and 1999, as well as the natural dynamic nature of the river system, make this review prudent.

Limitrophe Division Below Morelos Dam

The IBWC has initiated the development of an Environmental Impact Statement (EIS) to address the work necessary to develop and undertake a boundary preservation project within the Limitrophe section of the Colorado River. The flood events of 1983 and 1993 has changed the course of the river and deposited approximately 10 million cubic yards of material within the first 5.5 miles of the river below Morelos Dam, affecting the carrying capacity of the river and contributing to higher groundwater levels in the Yuma Valley. The EIS will identify the best U.S./Mexico alternative to be undertaken for the proposed project.

The following schedule is proposed for the EIS.

Feb 3, 1999	Meeting with cooperators and resource agencies
May 21, 1999	Notice of Intent
Jun 9, 1999	Public scoping meeting
Aug 15, 2000	Development of maps for boundary alignments and significant habitat
Mar 5, 2001	Bi-national meeting for determination of alignment
Jan 18, 2002	Presentation to all Resource agencies on preliminary alignment alternatives/plan
May 10, 2002	Notice of availability of draft EIS in Federal Register
May 31, 2002	Public meeting on draft EIS
Sep 13, 2002	File final EIS
Dec 20, 2002	Record of Decision

2001 DETERMINATIONS

The AOP provides guidance regarding reservoir storage and release conditions during the upcoming year, based upon Congressionally mandated and authorized storage, release, and delivery criteria and determinations. After meeting these requirements, specific reservoir releases may be modified within these requirements as forecast inflows change in response to climatic variability and to provide additional benefits coincident to the projects' multiple purposes.

Upper Basin Reservoirs

The Operating Criteria provide that the annual plan of operation shall include a determination of the quantity of water considered necessary to be in Upper Basin storage at the end of the water year. Taking into consideration all relevant factors required by the Operating Criteria, it is determined that the active storage in Upper Basin reservoirs forecast for September 30, 2001, exceeds the storage required under Section 602(a) of the *Colorado River Basin Project Act* under any reasonable range of assumptions which might be applied. Therefore, "602(a) Storage" is not the criterion controlling the release of water from Glen Canyon Dam during water year 2001.

Section 602(a)(3) of the *Colorado River Basin Project Act* provides for the storage of Colorado River water in Upper Basin reservoirs that the Secretary of the Interior finds necessary to assure deliveries to comply with Articles III(c) and III(d) of the 1922 *Colorado River Compact*, without impairment to the annual consumptive use in the Upper Basin. Pursuant to Section 602(b), as amended, the Secretary is required to make this determination after consultation with the Upper Colorado River Commission and representatives from the three Lower Division States, and after taking into consideration all relevant factors including historic stream flows, the most critical period of record, the probabilities of water supply, and estimated future depletions. Water not required to be so stored will be released from Lake Powell:

- to the extent it can be reasonably applied in the States of the Lower Division to the uses specified in Article III(e) of the 1922 *Colorado River Compact*, but these releases will not be made when the active storage in Lake Powell is less than the active storage in Lake Mead,

- to maintain, as nearly as practicable, active storage in Lake Mead equal to the active storage in Lake Powell, and

- to avoid anticipated spills from Lake Powell.

The spill avoidance and/or the storage equalization criteria in accordance with Article II(3) of the Operating Criteria will control the releases from Glen Canyon Dam during water year 2001 unless the minimum objective release criterion in Article II(2) is controlling. Under the most probable inflow scenario, Glen Canyon Dam will release 11,600 MCM (9.40 MAF).

Lower Basin Reservoirs

Pursuant to the Operating Criteria and consistent with the Decree, water shall be released or pumped from Lake Mead to meet the following requirements:

(a) 1944 U.S.-Mexico Water Treaty obligations;
(b) Reasonable beneficial consumptive use requirements of mainstream users in the Lower Division States;
(c) Net river losses;
(d) Net reservoir losses;
(e) Regulatory wastes; and
(f) Flood control.

The Operating Criteria provide that after the commencement of delivery of mainstream water by means of the CAP, the Secretary of the Interior will determine the extent to which the reasonable beneficial consumptive use requirements of mainstream users are met in the Lower Division States. The reasonable beneficial consumptive use requirements are met depending on whether a normal, surplus, or shortage condition has been determined. The normal condition is defined as annual pumping and release from Lake Mead sufficient to satisfy 9,251 MCM (7.500 MAF) of consumptive use in accordance with Article III(3)(a) of the Operating Criteria and Article II(B)(1) of the Decree. The surplus condition is defined as annual pumping and release from Lake Mead sufficient to satisfy in excess of 9,251 MCM (7.500 MAF) of consumptive use in accordance with Article III(3)(b) of the Operating Criteria and Article II(B)(2) of the Decree.

The determination of surplus conditions for 2001 is based on the factors listed in Article III(3)(b) of the Operating Criteria. This Article allows for consideration of all relevant factors, including, but not limited to, those specifically listed in the Operating Criteria. Accordingly, several different approaches were considered in making a determination of surplus water supply conditions for use in the Lower Basin States of Arizona, California, and Nevada for calendar year 2001. One of the approaches considered was the seven Colorado River Basin States plan for interim surplus guidelines. At the specific request of the Secretary, the seven Colorado Basin States entered into discussions on the development of interim surplus guidelines. Culminating in the spring of 2000, the Basin States successfully developed the seven Colorado River Basin States plan for interim surplus guidelines. These proposed guidelines were made available as public information during the comment period of the ongoing EIS regarding development of interim surplus criteria. Under the Basin States plan, surplus releases, given current hydrologic conditions, would only be available to meet domestic purposes. Other approaches considered in making a determination of surplus water supply for calendar year 2001 include the probability of future flood control releases, the annual operating decisions made over the last 5 years, the spill avoidance strategy, the shortage protection strategy, and progress made to date on California's Colorado River Water Use Plan. The Secretary also considered all available public information associated with the EIS on interim surplus criteria. Significant consideration was also given to current reservoir storage and preliminary projections of snowpack and runoff within the Colorado River Basin for water year 2001. Taking all these into account, the determination of a surplus water supply condition

in the Lower Basin will govern releases for use in the States of Arizona, Nevada, and California during calendar year 2001. The amount of additional mainstream water being made available during calendar year 2001 is limited to a maximum of 777 MCM (0.630 MAF). Water apportioned to, but unused by one or more Lower Division States may be used to satisfy beneficial consumptive use requests of mainstream users in other Lower Division States as provided in the Decree.

While there is still no agreed upon long term strategy for the determination of surplus conditions, the making of this determination, based upon the considerations noted above, does not preclude the Secretary from adopting other determination criteria in future years. Furthermore, neither this determination nor the basis on which it was made constitutes a precedent for future determinations. On July 7, 2000, Reclamation issued a draft EIS regarding development of proposed interim surplus criteria. It is anticipated that a final EIS will be issued in December 2000, and a Record of Decision in January 2001. The criteria developed through this NEPA process are expected to be used for the determination of surplus for calendar year 2002.

The Decree allows the Secretary to release water apportioned, but unused, in any Lower Division State for that year for consumptive use in any other Lower Division State. No rights to the recurrent use of such water accrue by reason of the use of such water. In light of this provision and in accordance with Article II(B)(6) of the Decree, any Lower Division State may be allowed to utilize water apportioned to, but unused by, another Lower Division State in calendar year 2001.

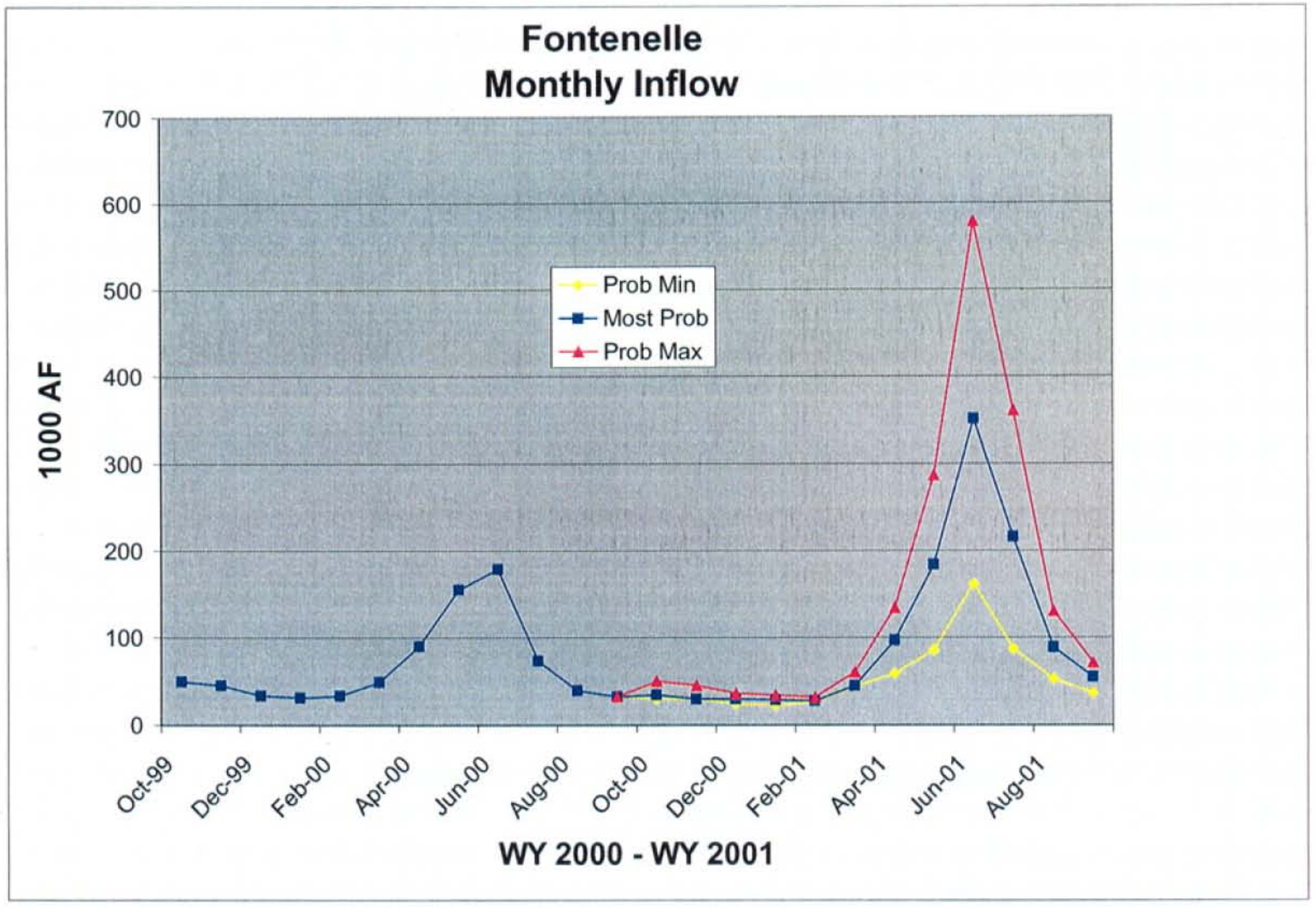
1944 U.S.-Mexico Water Treaty

Pursuant to the 1944 U.S.-Mexico Water Treaty, it has been determined that under most probable inflow conditions, water in excess of that required to supply uses in the United States will not be available. Vacant storage space in mainstem reservoirs is substantially greater than that required by flood control regulations. Therefore, a volume of 1,850 MCM (1.5 MAF) of water will be allowed to be scheduled for delivery to Mexico during calendar year 2001 in accordance with Article 15 of the 1944 U.S.-Mexico Water Treaty and Minute No. 242 of the International Boundary and Water Commission. Calendar year schedules of the monthly deliveries of Colorado River water are formulated by the Mexican Section of the IBWC and presented to the United States Section before the beginning of each calendar year.

DISCLAIMER

Nothing in this Annual Operating Plan is intended to interpret the provisions of *The Colorado River Compact* (45 Stat. 1057), *The Upper Colorado River Basin Compact* (63 Stat. 31), *The Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, Treaty Between the United States of America and Mexico* (Treaty Series 994, 59 Stat. 1219), the United States/Mexico agreement in Minute No. 242 of August 30, 1973, (Treaty Series 7708; 24 UST 1968), the Decree entered by the Supreme Court of the United States in *Arizona v. California* et al. (376 U.S. 340), as amended and supplemented, *The Boulder Canyon Project Act* (45 Stat. 1057), *The Boulder Canyon Project Adjustment Act* (54 Stat. 774; 43 U.S.C. 618a), *The Colorado River Storage Project Act* (70 Stat. 105; 43 U.S.C. 620), *The Colorado River Basin Project Act* (82 Stat. 885; 43 U.S.C. 1501), *The Colorado River Basin Salinity Control Act* (88 Stat. 266; 43 U.S.C. 1951), *The Hoover Power Plant Act of 1984* (98 Stat. 1333), *The Colorado River Floodway Protection Act* (100 Stat. 1129; 43 U.S.C. 1600), or *The Grand Canyon Protection Act of 1992* (Title XVIII of Public Law 102-575, 106 Stat. 4669).

