COLORADO RIVER BOARD OF CALIFORNIA
770 FAIRMONT AVENUE, SUITE 100
GLENDALE, CA 91203-1068
(818) 500-1625
(818) 543-4685 FAX

April 4, 2011

NOTICE OF REGULAR MEETING OF THE COLORADO RIVER BOARD

NOTICE IS HEREBY GIVEN pursuant to the call of the Chairperson, Dana B. Fisher, Jr., by the undersigned, the Acting Executive Director of the Colorado River Board of California, that a regular meeting of the Board Members is to be held as follows:

Date:	April 13, 2011, Wednesday
Time:	10:00 a.m.
Place:	Vineyard Room Holiday Inn Ontario Airport 2155 East Convention Center Way Ontario, CA 91764-4452 TEL: (909) 212-8000, FAX: (909) 418-6703

The Colorado River Board of California welcomes any comments from members of the public pertaining to items included on this agenda and related topics. Oral comments can be provided at the beginning of each Board meeting; while written comments may be sent to Mr. Dana B. Fisher, Jr., Chairperson, Colorado River Board of California, 770 Fairmont Avenue, Suite 100, Glendale, California, 91203-1068.

An Executive Session may be held in accordance with provisions of Article 9 (commencing with Section 11120) of Chapter 1 of Part 1 of Division 3 of Title 2 of the Government Code and in accordance with Sections 12516 and 12519 of the Water Code to discuss matters concerning interstate claims to the use of Colorado River System waters in judicial proceedings, administrative proceedings, and/or negotiations with representatives from other states or the federal government.

Requests for additional information may be directed to: Christopher S. Harris, Acting Executive Director, Colorado River Board of California, 770 Fairmont Avenue, Suite 100, Glendale, CA 91203-1068, or 818-500-1625. A copy of this Notice and Agenda may be found on the Colorado River Board's web page at www.crb.ca.gov.

A copy of the meeting agenda, showing the matters to be considered and transacted, is attached.

Christopher S. Harris
Acting Executive Director

attachment: Agenda

Regular Meeting
COLORADO RIVER BOARD OF CALIFORNIA
April 13, 2011, Wednesday
10:00 a.m.

Vineyard Room
Holiday Inn Ontario Airport
2155 East Convention Center Way
Ontario, CA 91764-4452

A G E N D A

At the discretion of the Board, all items appearing on this agenda, whether or not expressly listed for action, may be deliberated upon and may be subject to action by the Board. Items may not necessarily be taken up in the order shown.

1. Call to Order

2. Opportunity for the Public to Address the Board (Limited to 5 minutes)
   As required by Government Code, Section 54954.3(a)

3. Administration
   a. Minutes of the Meeting Held March 9, 2011, Consideration and Approval **(Action)**

4. Agency Managers Meetings

5. Protection of Existing Rights
   a. Colorado River Water Report(s)
      Report from Board Staff on current reservoir storage, reservoir releases, projected water use, forecasted river flows, scheduled deliveries to Mexico, and salinity
   b. State and Local Water Reports
      Reports from Board members on current water supply and use conditions
   c. Colorado River Operations
      - Reclamation's News Release entitled "Reclamation Completes Successful Pilot Run of the Yuma Desalting Plant"
      - Peoria Times Editorial Article, "New Colorado River projection good news for CAP water supply"
      - Workshop on Remote Sensing Applications for U.S.-Mexico Border Water Management, June 8-9, 2011, San Diego, California
   d. Basin States Discussions
      - Status of the Colorado River Basin Water Study Report
   e. Colorado River Environmental Issues
      - Seven Basin States' Comments Letter on the Reclamation's Draft Environmental Assessment for "the Development and Implementation of a Protocol for High-Flow Experimental Releases from Glen Canyon Dam, Arizona, 2011 through 2020"

Agenda (continued)

6. Executive Session
   An Executive Session may be held by the Board pursuant to provisions of Article 9 (commencing with Section 11120) of Chapter 1 of Part 1 of Division 3 of Title 2 of the Government Code and Sections 12516 and 12519 of the Water Code to discuss matters concerning interstate claims to the use of Colorado River system waters in judicial proceedings, administrative proceedings, and/or negotiations with representatives from other states or the federal government.

7. Other Business
   a. Next Board Meeting: Regular Meeting
      June 15, 2011, Wednesday, starting 10:00 a.m.
      Holiday Inn Ontario Airport
      2155 East Convention Center Way
      Ontario, CA 91764-4452
      TEL: (909) 212-8000, FAX: (909) 418-6703

3. a – Approval March 9, 2011 Board Meeting Minutes

Minutes of Regular Meeting
COLORADO RIVER BOARD OF CALIFORNIA
Wednesday, March 9, 2011

A Regular Meeting of the Colorado River Board of California (Board) was held in the Vineyard Room, of Holiday Inn Ontario Airport, 2155 East Convention Center Way, Ontario, California, 91764-4452, Wednesday, March 9, 2011.

Board Members and Alternates Present

Dana Bart Fisher, Jr, Chairman
Franz W. De Klotz
Thomas M. Erb
John V. Foley
W.D. □Bill□Knutson
Henry Merle Kuiper
John Pierre Menvielle
Jeanine Jones, Designee
Department of Water Resources
Christopher G. Hayes, Designee
Department of Fish and Game

Board Members Absent

Terese Marie Ghio
James B. McDaniel

Others Present

Steven B. Abbott
James H. Bond
John Penn Carter
Dave Fogerson
Leslie M. Gallagher
Mark L. Johnson
Michael L. King
William J. Hasencamp
Thomas E. Levy
Jan P. Matusak
Carrie Oliphant
Halla Razak
Steven B. Robbins
Jack Seiler
Marv Shaw
Tina L. Shields
Ed W. Smith
Catherine M. Stites
Mark Stuart
Bill D. Wright
Abbas Amirteymoori
J.C. Jay Chen
Christopher S. Harris
Lindia Y. Liu
Gary E. Tavetian
Mark Van Vlack
Gerald R. Zimmerman

CALL TO ORDER

Chairman Fisher announced the presence of a quorum, and called the meeting to order at 10:03 am.

OPPORTUNITY FOR THE PUBLIC TO ADDRESS THE BOARD

Chairman Fisher asked if there was anyone in the audience who wanted to address the Board on items on the agenda or matters related to the Board.

Mr. Menvielle announced that on March 15th the Imperial Irrigation District will be dedicating the Midway-Bannister Transmission Project (Project). The dedication is to be held at the East Highline Canal on East Simpson Road commencing at 10 a.m. The Project, the first of its kind, will allow the transmission of alternative energy developed from geothermal and solar energy projects outside of the Imperial Valley. Additional transmission projects are expected. Mr. Menvielle announced he had a couple of invitations and offered them to the Board.

Chairman Fisher asked if there was any other items to be brought before the Board. Hearing none, Chairman Fisher moved the meeting to the next agenda item.

ADMINISTRATION

Approval of Minutes

Chairman Fisher asked if there was a motion to approve the February 9th meeting minutes. Mr. Menvielle moved the February 9th minutes be approved and seconded by Mr. Foley. Unanimously carried, the Board approved the February 9th meeting minutes.

New Alternate Board Member Representing Coachella Valley Water District

Chairman Fisher announced that the Coachella Valley Water District (CVWD) had appointed Mr. Franz W. De Klotz as the new alternate member representing CVWD to the Board. Chairman Fisher reported that Mr. DeKlotz had been sworn in before the meeting and now was officially serving on the Colorado River Board. The Board welcomed Mr. DeKlotz to his new position.

Annual Statement of Economic Interests Form 700

Acting Executive Director Christopher Harris reported that the annual filing of Form 700 is due from each of the Board members by April 1st. The forms need to be submitted to the California Fair Political Practices Commission.

AGENCY MANAGERS MEETING

Mr. Harris reported that the Agency managers haven t met since November 2010.

PROTECTION OF EXISTING RIGHTS

Colorado River Water Report

Mr. Harris reported that precipitation from October 1st to February 28th was 123 percent of normal, and the snowpack water equivalent was about 121 percent of normal, with little change from last month snowpack equivalent of 123 percent of normal. The April through July runoff is expected to be 9.0 maf or 113 percent of normal. The anticipated 2011 water year runoff is 12.574 maf or about 104 percent of normal. Mr. Harris reported that for the month of February much of the valley regions in both the Upper and Lower Basins were well above normal, some areas over a 150 percent of normal. However, the higher elevation, such as the San Juan□s, where typically most of the precipitation occurs falls have been well below normal. This contrast in precipitation patterns seems somewhat typical in a La Ni□a type water year. There is the possibility that additional precipitation and snowpack may pick up in the higher elevation later in the spring.

Mr. Harris reported that as of March 1st, the storage in Lake Powell was 13.2 million acre-feet (maf), or 54 percent of capacity. The water surface elevation was 3,615.0 feet. The storage in Lake Mead was 11.1 maf, or 43 percent of capacity, and water surface elevation was 1,095.8 feet. Total System storage was about 31.866 maf, or 53 percent of capacity. Last year at this time, there was 32.125 maf in storage, also 54 percent of capacity.

Mr. Harris added that Reclamation□s projected consumptive use (CU) for the State of Nevada is 280,000 acre-feet; and for Arizona, the CU is projected to be 2.808 maf; and for California, the CU is projected to be 4.092 maf. The total projected CU in the Lower Basin is expected to be about 7.180 maf.

State and Local Water Reports

Mr. Mark Stuart, of the California Department of Water Resources, reported on the current climate conditions in California. At the Los Angeles Civic Center, January precipitation totals were above the season total for a normal year. If the rest of the year holds as normal, about 20 inches of precipitation would be expected in the Los Angeles area. Statewide the average precipitation is about 125 percent of normal, runoff is about 100 percent of normal and reservoir storage is about 110 percent of normal for this time of year. The precipitation during the months of October and November were greater than normal and December was nearly twice the average. However, January was one of the driest on record with February at about average. The Sacramento River Index Precipitation as of March 1st was 42.3 inches where the average as of March 1st is 34.7 inches and with several months left in the season, additional precipitation is expected. Distribution of snow and precipitation for California in the northern region was about 115 percent of average and was even greater in the central and southern regions.

Mr. Stuart reported that the State Water Project (SWP) has somewhat recovered from the past dry years. The current storage conditions, as of March 1, 2011, north of the Delta was at 2.794 maf or 76 percent of capacity. South of the Delta the SWP storage was 1.679 maf or 92 percent of capacity, where the total SWP storage was 4.474 maf, or 81 percent of capacity. The projected SWP deliveries were 60 percent of Table A entitlements.

Mr. Foley, of The Metropolitan Water District of Southern California (MWD), reported that there was good news. MWD's Diamond Valley Lake has significantly recovered from loss in storage over the last few years and is expected to fill in the next couple of months. As of March 1st, the combined reservoirs storage of Lakes Skinner, Mathews, and Diamond Valley, was about 888,700 acre-feet, or about 86 percent of capacity. Diamond Valley Lake was about 695,900 acre-feet, or about 86 percent of capacity. Lake Mathews was about 153,700 acre-feet, or at 84 percent of capacity. Lake Skinner is about 39,100 acre-feet, or 89 percent of capacity. Mr. Foley reported that the Colorado River Aqueduct was closed for about 19 days for maintenance. The Diamond Valley Lake has been filled with SWP water through the Inland Feeder, at a rate of about 600 cubic feet per second. If this rate is continued, the Diamond Valley Lake is expected to fill in the next couple of months.