Attachment. Monthly inflow, monthly release, and end of month contents for Colorado River reservoirs (October 1999 through September 2001) under the probable maximum, most probable, and the probable minimum inflow scenarios, and historic end of month contents.


Fontenelle
Monthly Inflow
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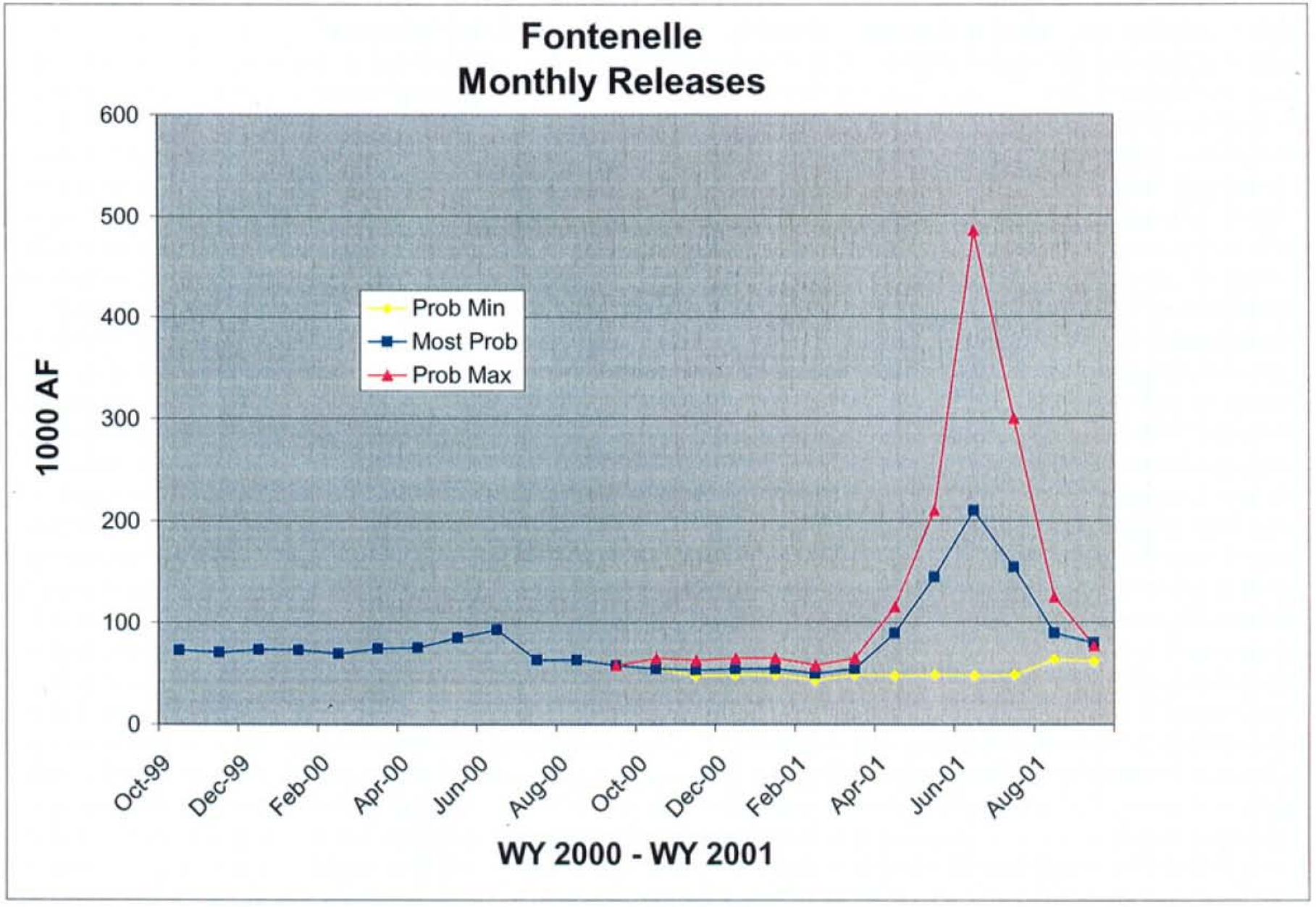
700
600
500
400
300
200
100
0
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001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Monthly Releases
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600
500
400
300
200
100
0
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
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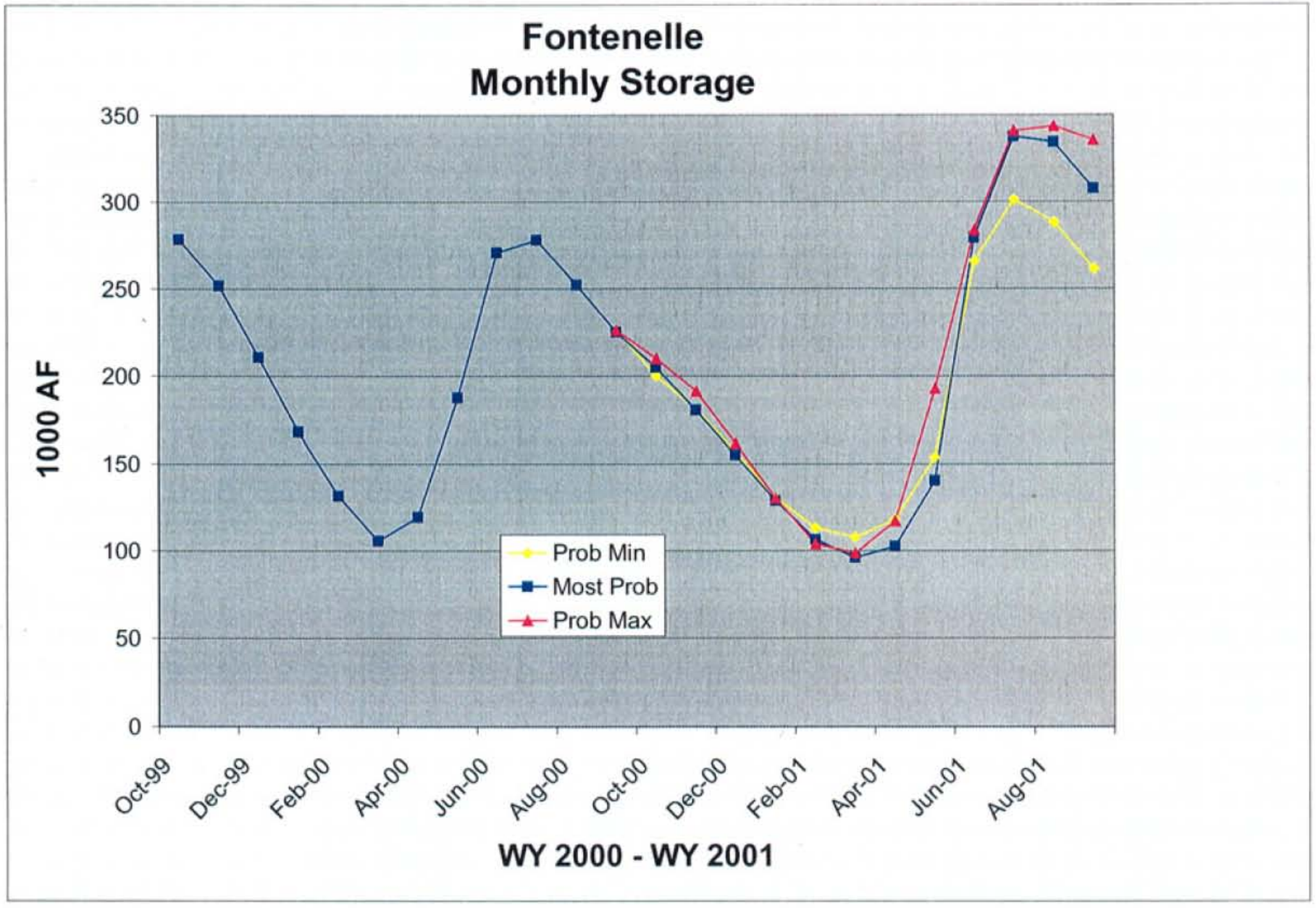
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001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Monthly Storage
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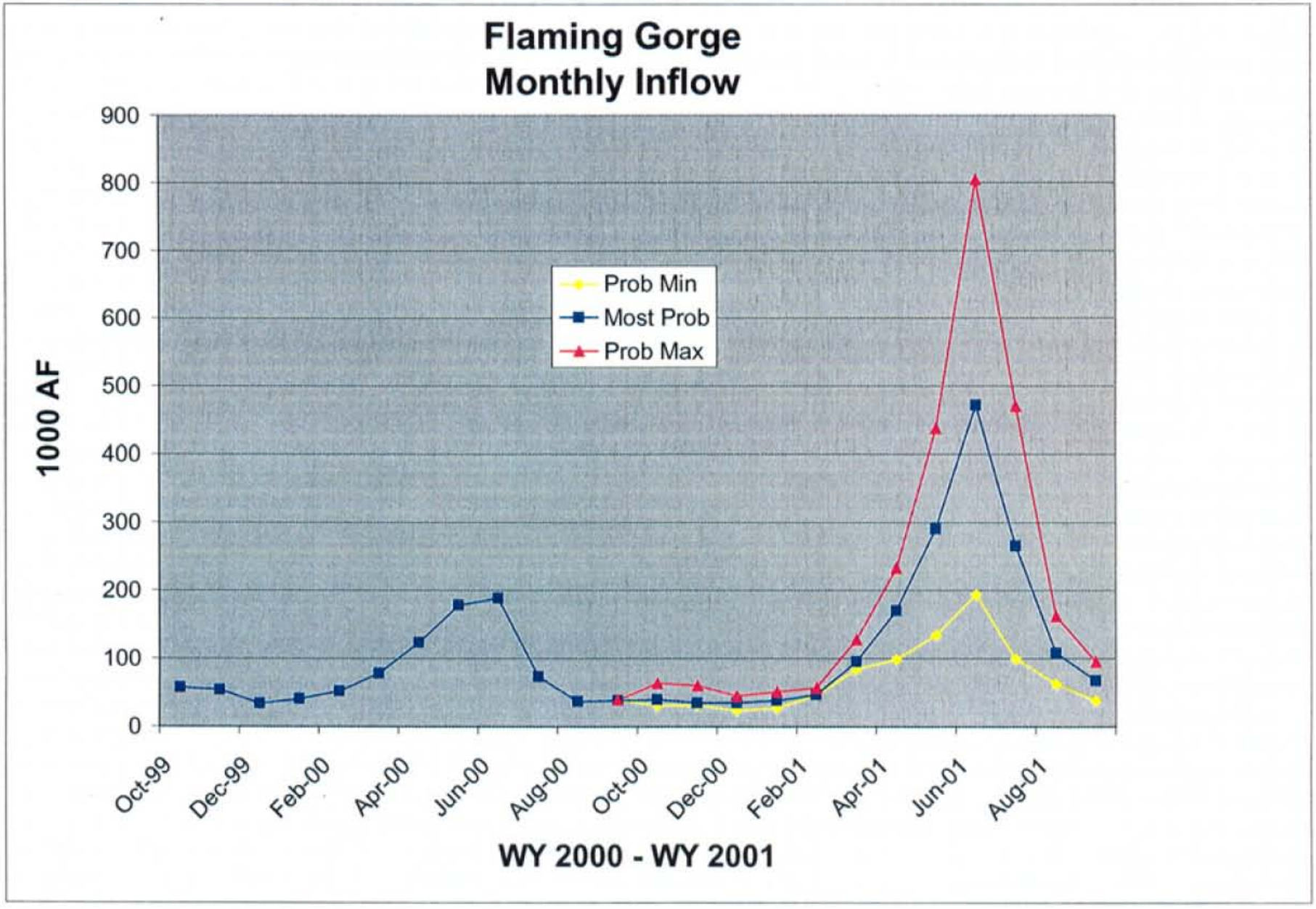
350
300
250
200
150
100
50
0
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
Prob Min
Most Prob
Prob Max
WY 2000 - WY 2001


Flaming Gorge
Monthly Inflow
1000 AF
900
800
700
600
500
400
300
200
100
0
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
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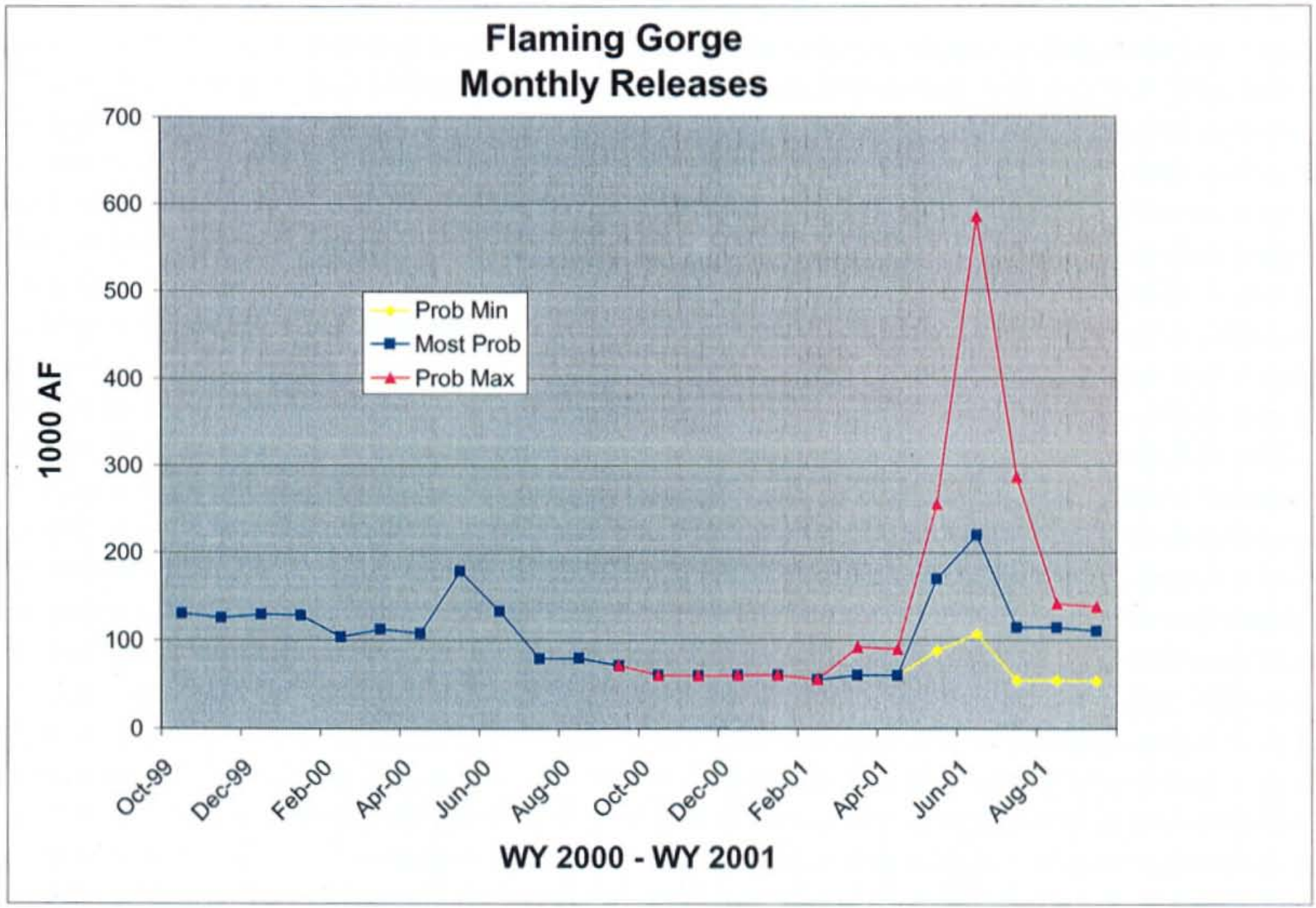
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001


Flaming Gorge
Monthly Releases
1000 AF
700
600
500
400
300
200
100
0
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
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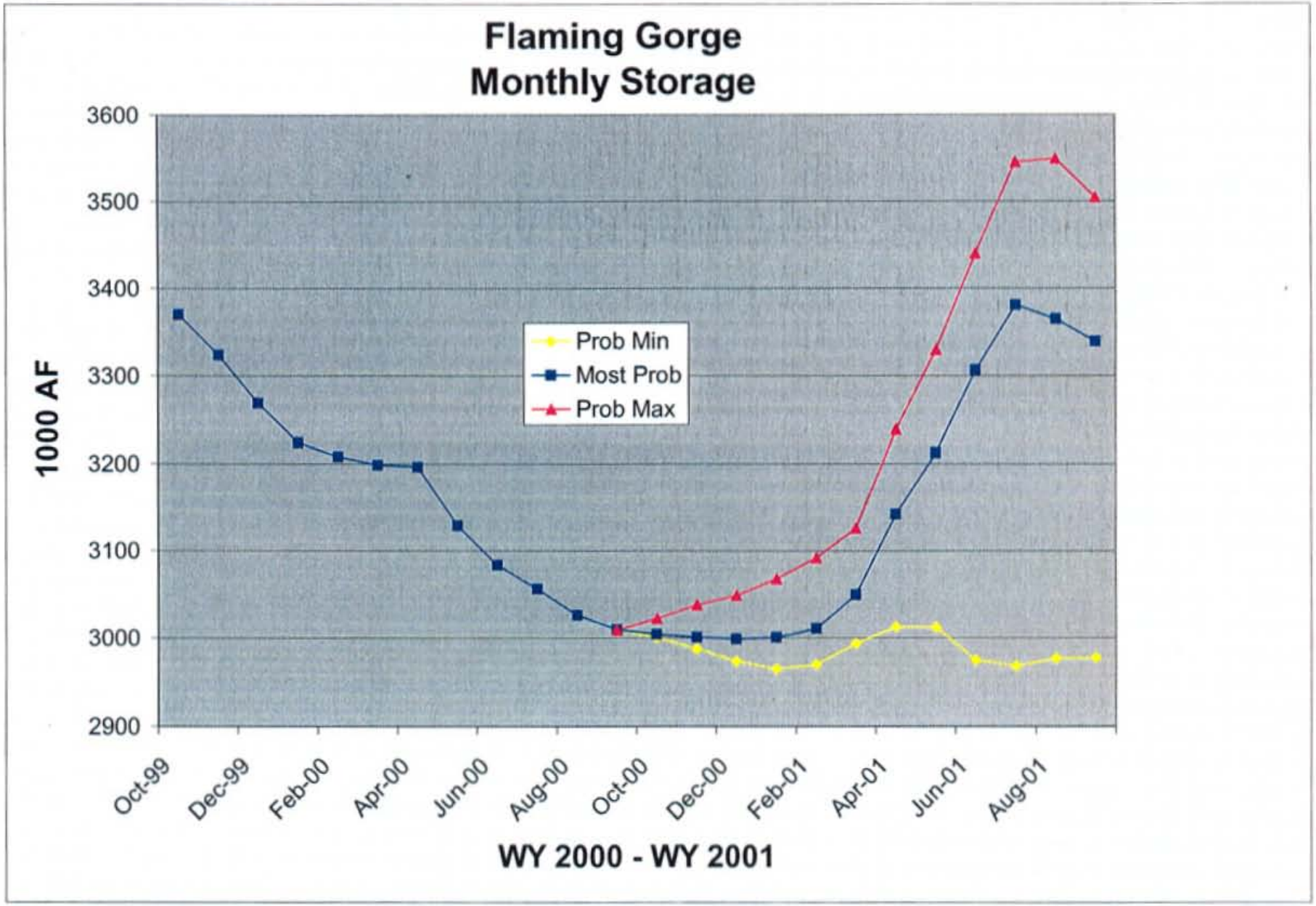
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001


Flaming Gorge
Monthly Storage
1000 AF
3600
3500
3400
3300
3200
3100
3000
2900
Prob Min
Most Prob
Prob Max
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Dec-99
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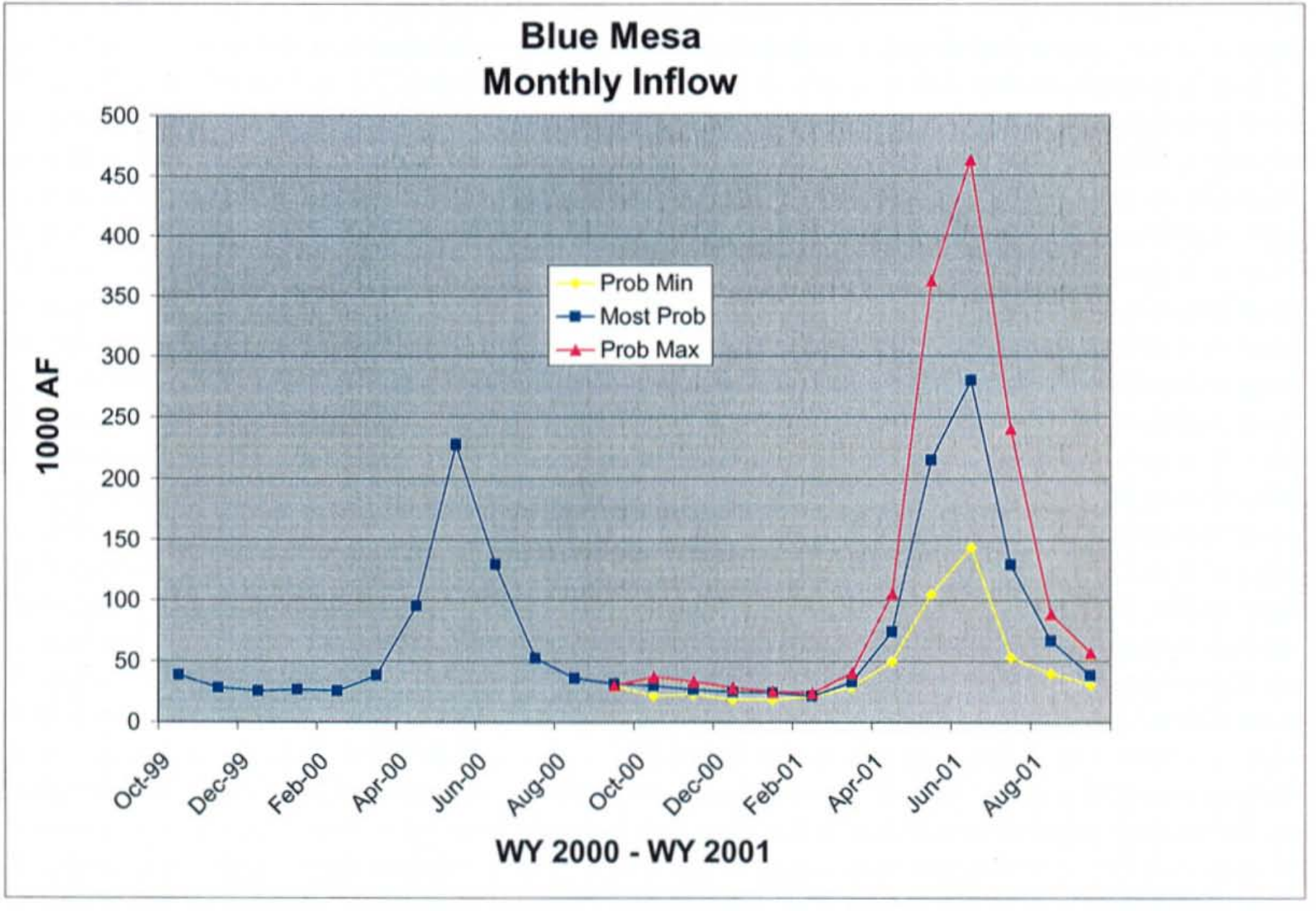
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001


Blue Mesa
Monthly Inflow
1000 AF
500
450
400
350
300
250
200
150
100
50
0
Prob Min
Most Prob
Prob Max
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Dec-99
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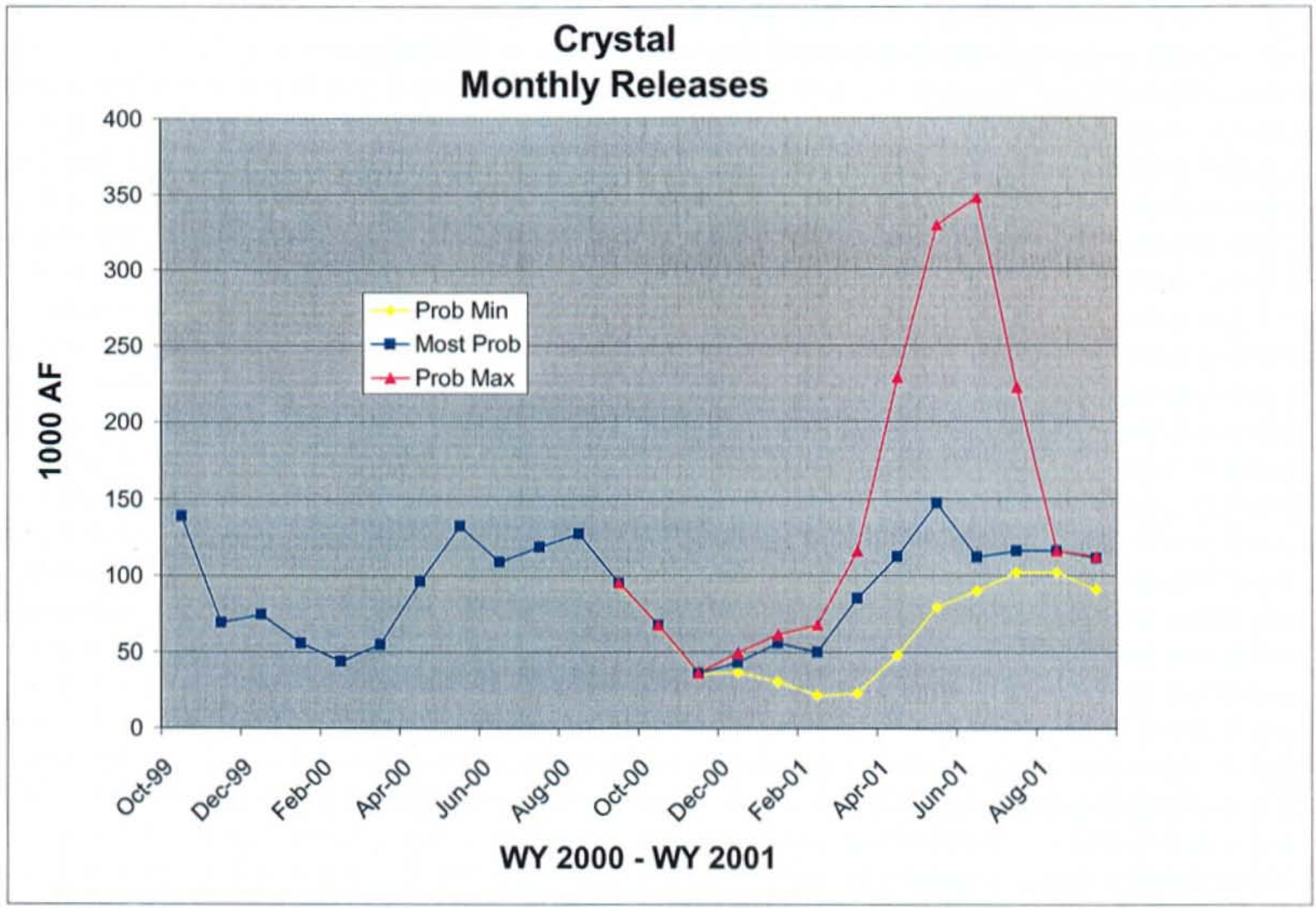
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001