Mr. Erb, of the City of Los Angeles Department of Water and Power (LADWP), reported that the Mammoth Snowcourse in the Eastern Sierra was about 52 inches where the season normal is 43 inches. Mr. Erb added that the water demand in Los Angeles has been maintaining at about twenty percent less than a few years ago.

Colorado River Operations

Metropolitan Water District's Report on the Southern Nevada Water Authority's Interstate Account-Final Accounting Through Calendar Year 2010

Mr. Harris reported pursuant to MWD's Storage and Interstate Release Agreement (SIRA), MWD reported its final verified accounting for the Southern Nevada Water Authority's (SNWA) Interstate Account administered by MWD. The balance beginning in 2010 was 70,000 acre-feet. No additional water supplies were diverted or stored in the account. There were no withdrawals from the account. The ending 2010 balance remains at 70,000 acre-feet.

Bureau of Land Management Looks Anew at Oil-Shale Development Rules and Plans

Mr. Harris reported that on February 15th, the Bureau of Land Management (BLM) announced through a news release that the BLM will be reevaluating its rules and planning processes associated with commercial development of oil shale resources in the western U.S. The Department of the Interior and the BLM intend to ensure that these rules reflect the current state of knowledge and latest technologies. The BLM has also implemented a Research, Demonstration and Development program to promote the development of new oil shale extraction and processing technologies. The BLM anticipates utilizing a public scoping process to evaluate the existing and proposed rules, regulations and planning requirements.

Basin States Discussion

Colorado river Basin Water Study Report

Mr. Harris reported that last month he reported on the status of the Colorado River Basin Water Study Report. The technical reports A- "Scenario Development", B- "Water Supply Assessment", and D- "System Reliability Metrics", have been released as preliminary drafts. Comments have been submitted and are under review by the project team. Preliminary draft technical report C- "Water Demand Assessment" has not yet been released. Mr. Amirteymoori added that there would be conference call next week with the Steering Committee to discuss technical report C.

Colorado River Environmental Activities

Department of the Interior News Release, "Glen Canyon Dam High-Flow Experiments Provide Insights for Future Flow Management of the Colorado River"

Mr. Harris reported that based upon an analysis by the U.S. Geological Survey of three previous High-Flow Experimental (HFE) releases from Glen Canyon Dam, scientists have determined: 1) Spring HFE release benefits trout, and negatively impacts the endangered Humback chub; 2) The HFE releases are effective at depositing sand on sandbars and beaches, but only if there is sufficient sediment supplies in the mainstream channel below Glen Canyon Dam; 3) The Paria River flooding (primarily in summer months) is the primary source of new sand/sediment inputs into the System; and 4) Future timing and scheduling of HFE release events will consider potential impact to biological resources as well as condition of the mainstream sand/sediment budget.

Mr. Harris reported that Reclamation (Upper Colorado Regional Office) announced that the comment deadline has been extended for the Draft Environmental Assessments – "Protocol for High-Flow Experimental Releases from Glen Canyon Dam, from 2011 through 2020", and "Non-Native Fish Control Downstream form Glen Canyon Dam". Comments on both Draft Environmental Assessments are now due in Reclamation's Upper Colorado Regional Office by March 18th. Mr. Harris reported that the Basin Sates are currently working on a Seven Basin States joint comment letter for submittal. The comment letter includes: 1) Ensuring that the HFE Protocol is consistent with the 2007 Interim Guidelines; 2) Ensuring the National Environmental Policy Act assessment rigorously analyzes impacts to Humpback chub; 3) Evaluating potential inclusion of a Rainbow trout "trigger" as an indicator of status of Humpback chub populations; and 4) Addressing whether these Draft Environmental Assessments should be withdrawn and re-issued as a more comprehensive Environmental Impact Statement.

Mr. Harris asked if there was a motion for the Chairman to sign the Basin States comment letter. Upon the motion of Mr. Menvielle, seconded by Mr. Knutson, and unanimously carried, the Board authorized Chairman Fisher to sign the Basin States comment letter on the two Draft Environmental Assessments.

OTHER BUSINESS

Passing of Mr. Larry Anderson

Mr. Harris reported that long time former Director of the Utah Division of Water Resources, Mr. Larry Anderson, had recently passed away. Many on the Board remembered Mr. Anderson. Some had worked with him on many issues on the Colorado River for over twenty years. Mr. Anderson was remembered as a true gentleman and very knowledgeable in Colorado River issues, he will be missed.

Status Search for Executive Director of Colorado River Board

There was discussion on the status of the search for the next Executive Director of the Colorado River Board. There were few candidates and most of them had little experience with the Colorado River. The deadline was extended till April 25th.

Next Board Meeting

Chairman Fisher announced that the next meeting of the Colorado River Board will be held on Wednesday, April 13, 2011, at 10:00 a.m., at the Holiday Inn Ontario Airport, 2155 East Convention Center Way, Ontario, California.

There being no further items to be brought before the Board, Chairman Fisher asked for a motion to adjourn the meeting. Upon the motion of Mr. Foley, seconded by Mr. Knutson, and unanimously carried, the meeting was adjourned 10:40 a.m. on March 9, 2011.

Christopher S. Harris
Acting Executive Director

5. a – Colorado Rive Water Reports

SUMMARY WATER REPORT
COLORADO RIVER BASIN
April 4, 2011

RESERVOIR STORAGE (as of April 3)	MAF	ELEV. IN FEET	% of Capacity	February 28, 2011 MAF	ELEV. IN FEET	% of Capacity
Lake Powell	12.749	3,610.2	**52**	13.235	3,615.0	**54**
Flaming Gorge	3.171	6,025.3	**85**	3.104	6,023.5	**83**
Navajo	1.328	6,058.4	**78**	1.328	6,058.4	**78**
Lake Mead	11.193	1,096.6	**43**	11.117	1,095.8	**43**
Lake Mohave	1.691	642.7	**93**	1.699	643.1	**94**
Lake Havasu	0.576	447.8	**93**	0.567	447.3	**91**
Total System Storage	31.467		**53**	31.866		**53**
System Storage Last Year	32.660		**55**	32.125		**54**

		February 28, 2011
WY 2011 Precipitation (Basin Weighted Avg) 10/01/10 through 4/04/11	**118 percent (22.6")**	**123 percent (18.9")**
WY 2011 Snowpack Water Equivalent (Basin Weighted Avg) on day of 4/04/11 (Above two values based on average of data from 116 sites.)	**115 percent (20.2")**	**121 percent (17.1")**

April 1, 2011 Forecast of Unregulated Lake Powell Inflow	MAF	% of Normal	February 15, 2011 MAF	% of Avg.
2011 April through July unregulated inflow	9.500	**120 %**	9.000	**113%**
2011 Water Year forecast	13.076	**109 %**	12.574	**104%**

USBR Forecasted Year-End 2011 and 2010 Consum. Use, April 5, 2011 a. **MAF**

			2011 Diversion	- Return =	Net	2010
Nevada (Estimated Total)			0.488	0.219	0.269	0.243
Arizona (Total)			3.651	0.877	2.774	2.792
CAP Total					1.555	1.653
Az. Water Banking Authority					*0.134*	*0.134*
OTHERS					1.218	1.140
California (Total) b./			4.733	0.630	4.103	4.363
MWD					0.566	1.099
3.85 Agriculture	Total	Conserved			Forecasted	Estimated
IID c./	3.137	-0.360			2.777	2.547
CVWD d./	0.389	-0.031			0.358	0.304
PVID	0.332	0			0.332	0.274
YPRD	0.046	0			0.046	0.039
Island e./	0.007	0			0.007	0.006
Total Ag.	*3.911*	*-0.391*			*3.520*	*3.170*
Others					0.017	0.094
PVID-MWD fallowing to storage (to be determined)					--	0
Arizona, California, and Nevada Total f./			**8.872**	**1.726**	**7.146**	**7.399**

a./ Incorporates Jan.-Feb. USGS monthly data and 75 daily reporting stations which may be revised after provisiona data reports are distributed by USGS. Use to date estimated for users reporting monthly and annually.

b./ California 2011 basic use apportionment of 4.4 MAF has been adjusted to 4.174 MAFfor payback of Inadvertent Overrun and Payback Policy overruns (-1,213 AF), Intentionally Created Surplus Water by IID (-25,000 AF), Creation of Extraordinary Conservation ICS MWD (-200,000 AF)

c./ 0.105 MAF conserved by IID-MWD Agreement as amended in 2007: 105,000 AF conserved for SDCWA under the IID-SDCWA Transfer Agreement as amended, 80,000 AF of which is being diverted by MWD; 16,000 AF required to conserved for CVWD under the IID-CVWD Acquisition Agreement, 67,700 AF conserved by the All-American Canal Lining Project.

d./ 30,850 acre-feet conserved by the Coachella Canal Lining Project.

e./ Includes estimated amount of 6,530 acre-feet of disputed uses by Yuma Island pumpers and 0 acre-feet by Yuma Project Ranch 5 being charged by USBR to Priority 2.

f./ Includes unmeasured returns based on estimated consumptive use/diversion ratios by user from studies provided by Arizona Dept. of Water Resources, Colorado River Board of California, and Reclamation.

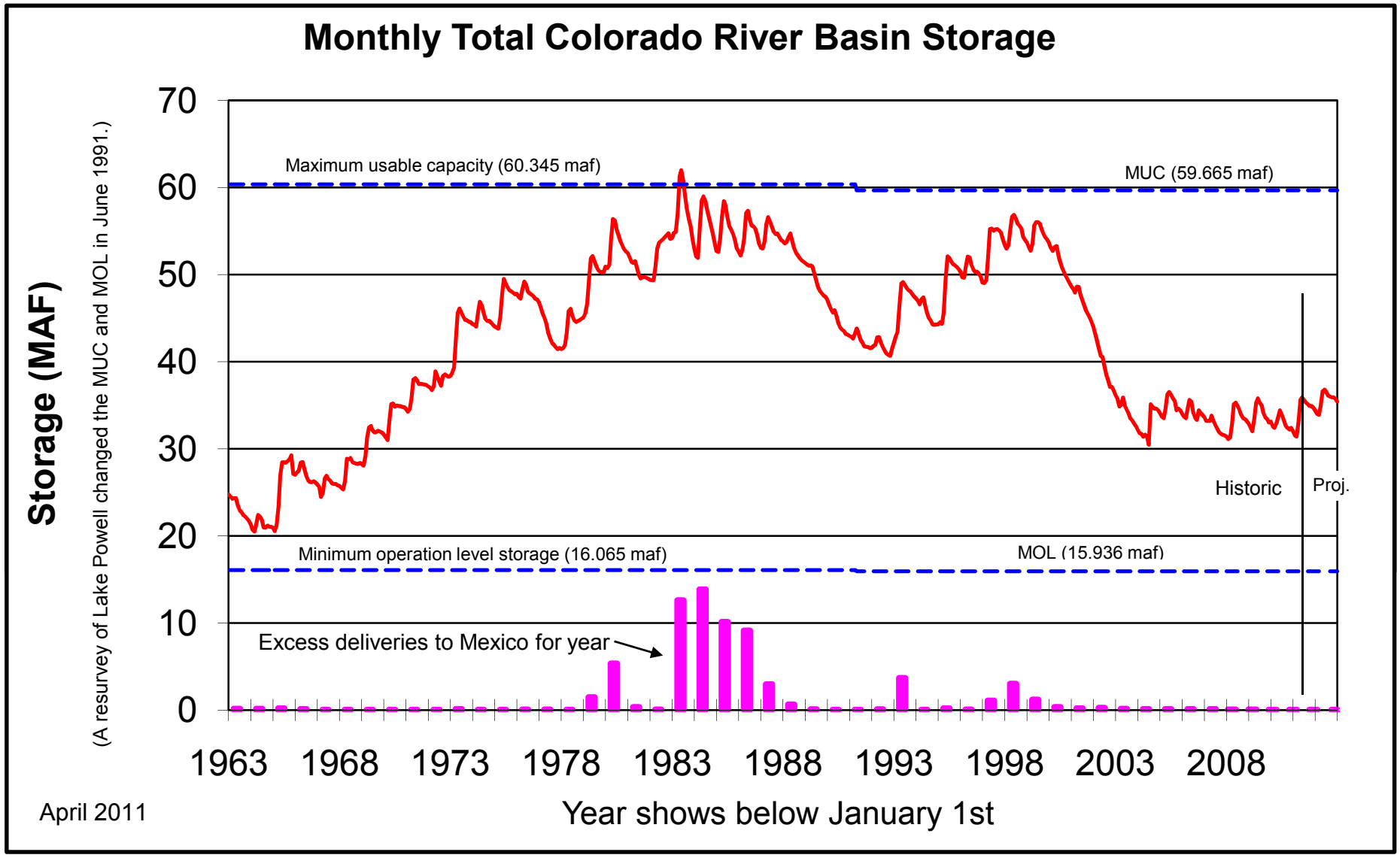
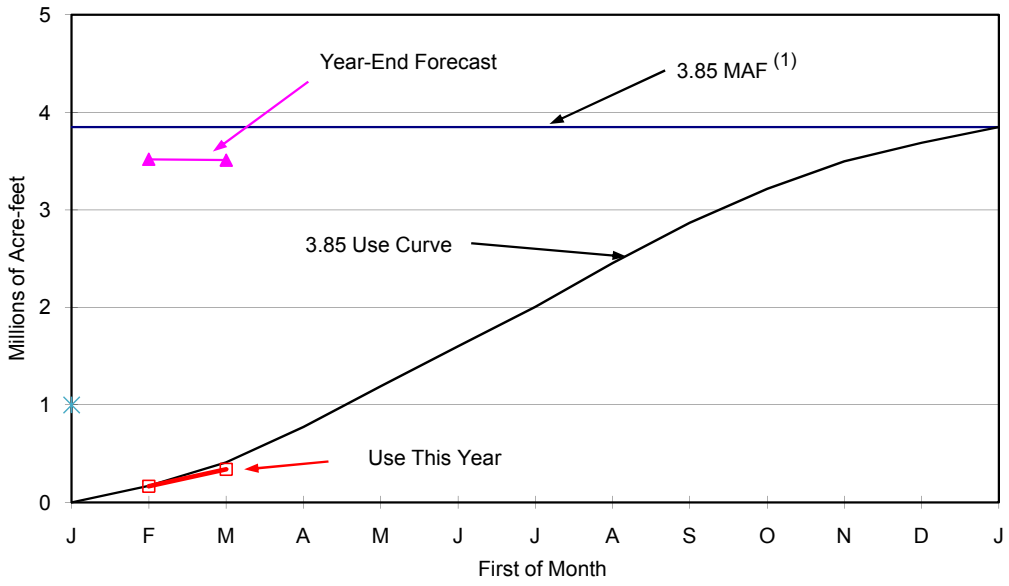

Monthly Total Colorado River Basin Storage
Storage (MAF)
(A resurvey of Lake Powell changed the MUC and MOL in June 1991.)
70
60
50
40
30
20
10
0
Maximum usable capacity (60.345 maf)
MUC (59.665 maf)
Historic
Proj.
Minimum operation level storage (16.065 maf)
MOL (15.936 maf)
Excess deliveries to Mexico for year
1963
1968
1973
1978
1983
1988
1993
1998
2003
2008
Year shows below January 1st
April 2011

FIGURE 1
APRIL 1, 2011 FORECAST OF 2011 YEAR-END COLORADO RIVER WATER USE BY THE CALIFORNIA AGRICULTURAL AGENCIES



Forecast of Colorado River Water Use
by the California Agricultural Agencies
(Millions of Acre-feet)

Month	Use as of First of Month	Forecast of Year End Use	Forecast of Unused Water (1)
Jan	0.000	--------	--------
Feb	0.167	3.519	0.023
Mar	0.340	3.510	0.032
Apr			
May			
Jun			
Jul			
Aug			
Sep			
Oct			
Nov			
Dec			
Jan			

(1) The forecast of unused water is based on the availability of 3.542 MAF under the first three priorities of the water delivery contracts. This accounts for the 85,000 af of conserved water available to MWD under the 1988 IID-MWD Conservation agreement and the 1989 IID-MWD-CVWD-PVID Agreement as amended; 80,000 AF of conserved water available to SDCWA under the IID-SDCWA Transfer Agreement as amended being diverted by MWD; an estimated 29,000 AF of conserved water available to SDCWA and MWD as a result of the Coachella Canal Lining Project, 67,700 AF of water available to SDCWA and MWD as a result of the All American Canal Lining Project; 14,500 AF of water IID and CVWD are forbearing to permit the Secretary of the Interior to satisfy a portion of Indian and miscellaneous present perfected rights use and 25,000 AF of water IID is conserving to create Extraordinary Conservation Intentionally Created Surplus. 0 AF has been subtracted for IID's Salton Sea Salinity Management in 2011. As USBR is charging uses by Yuma island pumpers to priority 2, the amount of unused water has been reduced by those uses - 6,530 AF. The CRB does not concur with USBR's viewpoint on this matter.

COLORADO RIVER BOARD OF CALIFORNIA

February 28, 2011

COLORADO RIVER WATER REPORT

The following report summarizes data obtained from provisional reports of the U.S. Geological Survey, U.S. Bureau of Reclamation, International Boundary and Water Commission, and Imperial Irrigation District.

I. Active Surface Storage[1/] in Reservoirs at end of Month (Thousand Acre-feet).

January 2011

Upper Basin	Storage	Elevation in feet	% of Capacity	Change During Month	Change from 2010
Lake Powell	13,828	3,620.6	57%	-641	-163
Flaming Gorge	3,112	6,023.7	83%	1	-97
Fontenelle	183	6,482.9	53%	-27	26
Navajo	1,343	6,059.6	79%	-20	117
Blue Mesa	554	7,486.4	67%	-3	-6
Morrow Point	112	7,153.7	96%	0	3
Crystal	16	6,749.0	88%	0	1
Sub-total	19,148		62%	-690	-120
Lower Basin					
Lake Mead	10,765	1,091.7	41%	464	-728
Lake Mohave	1,670	642.0	92%	20	-66
Lake Havasu	550	446.4	89%	-32	-47
Sub-total	12,985		45%	452	-841
Upper and Lower BasinTotal	32,133 [2/]		54%	-238	-960

1/ Figures shown do not include reservoir dead storage.

2/ Storage above minimum operation level is 32,133 - 15,936 = 16,197 thousand acre-feet. Minimum operation level (15,936 thousand acre-feet) is defined as the sum of active content at minimum power pool plus minimum active content required to make surface diversions at Lake Havasu and Navajo Reservoir.

II. Upper Basin Discharge (Acre-feet).

Station	Meas. Flow January 2011	Cumulative Flow October thru January	Meas. Flow Adjusted for CRSP Surface Storage Changes January 2011	% of Jan. 89- year average (1922-2010 water years)
Green River at Green River, Utah	136,200	632,400	136,900	113%
Colorado River near Cisco, Utah	162,500	820,600	159,500	89%
San Juan River near Bluff, Utah	49,300	211,100	29,800	64%
At Lee Ferry (Compact Point)	1,015,600	3,221,700	352,800	99%

III. Lower Basin Discharge (Acre-feet).

Station	January 2011	Cumulative Flow October thru January
Below Hoover Dam	539,700	2,637,900
Below Davis Dam	515,200	2,641,700
Below Parker Dam	387,200	1,579,800
Above Imperial Dam	340,100	1,478,700

IV. Consumptive Use of Lower Colorado River Mainstream Water (Acre-feet).
January, 2011

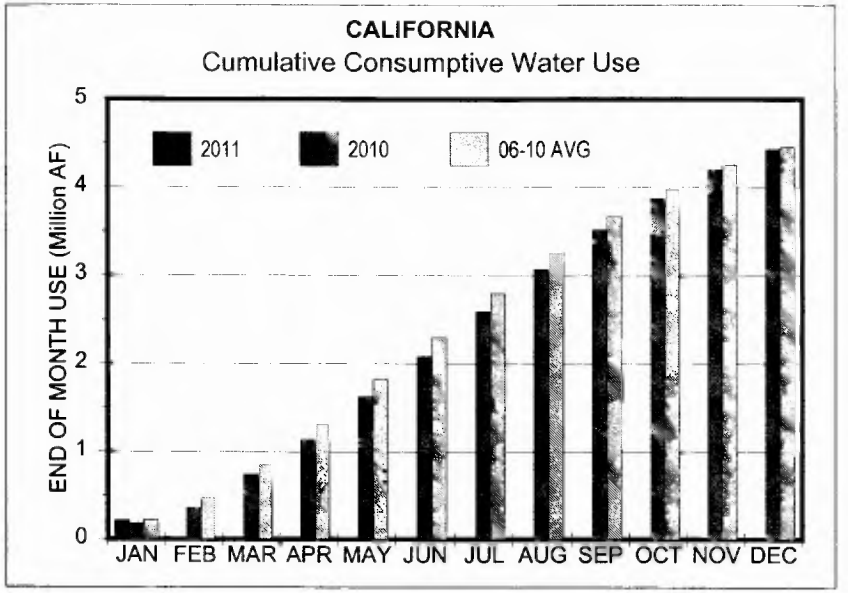
California Users	Diversion	Return	Consumptive Use	Change in Cons.Use From Jan. 2010	Cumulative Cons. Use January thru January	Change from prev. Jan. thru Jan.	12 Months thru January
Palo Verde Irrig. Dist.	31,720	28,460	3,260	13,170	3,260	13,170	323,230
Yuma Proj. (Res. Div.) [b]	4,160	1,960	2,200	2,640	2,200	2,640	41,260
Imperial Irrig. Dist. [a]	145,630		145,630	63,380	145,630	63,380	2,597,700
Salton Sea Mitigation	0		0	-320	0	-320	79,020
USBR Operations	0		0	0	0	0	12,490
IID plus Salton Sea Mitigation	145,630		145,630	63,060	145,630	63,060	2,689,210
Coachella Val. Wat. Dist. [a]	15,570		15,570	3,980	15,570	3,980	305,870
Subtotal	197,080	30,420	166,660	82,850	166,660	82,850	3,359,570
Fort Mojave Ind. Res. [c]	710	330	380	-480	380	-480	24,280
Cal. Miscellaneous [d]	710		710	0	710	0	34,000
Metropolitan Water Dist.	51,970	430	51,540	-47,690	51,540	-47,690	1,048,870
Total	250,470	31,180	219,290	34,680	219,290	34,680	4,466,720
Arizona Users							
Central Arizona Project	89,050		89,050	-37,110	89,050	-37,110	1,614,810
Colorado River Ind. Res.	23,540	15,190	8,350	12,230	8,350	12,230	425,340
Gila Gravity Main Canal	39,160	16,120	23,040	18,020	23,040	18,020	545,030
Yuma Proj. (Valley Div.)	21,690	10,420	11,270	6,690	11,270	6,690	219,730
Fort Mojave Ind. Res. [c]	1,890	870	1,020	-2,380	1,020	-2,380	82,750
Havasu Nat. Wildlife Ref.	20	0	20	-110	20	-110	35,380
Arizona Miscellaneous [d]	2,280		2,280	0	2,280	0	85,000
Total	177,630	42,600	135,030	-2,660	135,030	-2,660	3,008,040
Nevada Users							
From Lake Mead [b]	28,400	20,160	8,240	720	8,240	720	283,410
Mohave Steam Plant	10		10	-10	10	-10	360
Total	28,410	20,160	8,250	710	8,250	710	283,770
Total Consumptive Use (Ariz., Cal., Nev.)	456,510	93,940	362,570	32,730	362,570	32,730	7,758,530