Crystal
Monthly Releases
400
350
300
250
200
150
100
50
0
1000 AF
Prob Min
Most Prob
Prob Max
Oct-99
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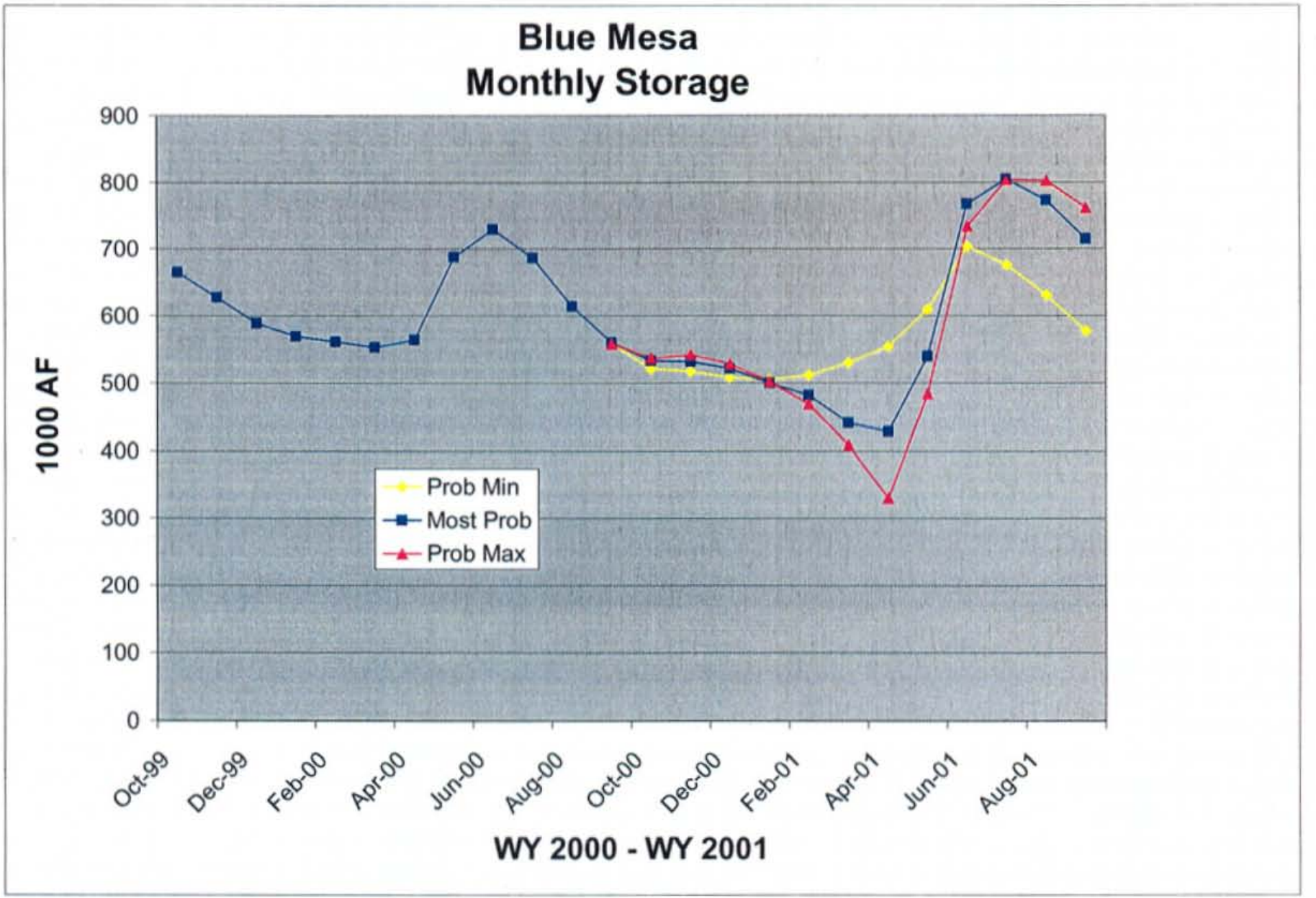
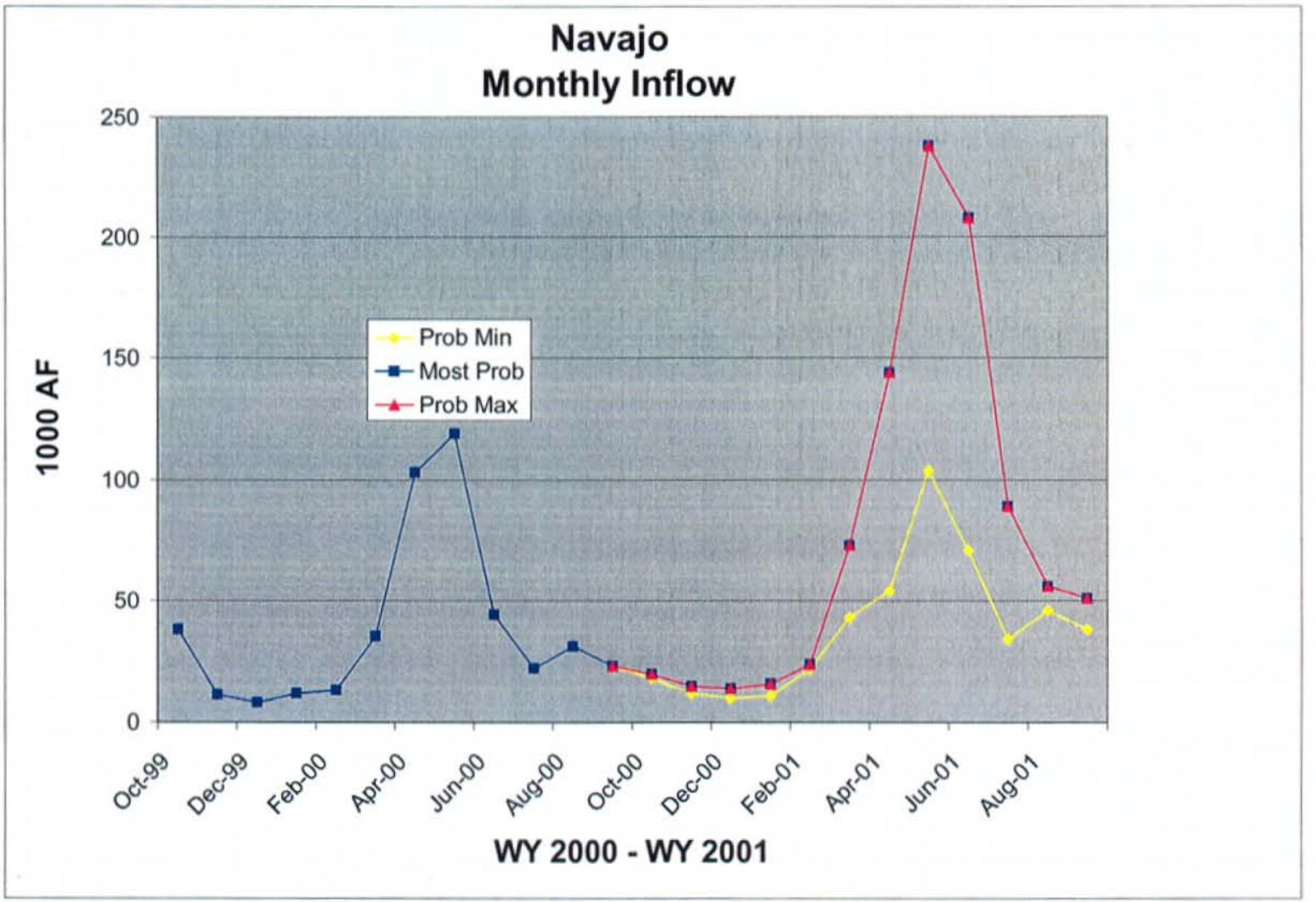
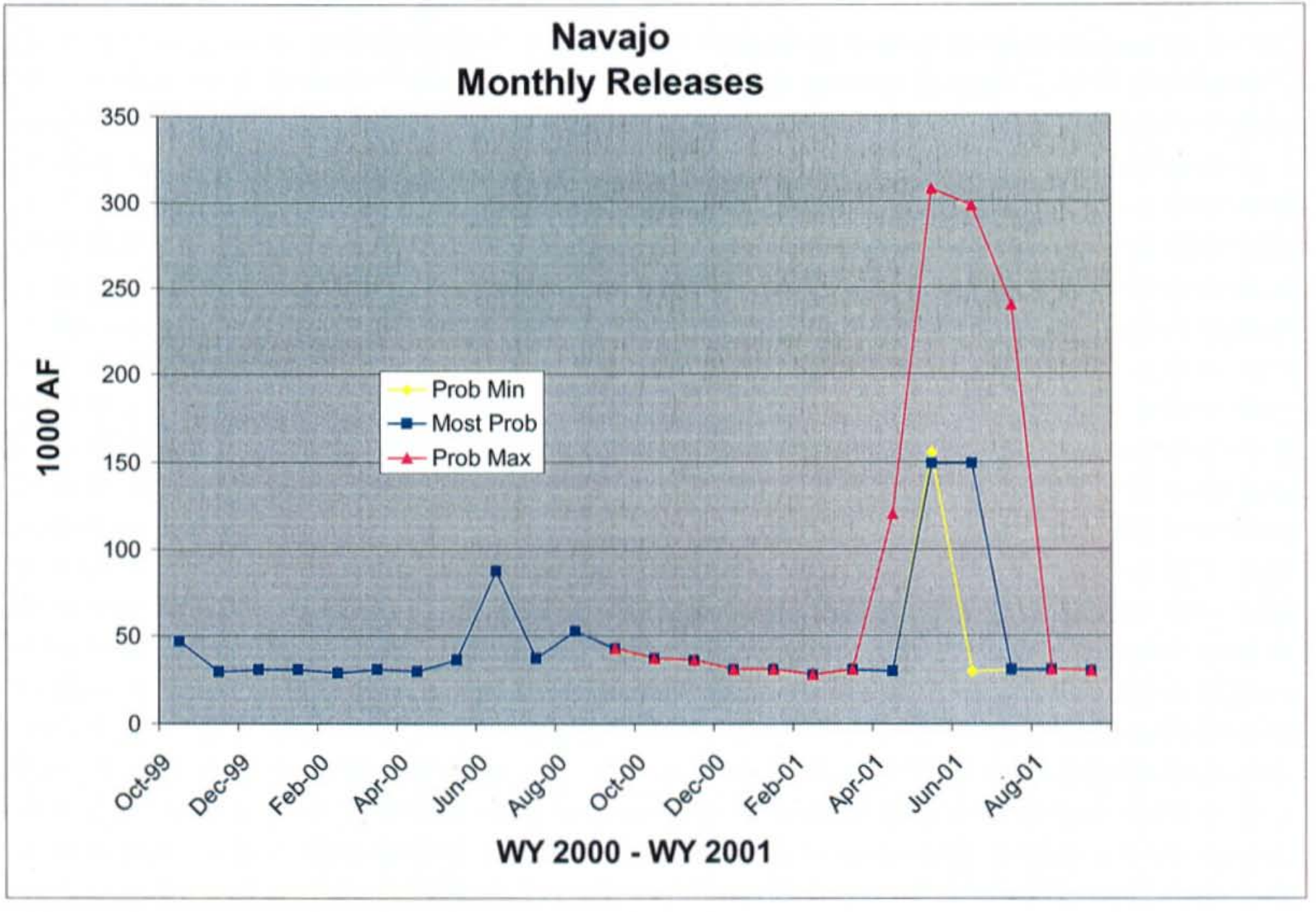
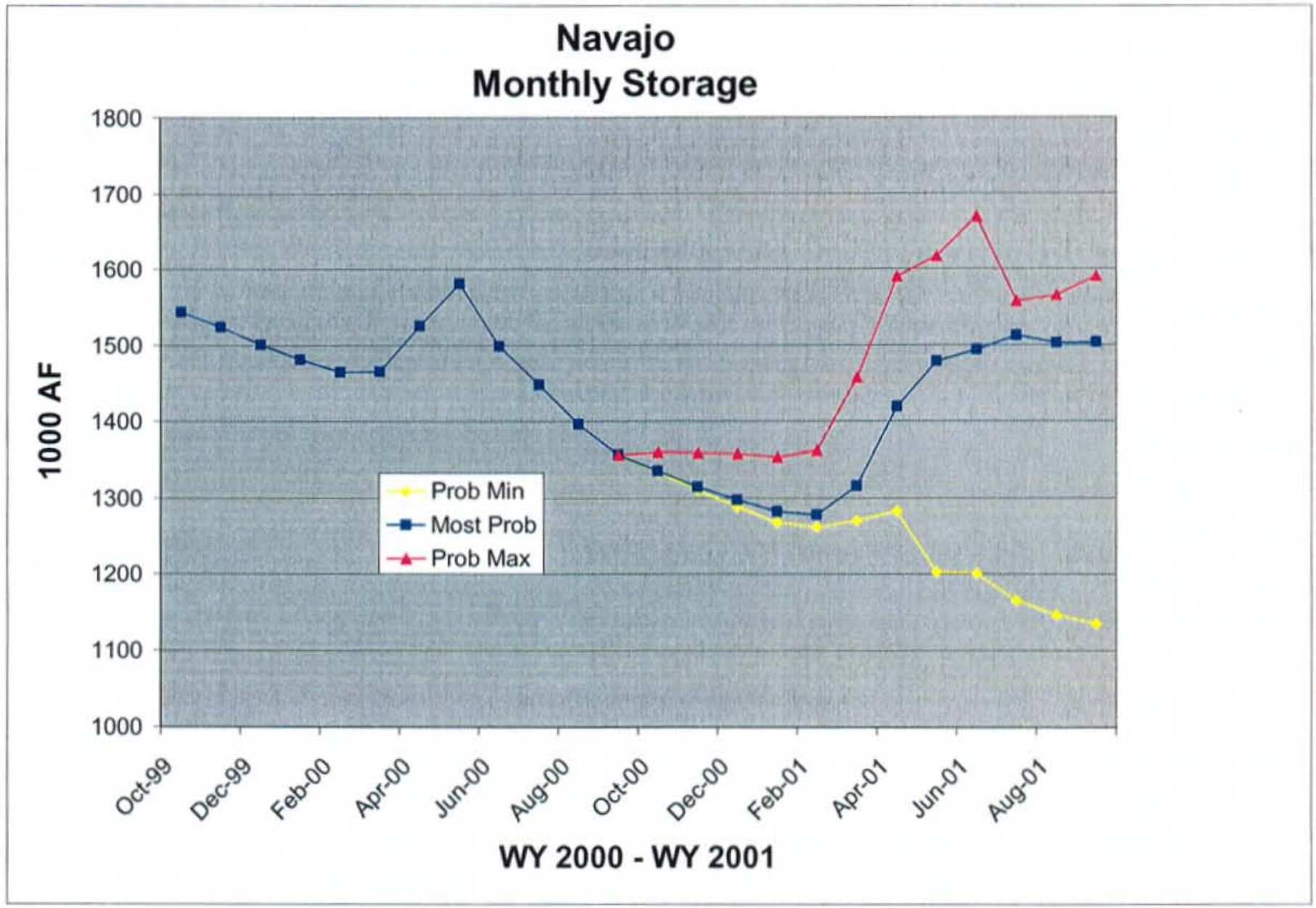
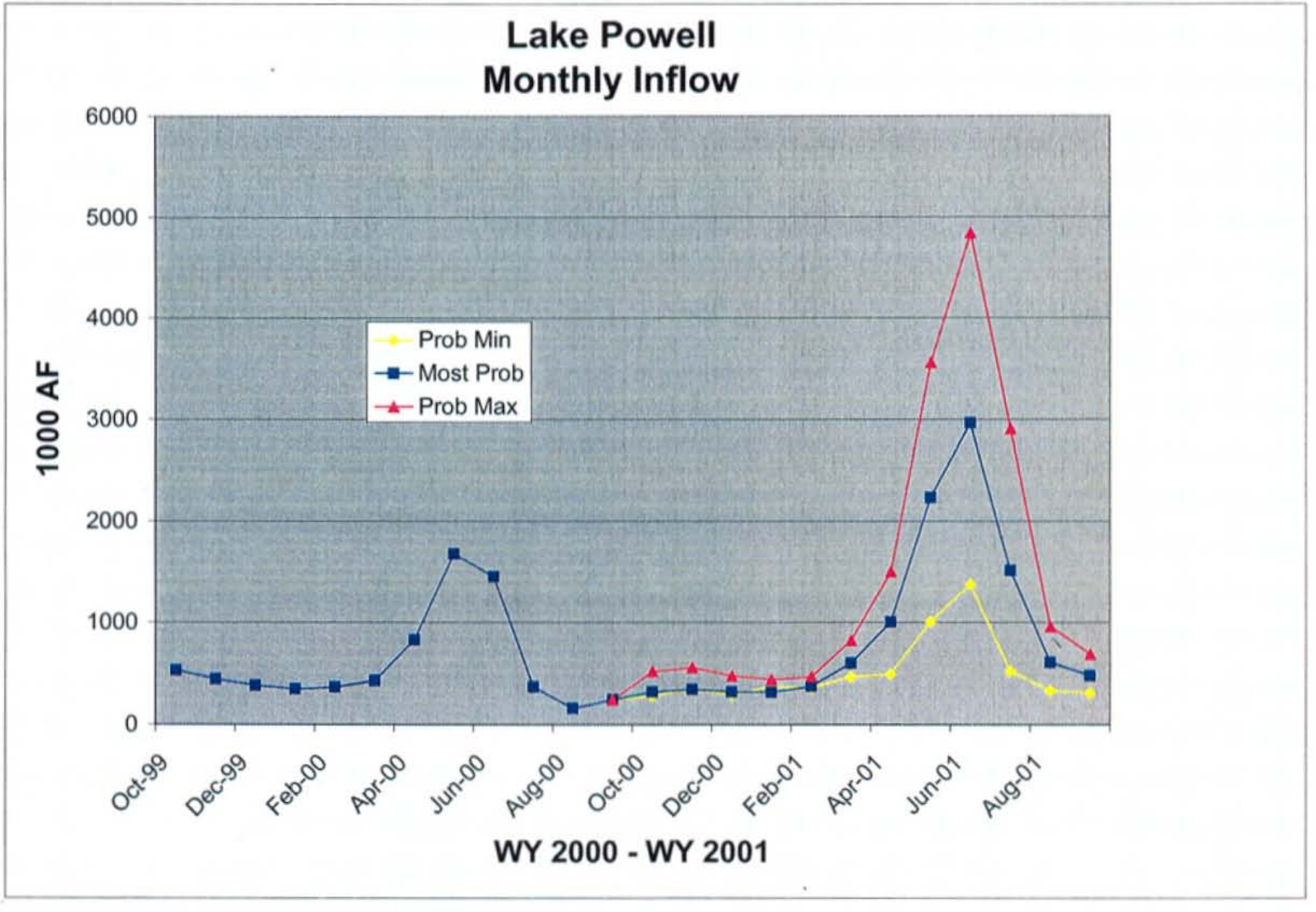
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001

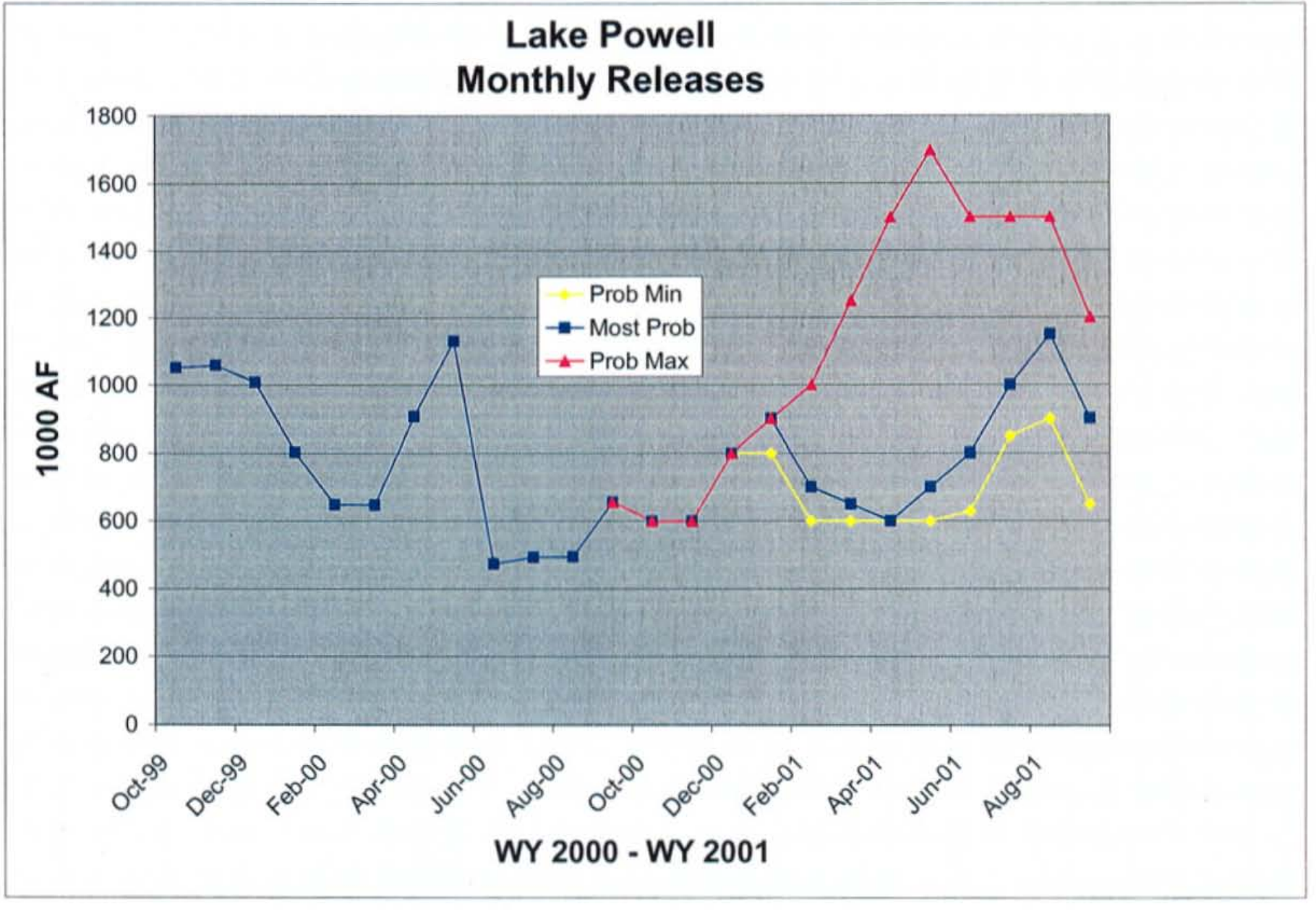

Blue Mesa
Monthly Storage
1000 AF
900
800
700
600
500
400
300
200
100
0
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001