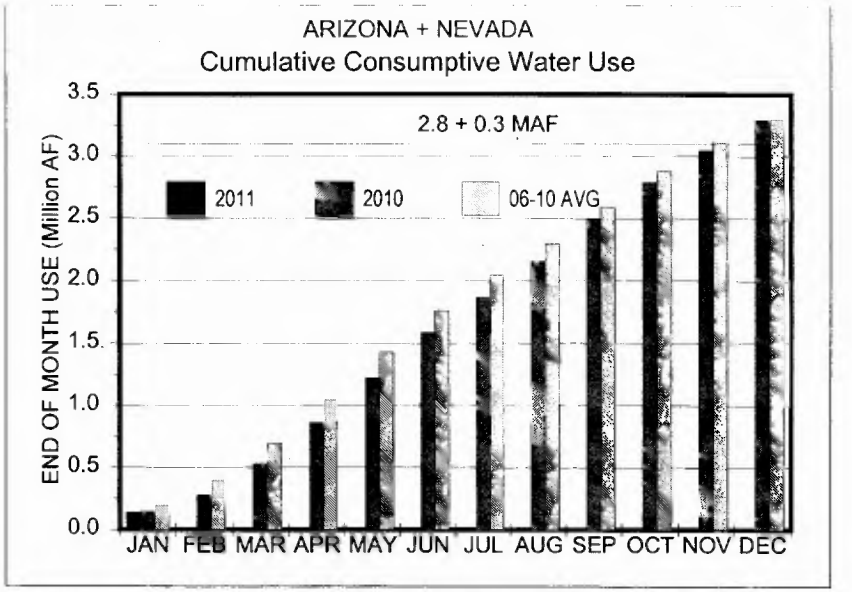
a. Based on measurements below Pilot Knob (assumed to be equal to USBR Article V data after credit is given for unmeasured California return flows between Imperial Dam and Pilot Knob). In addition, Salton Sea mitigation is not part of IID's use but is included in IID total diversion. USBR Operations consists of Salton Sea Operations 0 acre-feet and Warren H. Brock Reservoir Operations 4,040 acre-feet.

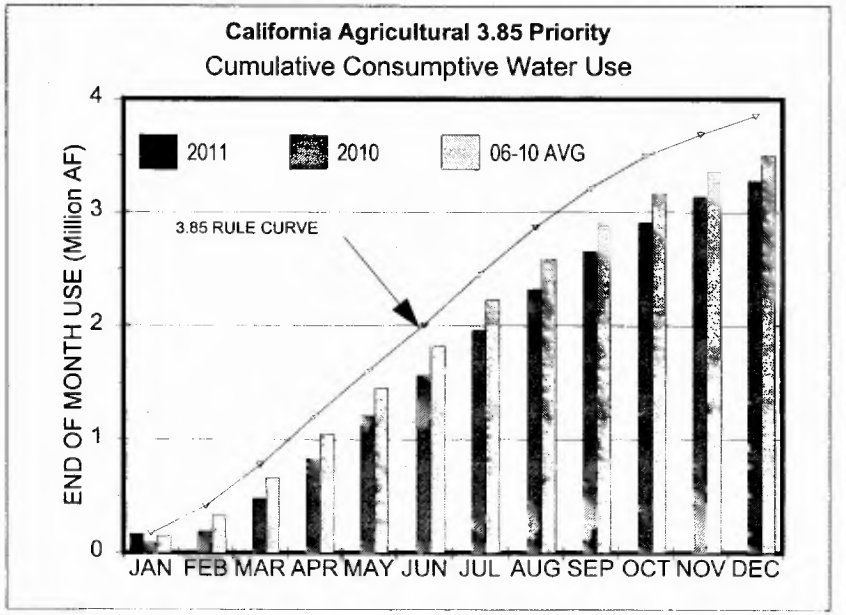
b. Return flow estimates based on averages of past returns as calculated by USBR for Article V data.

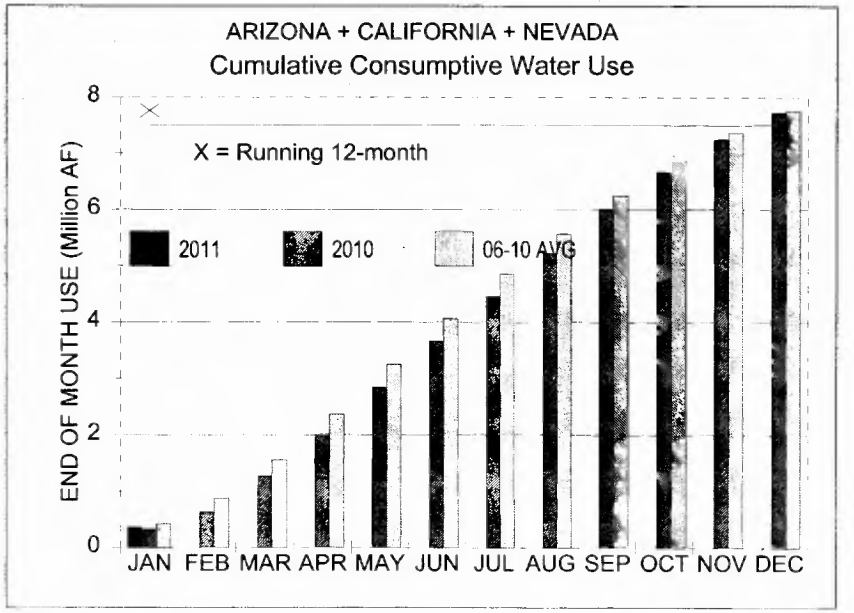
c. Starting January 2011 consumptive use value is diversion minus returns as reported by Reclamtion.

d. An estimated residual made by the Colorado River Board of California combining such items as small diversions along the river, unmeasured groundwater return flow, etc., which, when combined with other quantities listed to arrive at the State's total, presents an estimate of the State's Consumptive use of Lower Colorado River water.


CALIFORNIA
Cumulative Consumptive Water Use
END OF MONTH USE (Million AF)
0
1
2
3
4
5
2011
2010
06-10 AVG
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC


ARIZONA + NEVADA
Cumulative Consumptive Water Use
2.8 + 0.3 MAF
END OF MONTH USE (Million AF)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
2011
2010
06-10 AVG
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC


California Agricultural 3.85 Priority
Cumulative Consumptive Water Use
END OF MONTH USE (Million AF)
0
1
2
3
4
2011
2010
06-10 AVG
3.85 RULE CURVE
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC


ARIZONA + CALIFORNIA + NEVADA
Cumulative Consumptive Water Use
X = Running 12-month
END OF MONTH USE (Million AF)
0
2
4
6
8
2011
2010
06-10 AVG
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

April 1, 2011, Observed Colorado River Flow into Lake Powell (1) (Million Acre-feet)

	USBR and National Weather Service		Change From Last Month's Projected	
	April-July 2011	Water Year 2011	April-July 2011	Wat Yr 2011
Maximum (2)	11.800	15.776	2.500	2.782
Mean	9.500 *	13.076 **	0.200	0.082
Minimum (2)	7.500	10.476	-1.800	-2.518

* This month's A-J observed is 120% of the 30-year A-J average shown below.
** This month's W-Y observed is 109% of the 30-year W-Y average shown below.

Comparison with past records of Colorado River inflow into Lake Powell (at Lee Ferry prior to 1962)

	April-July Flow	Water Year Flow
Long-Time Average (1922-2008)	7.741	11.519
30-yr. Average (1961-90)	7.735	11.724
10-yr. Average (1999-2008)	5.203	8.449
Max. of Record	15.404 (1984)	21.873 (1984)
Min. of Record	1.115 (2002)	3.058 (2002)
Year 2000	4.352	7.310
Year 2001	4.301	6.955
Year 2002	1.115	3.058
Year 2003	3.918	6.358
Year 2004	3.640	6.128
Year 2005	8.810	12.614
Year 2006	5.318	8.769
Year 2007	4.052	8.231
Year 2008	8.906	12.356
Year 2009	7.804	10.633
Year 2010	5.795	8.738
Total Years 2000 - 2004	17.326	29.809
5-Year Average (2000-2004)	3.465	5.962

(1) Under conditions of no other Upper Basin reservoirs.

(2) USBR and NWS forecasts indicate the probability of 95 percent of the time the actual flow will not exceed the maximum value, and will not be less than the minimum value.

VI. Scheduled Flows to Mexico — Arrivals and excess arrivals of Water for Calendar Year 2011
(Acre-feet)

	(1) Scheduled Flow [9]	(2) Total Arrivals	(3) Excess Arrivals in accord with Minute 242	(4) Other Excess Arrivals	(5) Total Excess Arrivals	(6) Cumulative Excess Arrivals	(7) Flow Through NIB and Limitrophe	(8) Flow By-Pass Southerly International Boundary
Jan.	128,113	146,704	5,905	12,686	18,591	18,591	130,960	5,905
Feb.	155,921							
March	195,427							
April	189,122							
May	110,741							
June	116,625							
July	123,771							
August	95,542							
Sept.	89,307							
Oct.	67,821							
Nov.	109,270							
Dec.	118,340							
	1,500,000	146,704	5,905	12,686			130,960	5,905

Column (1). Flow schedule requested by Mexico. In surplus years as determined by the United States, Mexico can schedule up to 1.7 rather than 1.5 million acre-feet.

(2). Total Colorado River waters reaching Mexico. It is the sum of: 1) Colorado River water measured at the Northerly International Boundary, 2) drainage waters measured at the Southerly International Boundary near San Luis, Arizona, and 3) Wellton-Mohawk drainage waters measured at the Southerly International Boundary. It is the sum of Columns (1) + (5).

(3). Arizona's Wellton-Mohawk Irritation and Drainage District drainage water. This water is discharged to the Santa Clara Slough in Mexico via a concrete-lined canal.

(4). Excess arrivals other than Wellton-Mohawk drainage. It is the sum of: 1) a delivery of about 5,000 a. f. per year to ensure that Mexico receives what is scheduled, 2) releases from Parker Dam which are not used due to unexpected rainfall in the Palo Verde, Coachella, Imperial, and and Yuma areas, 3) controlled flood releases on the Gila and Colorado River, and 4) local runoff.

(5). Sum of Columns (3) and (4).

(6). Cumulation of Column (5).

(7). Including Colorado River flow at the Northerly International Boundary plus flow from Cooper, 11-mile, and 21-mile spillways.

(8). Including flow at the Southerly International Boundary, from the East and West Main canals, Yuma Valley Main, 242 Lateral plus diversions from Lake Havasu for Tijuana.