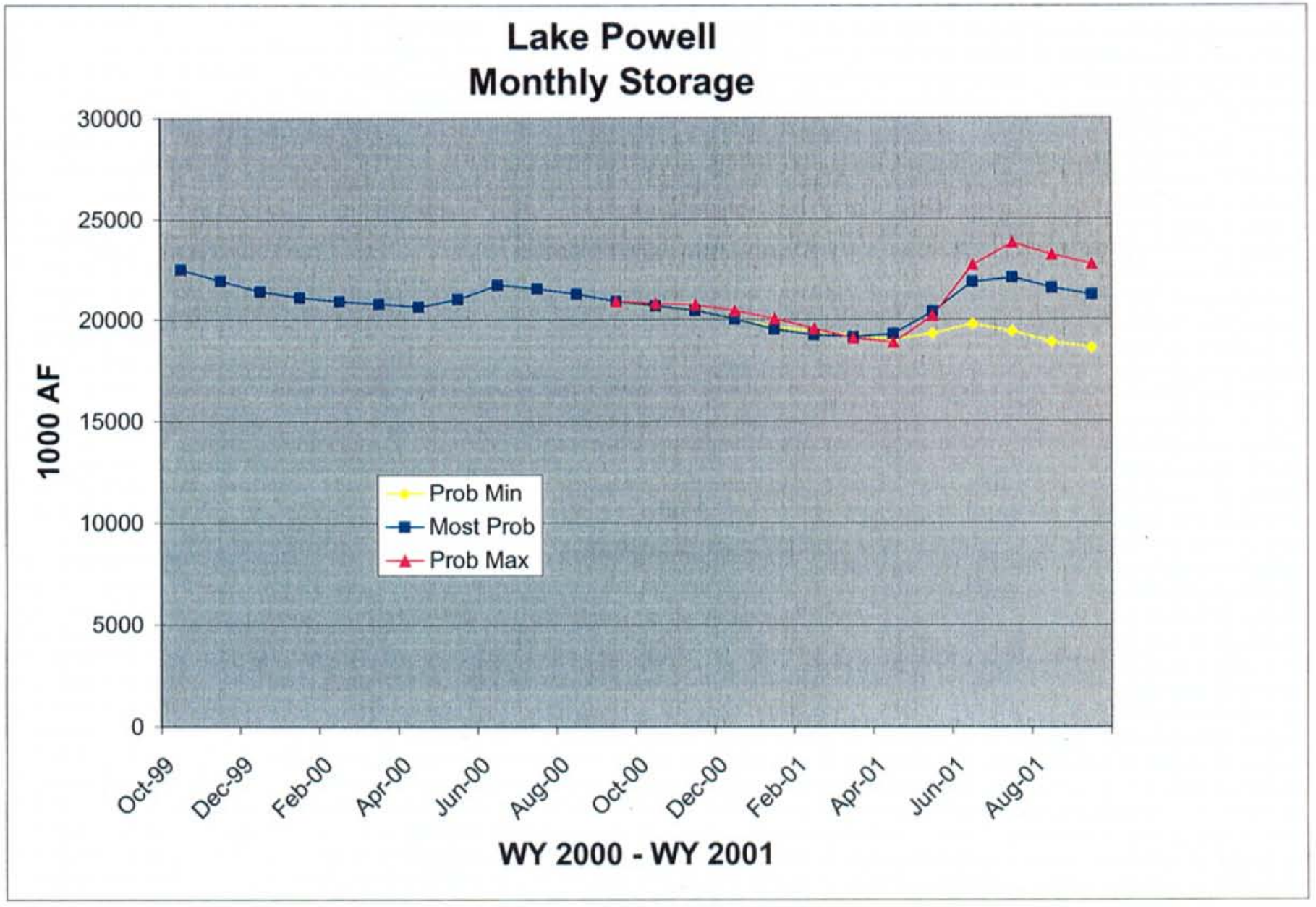

Navajo
Monthly Inflow
1000 AF
250
200
150
100
50
0
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001

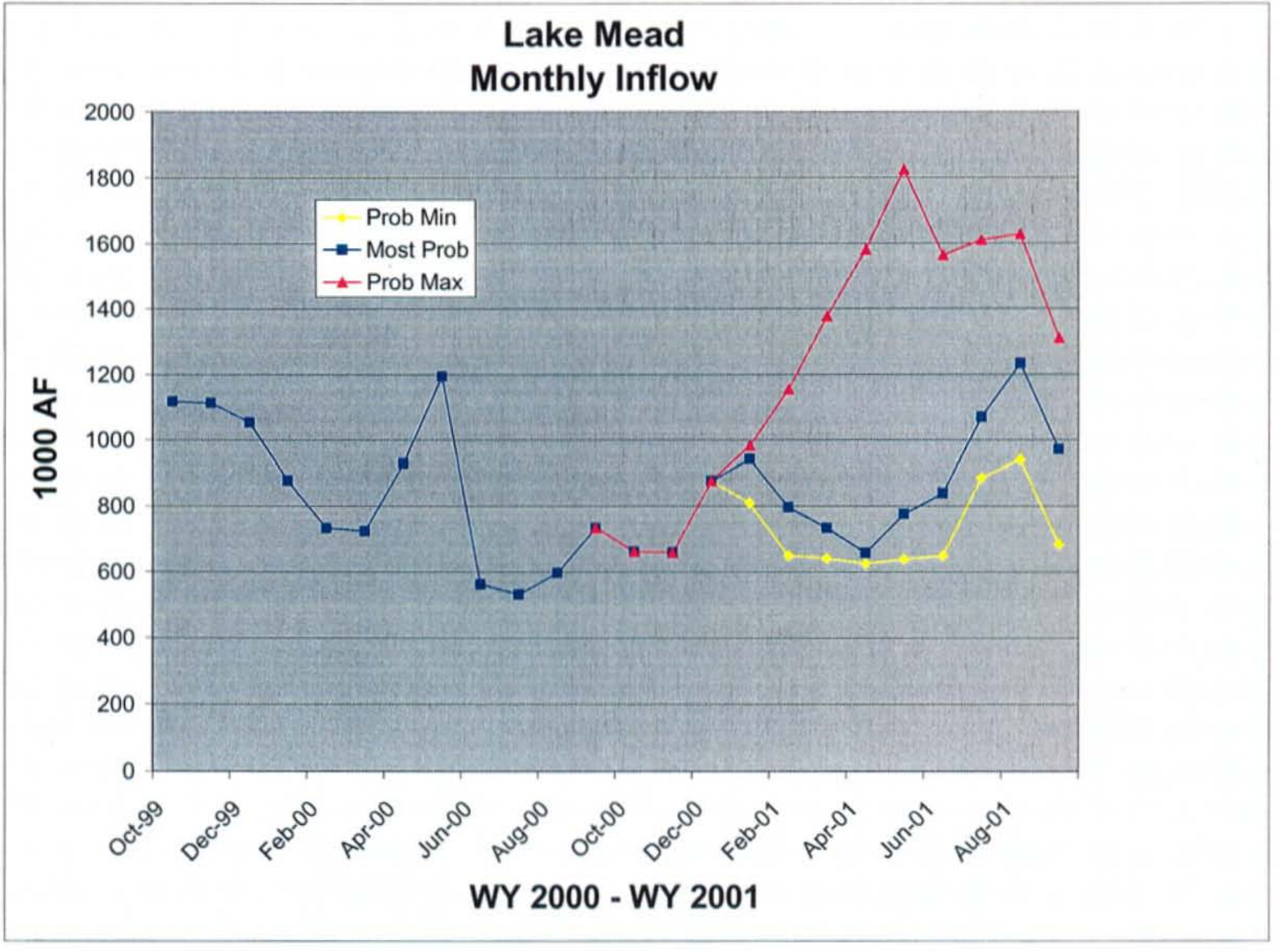

Navajo
Monthly Releases
1000 AF
350
300
250
200
150
100
50
0
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001

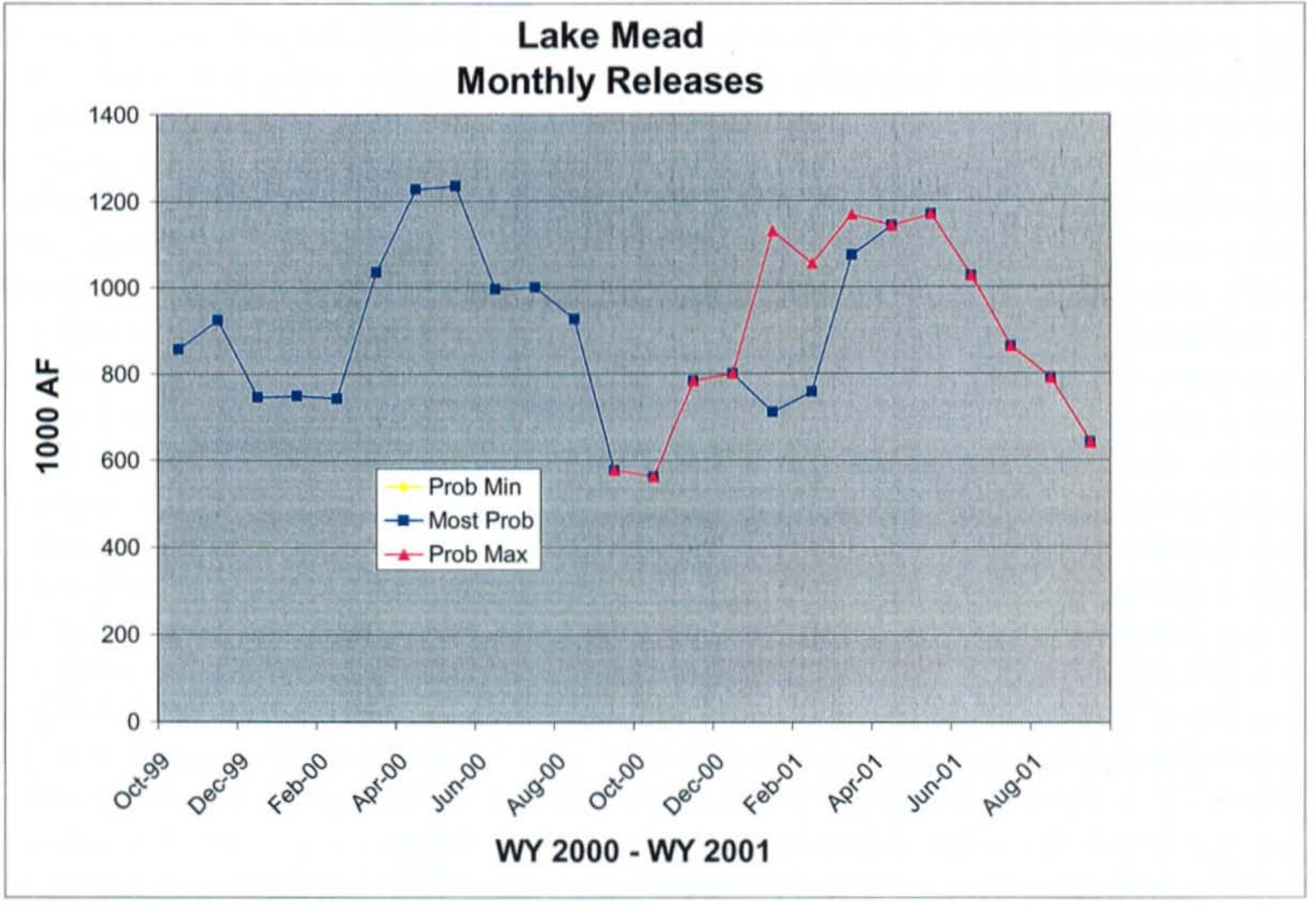

Navajo
Monthly Storage
1000 AF
1800
1700
1600
1500
1400
1300
1200
1100
1000
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001

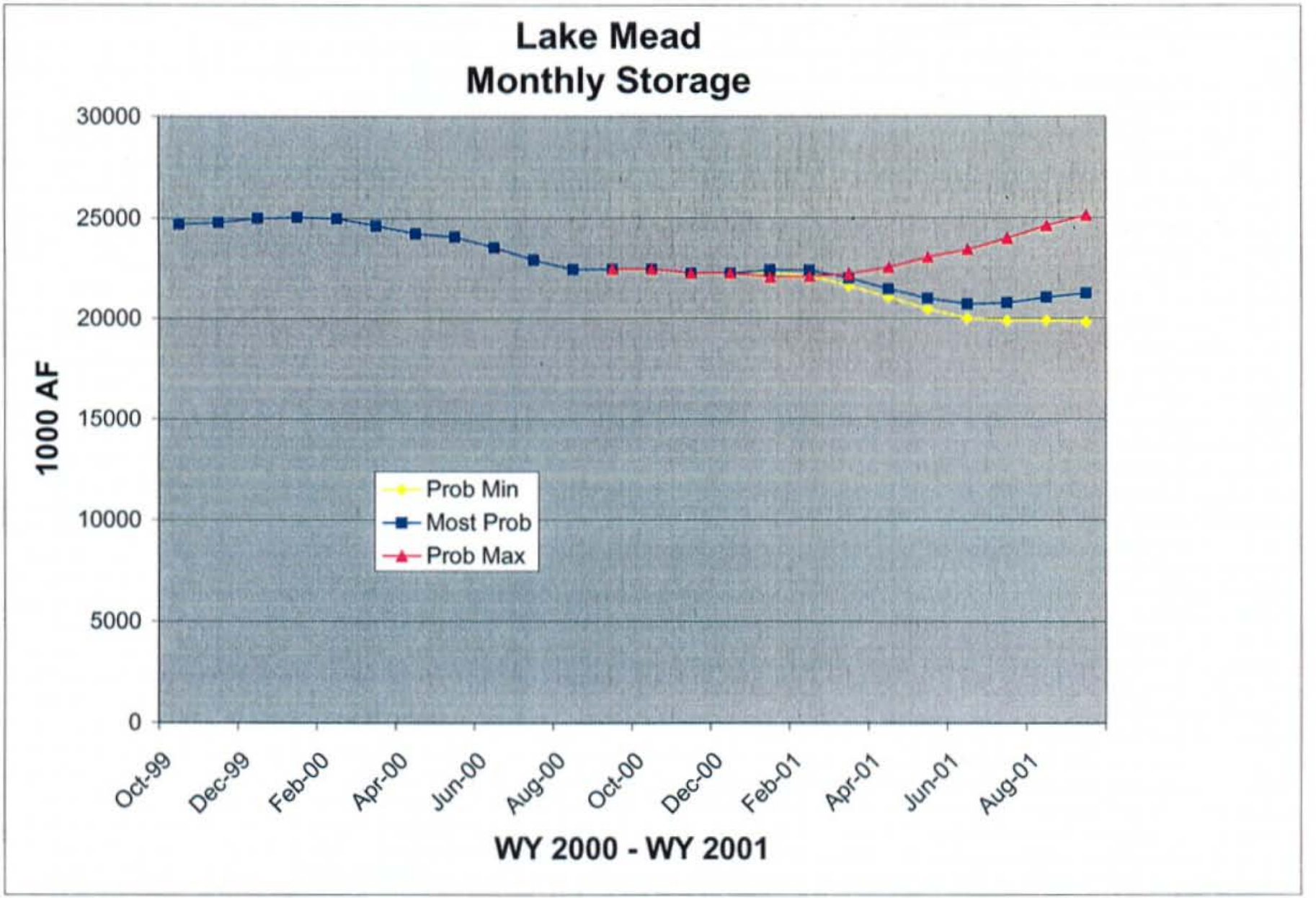

Lake Powell
Monthly Inflow
6000
5000
4000
3000
2000
1000
0
1000 AF
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001


Lake Powell
Monthly Releases
1800
1600
1400
1200
1000
800
600
400
200
0
1000 AF
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001

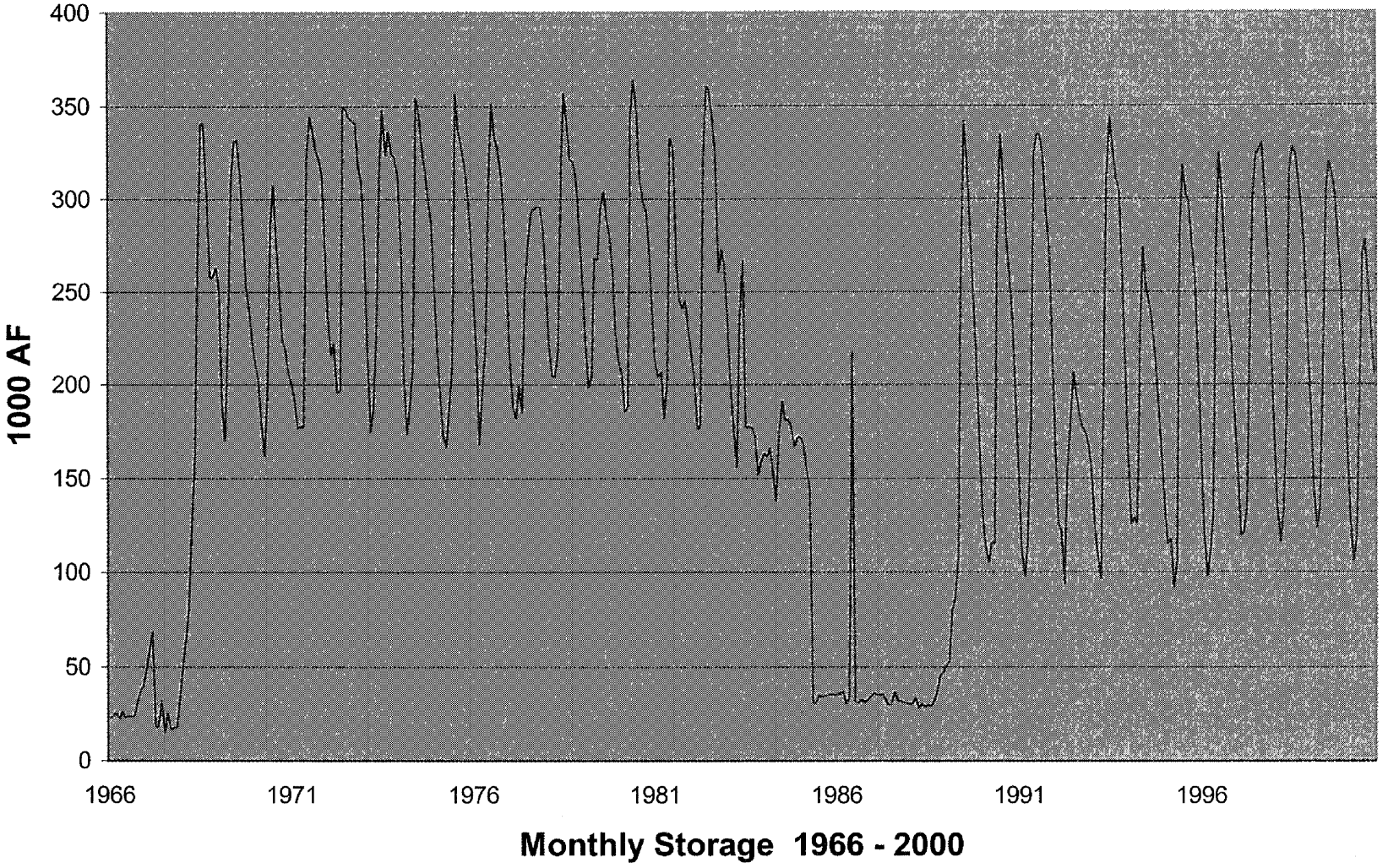

Lake Powell
Monthly Storage
30000
25000
20000
15000
10000
5000
0
1000 AF
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001


Lake Mead
Monthly Inflow
1000 AF
2000
1800
1600
1400
1200
1000
800
600
400
200
0
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001

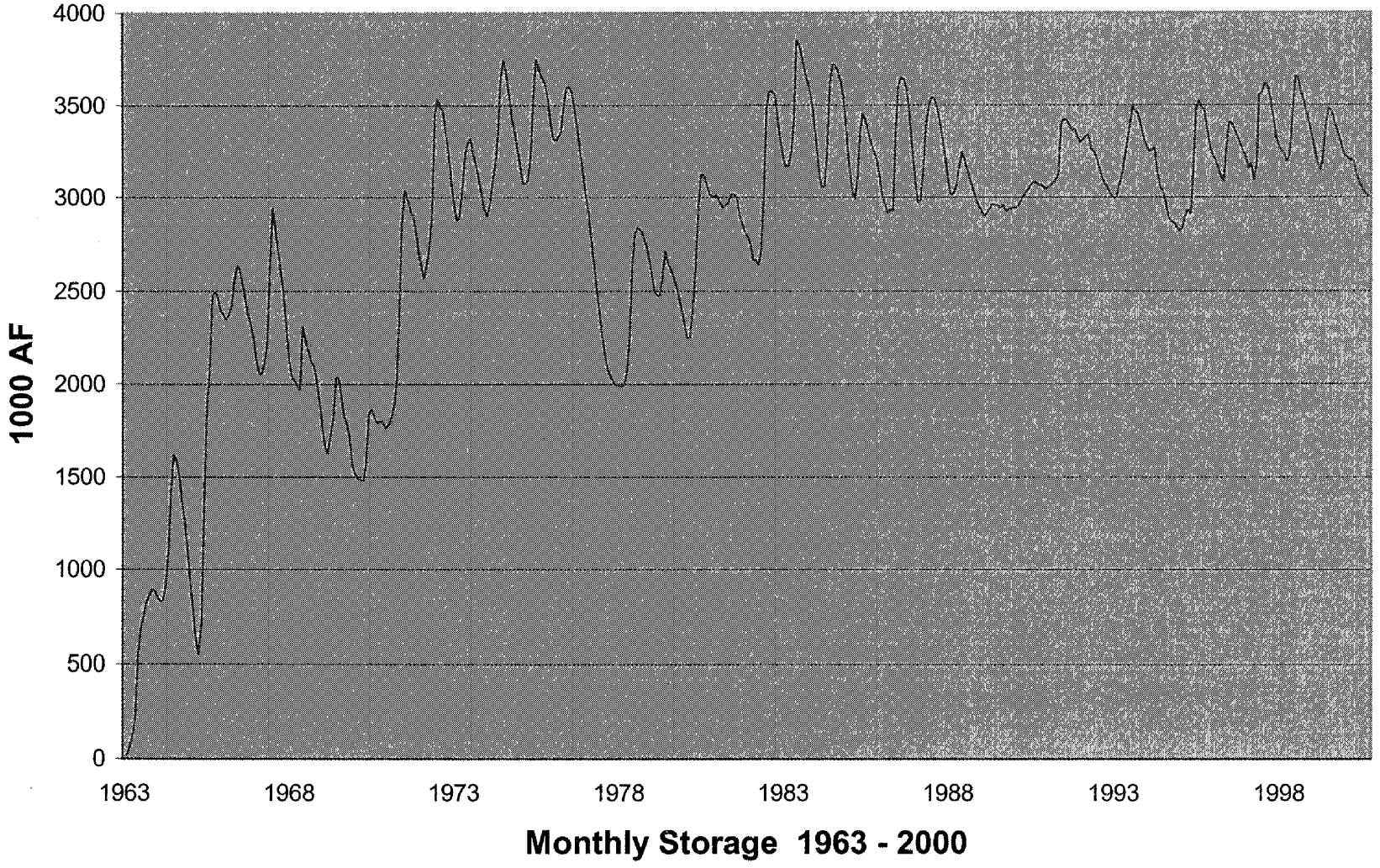

Lake Mead
Monthly Releases
1400
1200
1000
800
600
400
200
0
1000 AF
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001


Lake Mead
Monthly Storage
30000
25000
20000
15000
10000
5000
0
1000 AF
Prob Min
Most Prob
Prob Max
Oct-99
Dec-99
Feb-00
Apr-00
Jun-00
Aug-00
Oct-00
Dec-00
Feb-01
Apr-01
Jun-01
Aug-01
WY 2000 - WY 2001

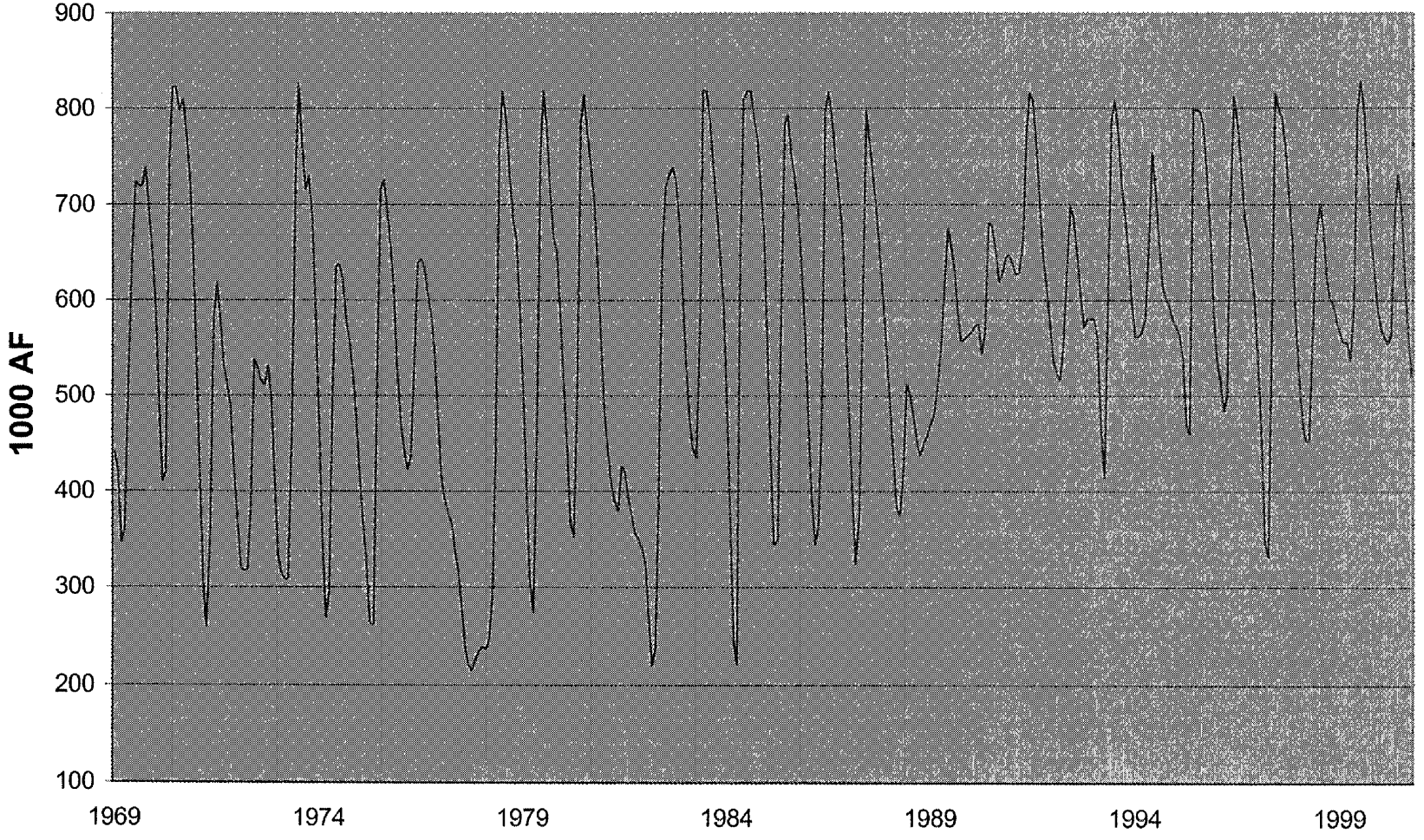
Fontenelle


400
350
300
250
200
150
100
50
0
1000 AF
1966
1971
1976
1981
1986
1991
1996
Monthly Storage 1966 - 2000