(9). Revised schedule of Calander Year 2010 as of July 14, 2010

WEIGHTED MONTHLY SALINITY AT
SELECTED COLORADO RIVER STATIONS
AND RUNNING 12-MONTH NIB-IMPERIAL FLOW-WEIGHTED SALINITY DIFFERENTIAL
(in parts per million)

	Below Hoover Dam			Below Parker Dam 3/			Palo Verde 3/ Canal Near Blythe			At Imperial Dam			At Northerly International Boundary			Running 12-Month Flow-Wtd. Differential 2/	
	5-Year avg.1/			5-Year avg.1/			5-Year avg.1/			5-Year avg.1/			5-Year avg.1/				
	1974-78	2010	2011	1974-78	2010	2011 4/	1974-78	2010 4/	2011 4/	1974-78	2010	2011	1974-78	2010	2011	2010	2011
Month																	
Jan.	690	623	606	709	630	620	751	660	640	913	756	714	1,041	831	882	130.7	143.3
Feb.	675	628		706	660		732	690		835	729		998	856		131.2	
March	684	622		699	640		727	650		805	663		925	746		125.8	
April	680	613		700	630		714	650		801	672		892	752		123.6	
May	677	614		698	630		709	640		822	685		962	951		130.6	
June	678	607		695	610		712	640		812	672		956	909		136.3	
July	682	611		688	620		709	620		797	658		909	834		139.8	
August	690	594		686	620		706	620		800	678		907	888		142.7	
Sept.	672	590		686	620		737	650		815	676		952	843		144.0	
Oct.	680	592		689	620		739	630		854	694		1,070	783		141.1	
Nov.	682	609		692	640		746	650		897	692		1,010	816		142.9	
Dec.	681	596		702	620		731	650		877	733		999	819		137.3	

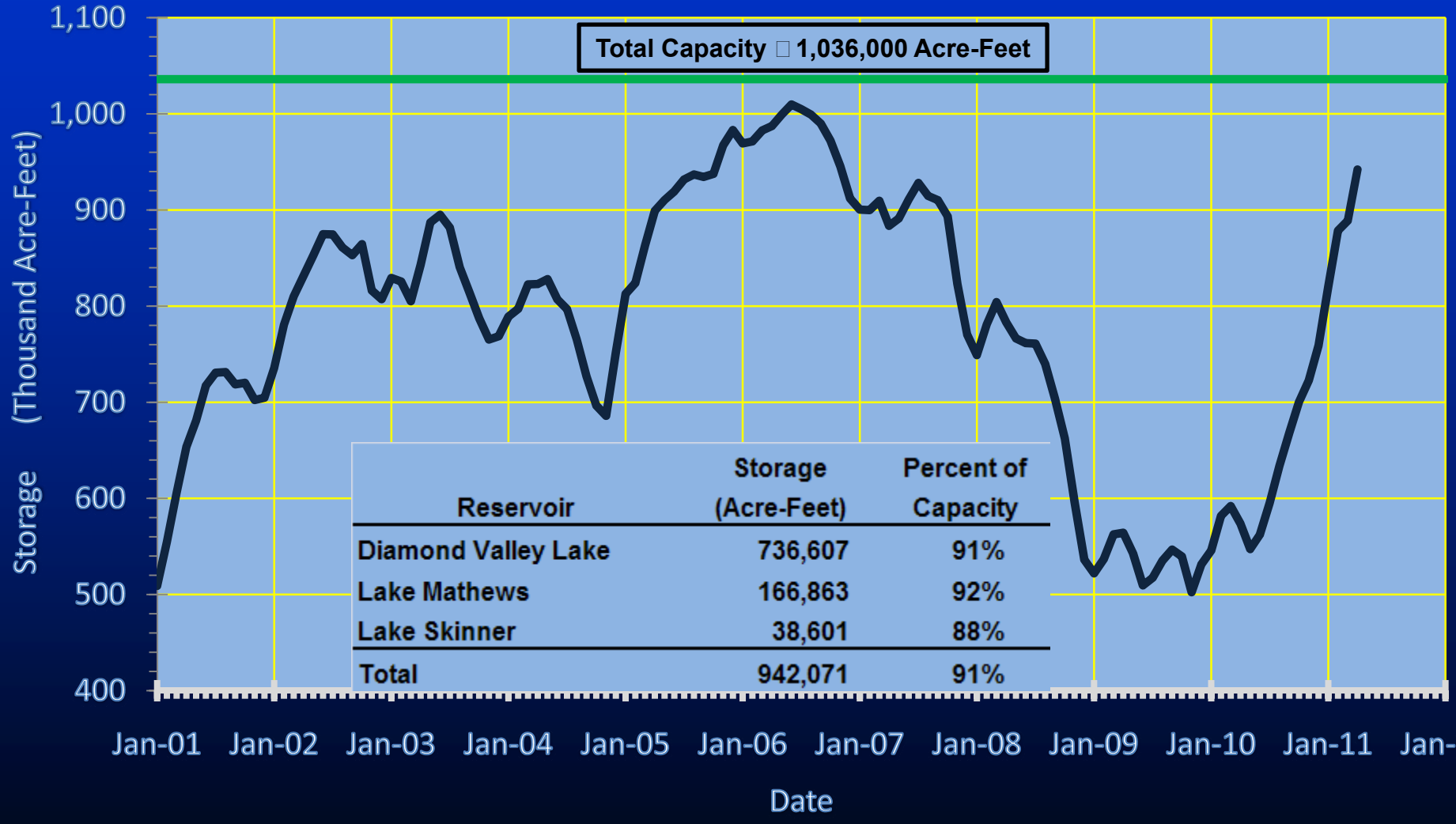
General Notes:

1/ 5-Year averages are arithmetical.
2/ 12-month flow-weighted differential between NIB and Imperial Dam through month shown in left column.
3/ Operational values only.
4/ Values are grab samples (one or two samples per month) and are rounded to represent general magnitude of salinity at Parker Dam and Palo Verde Canal..

5.b. – State and Local Water Reports

MWD's Combined Reservoir Storage as of April 1, 2011

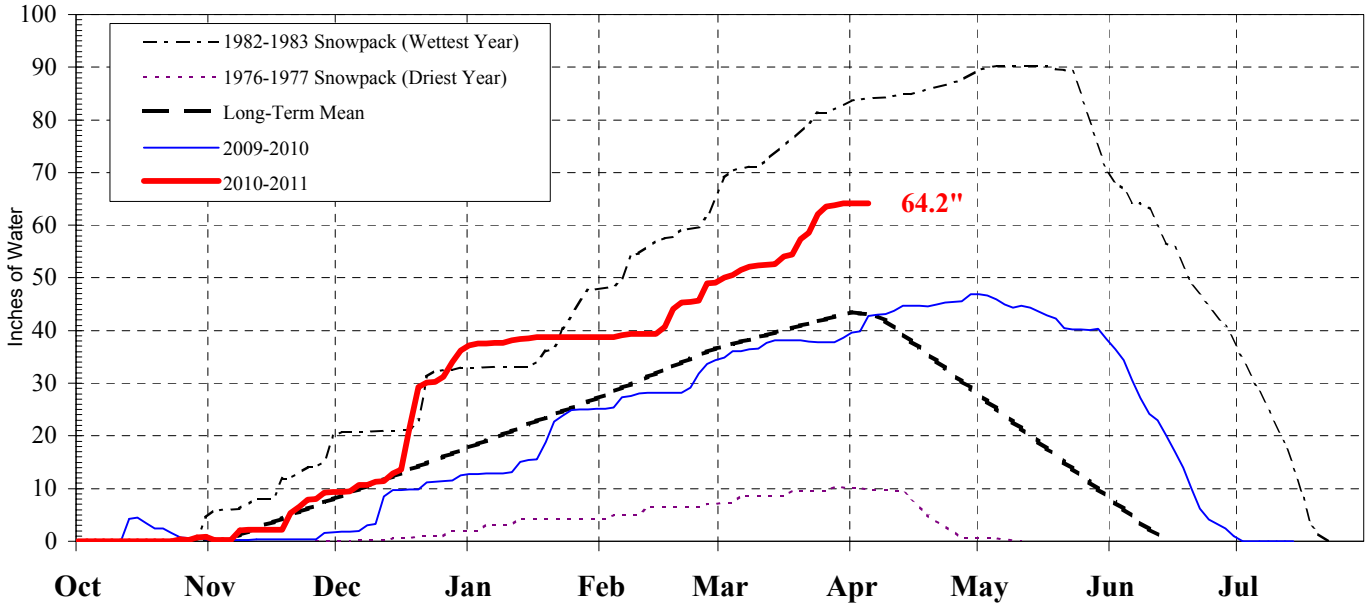
Lake Skinner, Lake Mathews, and Diamond Valley Lake



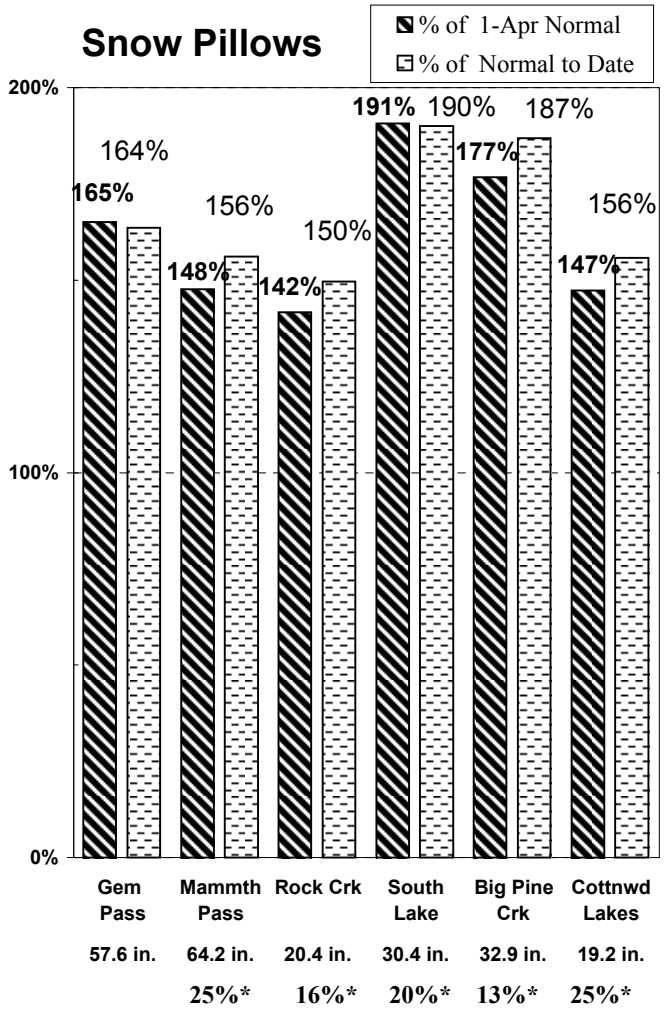
Reservoir	Storage (Acre-Feet)	Percent of Capacity
Diamond Valley Lake	736,607	91%
Lake Mathews	166,863	92%
Lake Skinner	38,601	88%
Total	942,071	91%

EASTERN SIERRA
CURRENT PRECIPITATION CONDITIONS
As of April 5, 2011

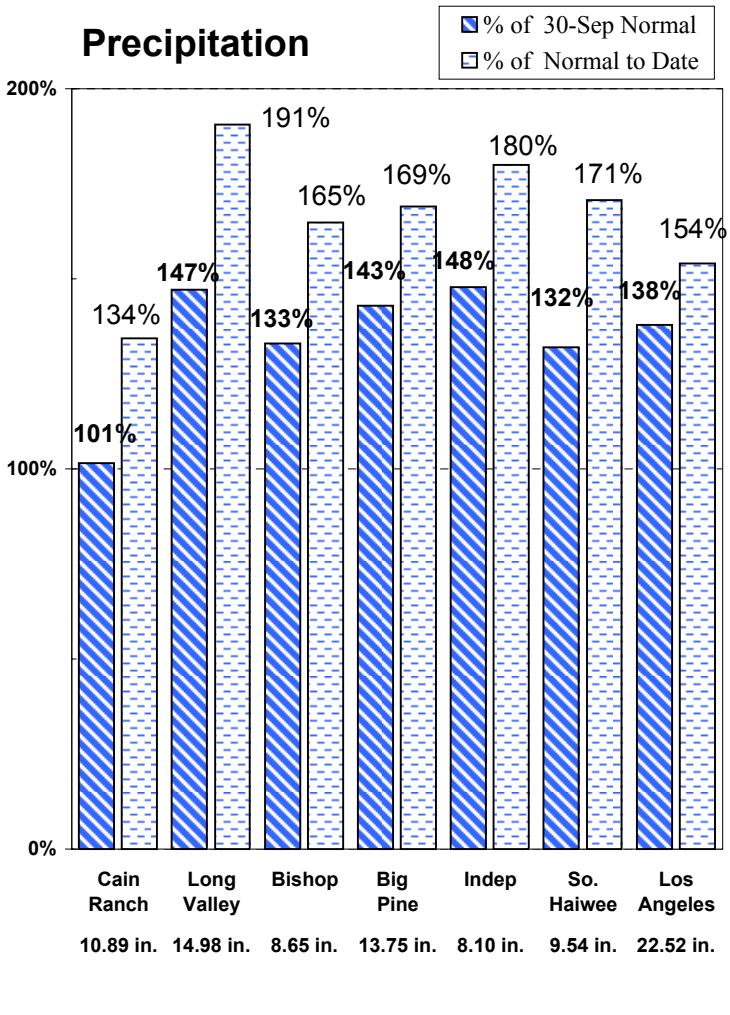
Mammoth Pass Snowpack



Snow Pillows



Precipitation

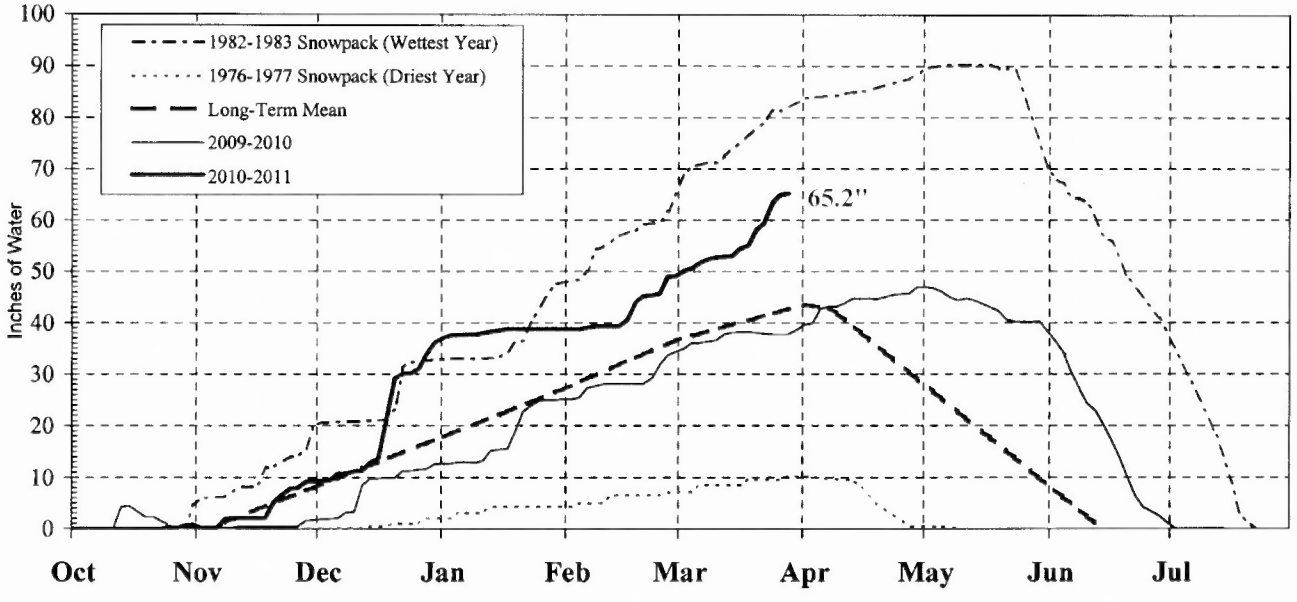


*** Individual snow pillow represents an area that contributes this percent of the total Owens River Basin runoff.**

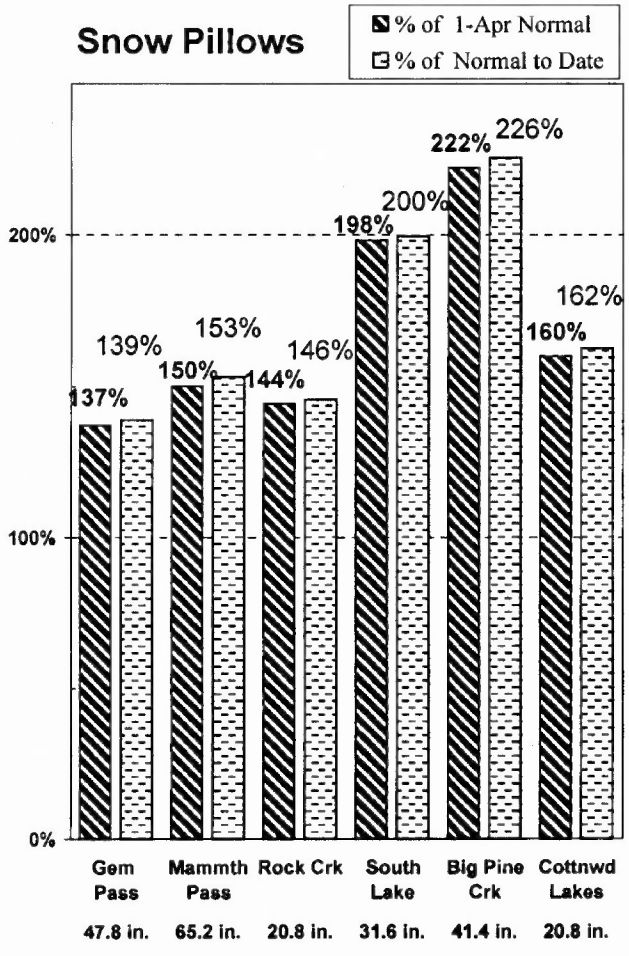
Measurement as Inches Water Content; Precipitation totals are cumulative for water year beginning Oct 1

EASTERN SIERRA
CURRENT PRECIPITATION CONDITIONS
As of March 29, 2011

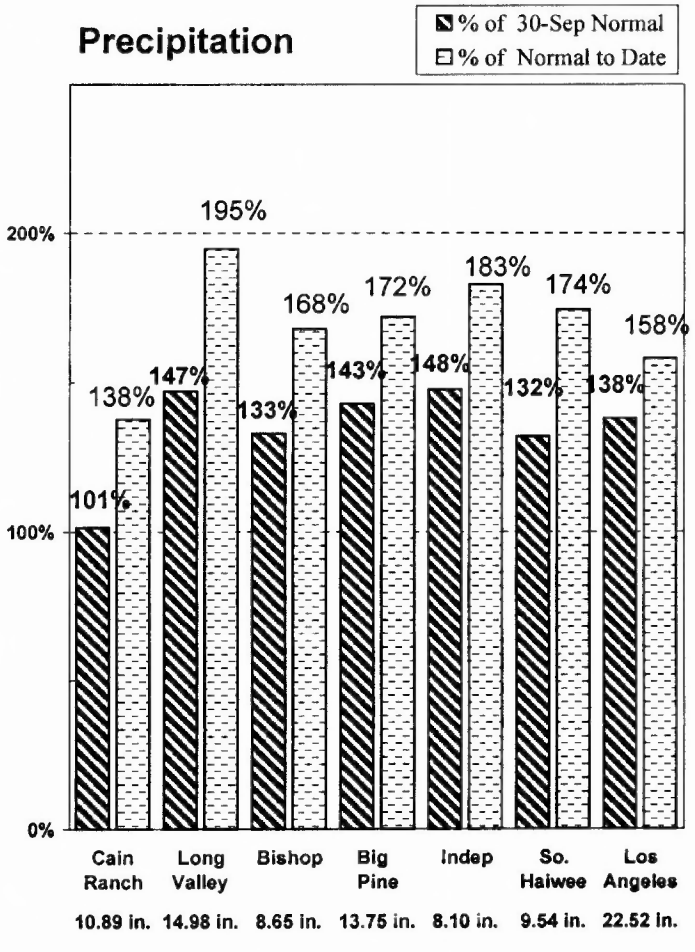
Mammoth Pass Snowpack



Snow Pillows



Precipitation



Measurement as Inches Water Content

Precipitation totals are cumulative for water year beginning Oct 1

EASTERN SIERRA SNOW SURVEY RESULTS
April 1, 2011

MAMMOTH LAKES AREA (Contributes 25% of Owens River Basin runoff)

Course	Water Content	April 1 Normal	Percent of Normal
Mammoth Pass	64.2	43.5	148%
Mammoth Lakes	33.5	21.1	159%
Minarets 2	47.1	30.1	157%
Mammoth Lakes Area Average:	**48.3**	**31.5**	**153%**

ROCK CREEK AREA (Contributes 16% of Owens River Basin runoff)

Course	Water Content	April 1 Normal	Percent of Normal
Rock Creek 1	16.1	7.4	218%
Rock Creek 2	18.4	10.5	175%
Rock Creek 3	21.3	14.4	147%
Rock Creek Area Average:	**18.6**	**10.8**	**172%**

BISHOP AREA (Contributes 20% of Owens River Basin runoff)

Course	Water Content	April 1 Normal	Percent of Normal
Sawmill*	40.3	19.7	204%
Bishop Area Average:	**40.3**	**19.7**	**204%**

BIG PINE AREA (Contributes 13% of Owens River Basin runoff)

Course	Water Content	April 1 Normal	Percent of Normal
Big Pine Creek 2	23.1	13.9	166%
Big Pine Creek 3	33.2	18.6	178%
Big Pine Creek Area Average:	**28.2**	**16.3**	**173%**

COTTONWOOD AREA (Contributes 25% of Owens Basin River runoff)

Course	Water Content	April 1 Normal	Percent of Normal
Cottonwood Lakes 1	19.4	13.0	149%
Trailhead**	21.2	13.7	155%
Cottonwood Area Average:	**20.3**	**13.3**	**152%**

EASTERN SIERRA OVERALL SNOW PACK (Weighted by contribution to Owens River Basin runoff)

Average of all Snow Courses	Water Content	April 1 Normal	Percent of Normal
	32.1	**19.2**	**167%**

Normals are based on the 1961-2010 period
* Measured by Dept of Water Resources
** Trailhead has only been measured since 1982.

5.c. – Colorado River Operations

Lower Colorado Region
Boulder City, Nev.

Media Contact: Doug Hendrix (928) 750-6562 Rose Davis (702) 293-8421

Released On: March 31, 2011

Reclamation Completes Successful Pilot Run of the Yuma Desalting Plant

Yuma, AZ – An idled desalination plant demonstrated the potential to augment Lower Colorado River supplies during a pilot run over the past year, officials with the Bureau of Reclamation and cooperating water agencies announced today. Concluding ahead of schedule and under budget, Reclamation's Yuma Area Office successfully implemented the pilot run of the Yuma Desalting Plant (YDP).