Flaming Gorge

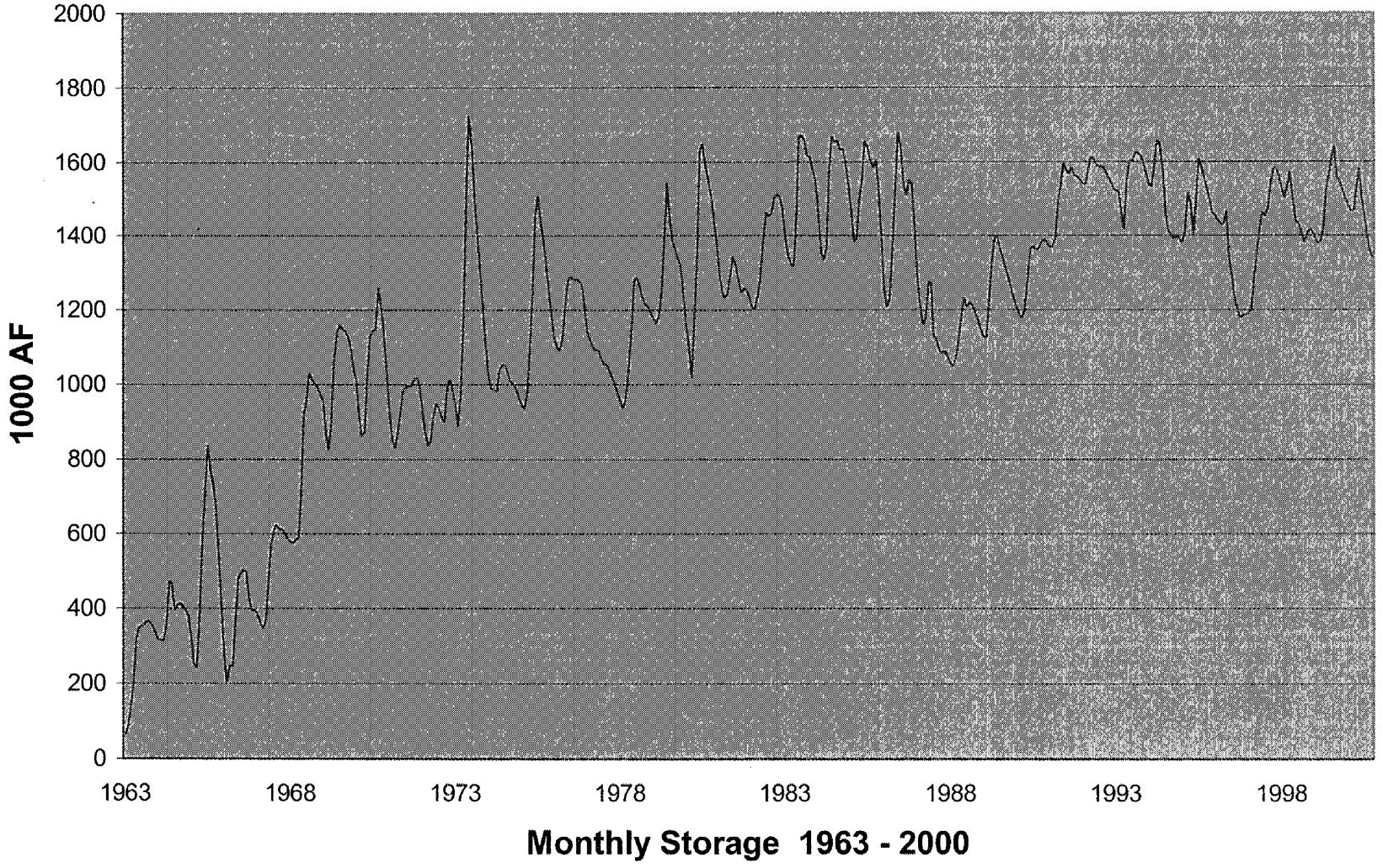


Blue Mesa

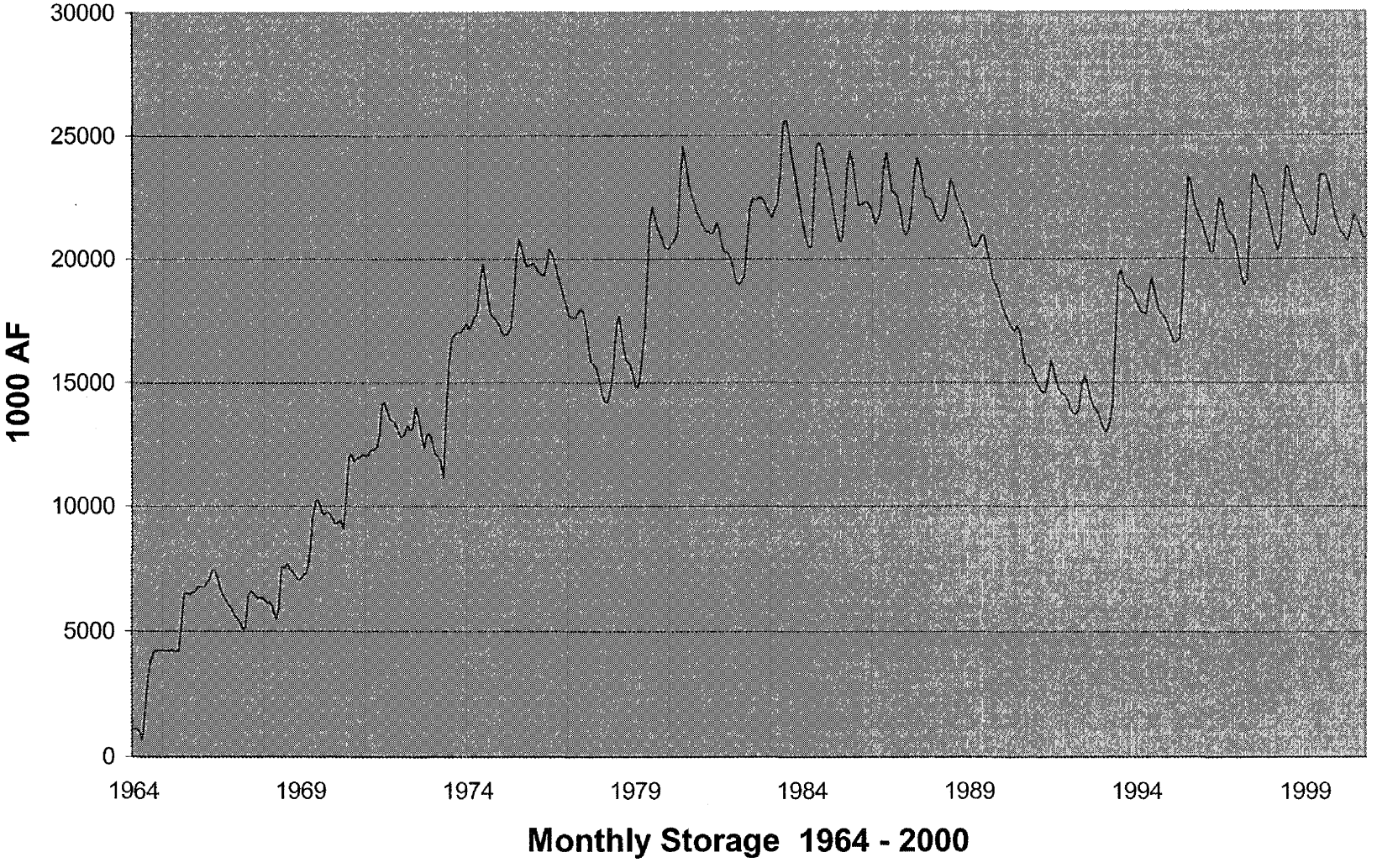


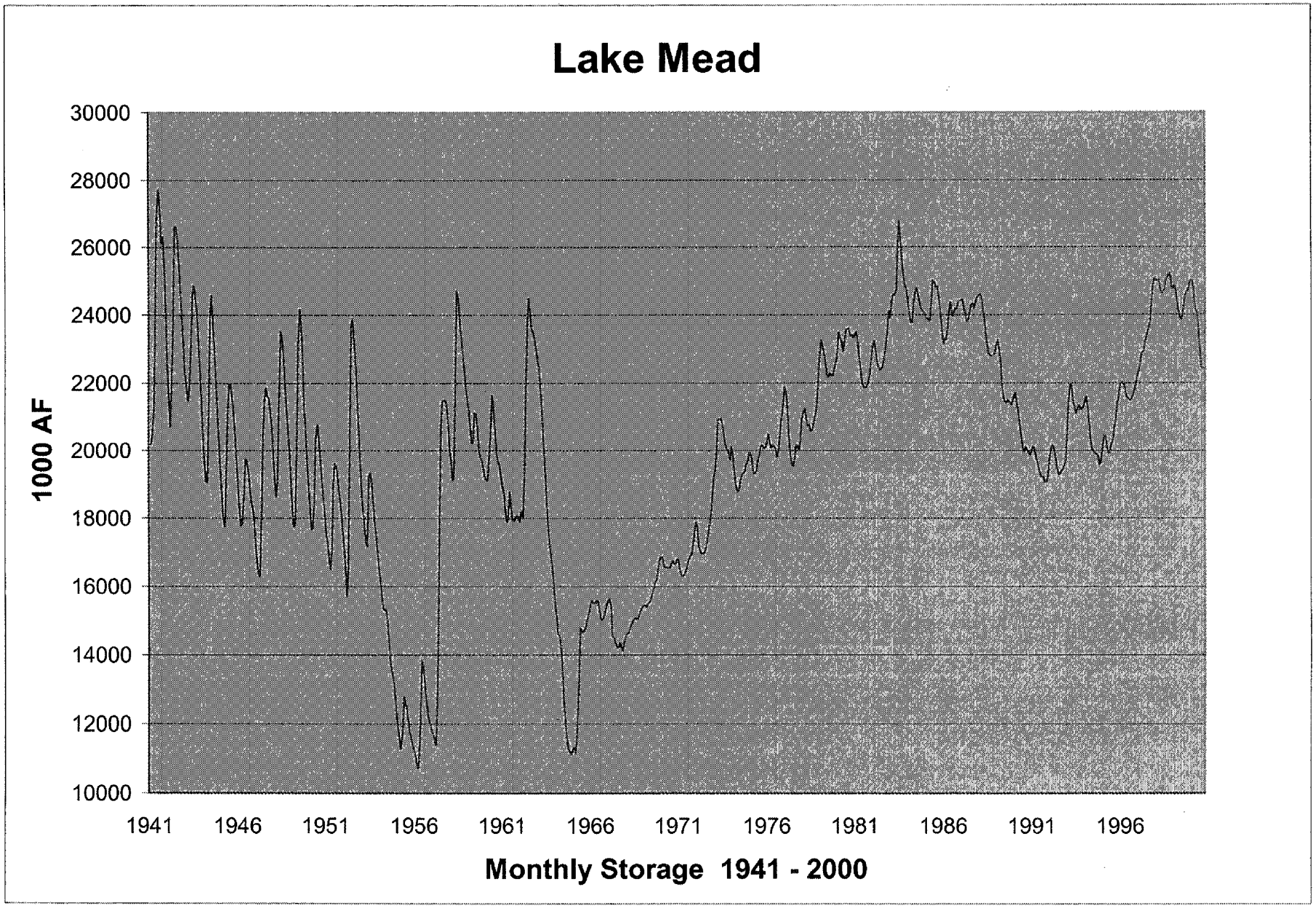
Monthly Storage 1969 - 2000

Navajo


2000
1800
1600
1400
1200
1000
800
600
400
200
0
1000 AF
1963
1968
1973
1978
1983
1988
1993
1998
Monthly Storage 1963 - 2000

Lake Powell


30000
25000
20000
15000
10000
5000
0
1000 AF
1964
1969
1974
1979
1984
1989
1994
1999
Monthly Storage 1964 - 2000


Lake Mead
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10000
1000 AF
1941
1946
1951
1956
1961
1966
1971
1976
1981
1986
1991
1996
Monthly Storage 1941 - 2000

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