In collaboration with The Metropolitan Water District of Southern California, Central Arizona Water Conservation District and Southern Nevada Water Authority, Reclamation's Lower Colorado River Region this month completed a year-long operation of the YDP. In return for co-funding, the agencies received water credits in proportion to the water produced during the pilot run and each of their funding contributions.

Last spring Reclamation began operating the plant to gather cost and performance data needed to consider potential future operation of the plant. Reclamation and the sponsoring water agencies will review the results from the pilot run to evaluate the potential for long-term and sustained operation of the desalting plant.

"Throughout the operation, the YDP performed above expectations," said Lorri Gray-Lee, Regional Director of Reclamation's Lower Colorado Region. "The YDP recycled about 30,000 acre-feet of irrigation return flow water which was included in Colorado River water deliveries to Mexico. This resulted in the same amount of water conserved in Lake Mead and available to the sponsoring water agencies when needed in the future."

Over the entire pilot run, the plant operated effectively and efficiently with no substantial equipment problems or any accidents. With an acre-foot of water measuring 325,851 gallons of water, the pilot run produced approximately the amount of water used by about 116,000 people in a year.

"We're proud to have partnered with Reclamation in making this pilot run a reality," said Jeffrey Kightlinger, Metropolitan Water District general manager. "The run demonstrates innovative ways to increase water supplies as we and other Colorado River water users thoughtfully consider how to meet our long-term water supply needs."

With the Lower Colorado River Basin in the midst of an 11-year drought, David Modeer, general manager of the Central Arizona Water Conservation District said the agency was pleased with the outcome of the pilot run. "We are hopeful that Reclamation, in cooperation with interested water users and stakeholders, will use the cost and performance data gathered, along with the research and environmental monitoring information, to prepare plans for the long-term operation of the plant," said Mr. Modeer. "As demonstrated by the pilot operations,

water recycling and conservation are important tools to stretch our precious Colorado River water supplies."

Patricia Mulroy, general manager of the Southern Nevada Water Authority, said, "Beyond what we've learned about the Yuma Desalting Plant, the pilot run also demonstrated how the federal government, water users, environmental groups, and our neighbors to the south in Mexico can find common ground and collectively craft solutions."

The pilot run was part of an international agreement between the U.S. and Mexico governments as well as environmental groups on both sides of the border. In addition to the pilot run, the pact calls for actions to monitor the Cienega de Santa Clara, a wetland in Mexico maintained by agricultural drainage.

# # #

Reclamation is the largest wholesale water supplier and the second largest producer of hydroelectric power in the United States, with operations and facilities in the 17 Western States. Its facilities also provide substantial flood control, recreation, and fish and wildlife benefits. Visit our website at www.usbr.gov.

New Colorado River projection good news for CAP water supply

Posted: Thursday, March 31, 2011 8:30 pm | Updated: 7:52 am, Thu Mar 31, 2011.

EDITORIAL

Central Arizona Project operators and planners keep a close watch on conditions in the Colorado River watershed. The status of those watersheds helps illuminate the near-term future of our Colorado River water supplies.

According to the Bureau of Reclamation, current conditions on the Colorado River indicate a 97 percent probability that more than 2.5 million acre-feet (more than 850 billion gallons) of additional river water will flow from Lake Powell into Lake Mead in 2011. The higher than normal release from Powell would raise water levels in Lake Mead about 25 feet, and delay a potential shortage for several years.

"Compared to where we were a few months ago," stated CAP General Manager David Modeer, "this is really welcome news. We were looking at the possibility of a shortage as early as 2012, which would have caused CAP to lose access to nearly 20 percent of our Colorado River supply. With the larger projected release in 2011, it is highly unlikely we would see a shortage before at least 2016."

The primary driver of the Bureau's prediction is the better than average snowpack in the Rocky Mountains. Currently, snowpack in the Colorado River watershed above Lake Powell is about 112 percent of the historical average. The National Weather Service anticipates runoff into Lake Powell will be 16 percent higher than normal this summer.

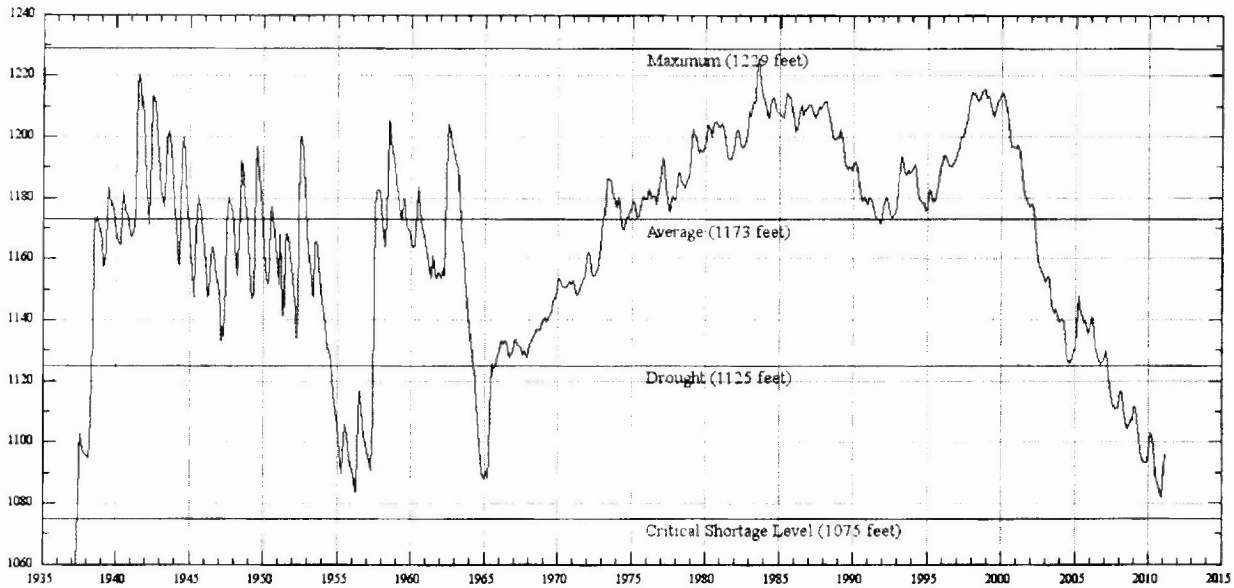
"We certainly hope that the extra water is released into Lake Mead," commented CAP Board President Pam Pickard. "In the meantime, CAP will continue its efforts to prepare for the future by recharging excess water, working with partners to protect water levels in Lake Mead, and pursuing additional water resources."

CAP is the steward of central Arizona's Colorado River water entitlement and a collaborative leader in Arizona's water community. The 336 -mile-long CAP system brings about 1.6 million acre-feet of renewable Colorado River water to its customers -- cities, businesses, agriculture and Indian communities -- in Pima, Pinal and Maricopa counties. An acre-foot of water is about 326,000 gallons.

Lake Mead Levels on the rise

March 22, 2011

Source: USGS



<< Back

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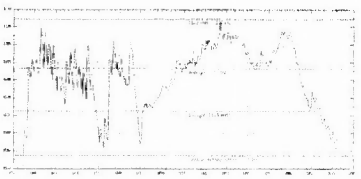
Lake Mead levels on the rise

Posted: Mar 22, 2011 5:10 AM PST
Updated: Mar 22, 2011 7:11 AM PST

By Erin Jordan - bio | email | Facebook | Twitter



Source: USGS

Click image to enlarge

TUCSON, AZ (KOLD) - La Niña came through!

While Southeast Arizona remains in a drought, the major water supply for the state, the Colorado River, is looking much more promising.

The headwaters of the Colorado River start in Colorado, high in the Rocky Mountains. Tributaries extend as far north as Wyoming.

Higher snowpack near the headwaters ensures a better water supply for all the states that use water from the Colorado River - Arizona, California, Nevada, New Mexico, Utah, Colorado, and Wyoming.

La Niña has an influence on the winter snowpack in the watershed of the Colorado River.

La Niña is defined as cooler than average sea surface temperatures in the equatorial East Pacific.

Here in the western United States, La Niña generally drives the winter storm track north, dumping more snow than average on the northern Rocky Mountains, while producing drought in the Desert Southwest.

This is good for Colorado River flow with slow spring snowmelt raising the water level at the headwaters. Of course this all flows downstream, raising water levels in the entire river.

The March snowpack near the headwaters measured mostly near or above average.

Above Lake Powell, upstream of Lake Mead, the average snowpack for the Colorado River watershed is 112% of average.

As the snow melts, it's expected to raise water levels in Lake Powell, which will then allow an increased release of water downstream into Lake Mead.

The Bureau of Reclamation forecasts a 97 percent probability that more than 2.5 million acre-feet (more than 850 billion gallons) of additional river water will be released from Lake Powell into Lake Mead this year.

The above average release from Lake Powell will raise water levels in Lake Mead about 25 feet.

Currently Lake Mead is just above the Critical Shortage Level, which if reached would trigger emergency measures, including rationing, for the seven states that use Colorado River water.

A third of all water used in Arizona comes from the Colorado River.

The additional water release should hold the threat of emergency measures off until at least 2016.

However, the situation will never be stabilized until water withdrawal out of the Colorado River is reduced.

This problem first began back when the seven western states divvied up the Colorado River water flow.

This was done based on average river flow over about 10 years in the early 20th century.

This flow was well above average flow over the long term according to paleoclimatic data.

The reconstructions of ancient river flows was mainly done by tree ring researchers at the University of Arizona.

At present, the overdraft out of Lake Mead is over 1 million acre feet per year.

That means any year above average flows in the river will hold off emergency measures temporarily.

Workshop on

Remote Sensing Applications for U.S.- Mexico Border Water Management

June 8-9, 2011	Doubletree Hotel San Diego Downtown

Sponsored by:

California Department of Water Resources
National Aeronautics and Space Administration (NASA)
Water Education Foundation

The purpose of this day-and-a-half workshop is to provide water managers on both sides of the border with an overview of remote sensing data and tools that could be applied to binational water management issues, building on experience gained from NASA's recent research project (funded by the American Recovery and Reinvestment Act of 2009) to demonstrate potential use of existing remote sensing data sets for water resources applications in California.

Common threads in border water management are the need to better prepare for droughts and the need for improved data collection and monitoring to support decision-making. Remote sensing's ability to integrate information over large geographic areas and to interpolate between scarce ground-based observations make it uniquely suited for border-area applications.

Specific topics to be covered at the workshop include:

- Remote sensing data applicable to border region
- Capabilities for estimating crop water use and vegetation conditions
- Mapping wetlands
- Enhancing irrigation scheduling information to improve agricultural water use efficiency
- Hydrologic monitoring capabilities
- Ciénega de Santa Clara case study
- Funding and institutional support for remote sensing applications

Place: Doubletree Hotel San Diego Downtown, 1646 Front St. San Diego, Ca. 92101

Time: Wednesday, June 8: check-in at noon; opening remarks at 1 p.m. and evening reception. Thursday, June 9: the program begins at 8:30 a.m. and will adjourn at 4:30 p.m.

Registration: $125; fee includes the Wednesday reception, Thursday lunch and background materials. **Online registration at www.watereducation.org.**

Hotel Reservations: We have secured a limited number of rooms at a special rate of $119, plus tax, per night. To reserve a room, call the Doubletree San Diego Downtown Hotel directly at (619) 239-6800 and ask for the Water Education Foundation block rate.

U.S. House of Representatives
Committee on Natural Resources
Washington, DC 20515

Opening Statement by
The Honorable Tom McClintock
Chairman
House Water and Power Subcommittee
Oversight Hearing on
"Creating Abundant Water and Power Supplies and Job Growth by Restoring Common Sense to Federal Regulations"
April 5, 2011

Today's hearing is conducted pursuant to House Resolution 72 which directs all committees of the House to identify current and pending regulations that threaten existing jobs or impede the creation of new ones.

This sub-committee, with jurisdiction over water and hydro-electric resources administered by the Bureau of Reclamation, will have its hands full in meeting this obligation.

In Southern Oregon, regulators have devastated Klamath Valley agriculture and now threaten to squander $700 million of ratepayer and taxpayer funds to destroy four hydroelectric dams capable of producing 155 megawatts of clean and cheap electricity – and to shut down operation of the Iron Gate Fish Hatchery that produces five million salmon smolt annually.

Last year, this government diverted 200 billion gallons of water away from Central Valley farms in California to dump into the Pacific Ocean for "habitat restoration," destroying a quarter million acres of the most productive farmland in the nation, throwing tens of thousands of farm families into unemployment and contributing to unemployment rates in the Central Valley exceeding 40 percent in some communities.

Even today, with snowpack at 165 percent of normal for the season – the wettest year in the last 16 – San Joaquin Valley farmers have only been guaranteed 65 percent of their contracted allotments.

Family farms on the Rio Grande in New Mexico faced extinction to provide nicer accommodations for silvery minnows until its delegation found the political will to act a few years ago. Just over the horizon, the Santa Ana sucker fish in southern California could have devastating impacts on residents seeking to protect local water supplies.

Across the nation, the EPA has waged an assault on rural America by imposing greenhouse gas regulations that will destroy small livestock operations, creating unjustified

buffer zones on pesticide applications and opposing surface storage projects like the Two Forks reservoir in Colorado.

The great irony, of course, is that the very projects that have made sustained year-round water flows possible and that have lowered water temperatures to the benefit of fish populations annually are precisely those under attack by the radical policies of the environmental left.

Not only have these water projects stabilized water flows and lowered water temperatures, the employment of ample fish hatcheries can provide for unparalleled abundance of salmon and other species. Yet the federal government-refuses to recognize fish-hatchery salmon as part of endangered fish counts and refuses to recognize the contribution that hatcheries can make to thriving fisheries

For many years, the central objective of our water and power policy was to create abundance – to make the desert bloom as the Bureau of Reclamation's Founders put it.

But this original mission seems to have been lost to a radical and retrograde ideology that seeks to create, maintain and ration government-induced shortages. And that is the policy cross-road where we have now arrived.

It is true that with enough government force, fines, lawsuits, edicts, regulations and bureaucracies we can restore plant and animal populations to their original prehistoric conditions by restoring the human population to its original pre-historic conditions.

Or we can return abundance as the central objective of our water and power policy – by providing abundant water, clean and cheap hydroelectricity, new recreational centers, desperately needed flood protection, burgeoning fisheries, re-invigorated farms – not to mention lower electricity, water and flood insurance bills for American families.

It is toward that brighter and more prosperous future that this majority seeks to proceed. It is my hope that the testimony today will assist the House in identifying those changes in law necessary to get there.

Dan Keppen
Executive Director
Family Farm Alliance

Testimony Before the U.S. House of Representatives
Water and Power Subcommittee
Oversight Hearing on
"Creating Abundant Water and Power Supplies and Job Growth
by Restoring Common Sense to Federal Regulations"
April 5, 2011

Good afternoon, Chairman McClintock, Ranking Member Napolitano, and Members of the Subcommittee. My name is Dan Keppen, and I serve as the Executive Director of the Family Farm Alliance (Alliance).

The Alliance is a grassroots organization of family farmers, ranchers, irrigation districts and allied industries in 16 Western states. The Alliance is focused on one mission: To ensure the availability of reliable, affordable irrigation water supplies to Western farmers and ranchers. We are also committed to the fundamental proposition that Western irrigated agriculture must be preserved and protected for a host of economic, sociological, environmental and national security reasons – many of which are often overlooked in the context of other national policy decisions.

This oversight hearing could not have come at a more opportune time. We are in danger of losing a generation of young farmers, and productive farmlands and Western agriculture's traditional water supplies are disappearing as urban, environmental and energy demands increase. This is all happening at a time when the United Nations projects that the world will need to produce 70 percent more food by 2050 to keep pace with world population growth and increased demand for calories.

Today, our own Western farmers and ranchers are currently being subjected to potentially restrictive and duplicative federal regulations on everything from another added layer of water quality protections to air quality requirements that would significantly increase the cost of their water supplies. These farmers are facing potentially ruinous recommendations from a federally-sanctioned committee that could impose additional expensive but unfunded safety standards to their irrigation canals and ditches. The related uncertainty that comes with all of this increased regulatory scrutiny will make it much harder for these farmers to survive in such a harsh economy. Putting just a few of these farmers out of work could impart huge limitations on our future ability to feed our country and the world.

I should emphasize that all these regulations in particular hit the small family farmer the hardest, as they are the least equipped to deal with the maze of sometimes overlapping requirements. We fear that we may be approaching a point where only the larger farm operators will be able to economically deal with these issues, and even they will face significant challenges and hardship.

The rural West faces challenges today that demand strong citizen engagement and aggressive, outspoken leadership by our elected officials. As Western producers of food and fiber continue to disappear, the ripple effect will extend far beyond their rural communities. As a country, we have nearly become complacent as food production has been taken for granted for far too long.

The United States for nearly four decades helped defeat world hunger through its massive productive output of affordable food. Western family farmers and ranchers will continue this campaign, but they need to be shown – through leadership and development of common sense agriculture and water policy priorities – that what they do really does matter to this country.

Fortunately, policy leaders like the Members of this Subcommittee are beginning to recognize the economic and social burdens caused by layers of regulations and bureaucracy. President Obama publicly noted in a recent *Wall Street Journal* Op Ed article that some federal regulations have gotten out of balance, placing unreasonable burdens on business—"burdens that have stifled innovation and have had a chilling effect on growth and jobs." We were pleased to see the president issue his Executive Order that requires federal agencies ensure that regulations protect safety, health and the environment while promoting economic growth. That order also directs a government-wide review of the rules already on the books to remove outdated regulations that stifle job creation and make our economy less competitive. The President's actions, in our view, could provide an opportunity for a bipartisan marriage of interests leading to real beneficial change in the way the federal government adopts and implements rules and regulations that impact peoples' lives, and livelihoods. We will remain hopeful but vigilant, and watch what the regulatory agencies actually do on this front, instead of only what they say.

While the Family Farm Alliance strongly affirms the original goals of well-intended laws like the Endangered Species Act (ESA), Clean Water Act (CWA) and National Environmental Policy Act (NEPA), some of these laws are nearly 40 years old, and some targeted reforms may be needed, including common-sense changes to make them work better, minimize confusion, and discourage unnecessary litigation. The Family Farm Alliance has a proven track record of providing solution-oriented recommendations along these lines. For example, we have previously testified before this subcommittee and provided recommendations for legislation that would require the establishment of quality standards for scientific and commercial data that are used to make decisions under the ESA and other important regulatory laws. We believe that greater weight should be given to data that have been field-tested or peer-reviewed. We support peer review of ESA listing decisions and ESA section 7 consultations by a disinterested scientific panel, and we believe legislation can be crafted to create procedures for that process.

IRRIGATED AGRICULTURE IS AN IMPORTANT COG IN OUR NATION'S ECONOMIC ENGINE

The development of Western water resources over the past one hundred years is one of the great success stories of the modern era. Millions of acres of arid Western desert have been transformed into one of the most efficient and productive agricultural systems in the world. The Bureau of Reclamation (Reclamation) is the largest supplier and manager of water in the 17 Western states west of the Mississippi. It maintains 480 dams and 348 reservoirs with the capacity to store 245 million acre-feet of water. These facilities deliver water to one in every five western farmers to irrigate about ten million acres of land, and provide water to over 31 million people for municipal and industrial (M&I) uses as well as other non-agricultural uses. Reclamation is also the Nation's second largest producer of hydroelectric power, generating 44 billion kilowatt hours of energy each year from 58 power plants. In addition, Reclamation's facilities provide substantial flood control benefits, recreational

opportunities, and extensive fish and wildlife habitat. All of this has been accomplished with a total federal investment of only $11 billion, according to the Bureau of Reclamation.

In early 2010, Secretary of the Interior Ken Salazar released a first-of-its-kind report, *Economic Impact of the Department of the Interior's Programs and Activities*, as an analysis of the job creation and economic growth benefits associated with a wide range of Departmental activities, including those related to Reclamation's irrigation and hydroelectric projects in the West. The report estimates that Reclamation's total estimated economic impact in 2008 was $39.5 billion, impacting an estimated 261,200 jobs. Of this total, Reclamation's irrigation activities generated an estimated 193,000 jobs and an economic impact of $25.3 billion, almost double the combined economic impacts ($14.2 billion, 68,200 jobs) associated with Reclamation's hydropower, municipal and industrial water, and recreation functions.

A LOST GENERATION OF FARMERS?

One of the most troubling aspects of the on-going farm crisis is the decline in the number of young farmers entering the field. More than half of today's farmers are between the ages of 45 and 64, and only six percent of our farmers are younger than 35 (www.farmaid.org). Fewer than one million Americans list farming as their primary occupation and among those, 40 percent are age 55 or older. In my home state of Oregon, according to a State Board of Agriculture report released earlier this year only 4 percent of farmers are between 25 and 34 years old and 8 percent are between 35 and 44 years old, and 39 percent are older than 65.

Both statistically and anecdotally, for the first time in many generations we see sons and daughters of farmers opting to leave the family farm because of uncertainty about agriculture as a career.

Meanwhile, Western irrigators continue to grow more food and fiber using less water and land. For example, the California Farm Bureau Federation reports that, between 1980 and 2000, water use and irrigated acreage in California decreased, yet crop production still rose 35 percent. And, according to USDA's Economic Research Service statistics, Americans are spending, on average, 9.7 percent of their disposable income on food. To put this into perspective, consider what citizens living in other countries pay. For example, in Brazil, 22.7% of annual household expenditures go for food, and in some underdeveloped countries these levels have reached 75%. Consider the following:

Country	% of Annual Income Spent on Food
Mexico	26.6%
Argentina	32.8%
Lithuania	40.4%
Indonesia	50.6%
Vietnam	64.7%
Tanzania	73.2%

At a time when average Americans are feeling the pinch of the economic recession in their pocket books, the foundation of our country's ability to provide safe and affordable food and fiber is also now at risk. Ironically, it is because Western irrigated agriculture has been so adaptive and successful at providing plentiful, safe and affordable food that it is now in a fight for its future existence – and

nobody believes there is a problem. The last Americans to experience food shortages are members of the Greatest Generation and their parents. For the most part, they have left us, taking with them the memories of empty supermarket shelves, WWII Victory Gardens, the Dust Bowl, and other times of significant hardship and shortage. Their personal experiences helped build today's American agricultural successes, but when the issue has never been personalized, it's easy to become complacent.

WESTERN FARMERS & RANCHERS ARE NEEDED TO FEED A HUNGRY WORLD – NOW MORE THAN EVER BEFORE

Earlier this year, the Global Harvest Initiative released its Global Agricultural Productivity (GAP) Report, which measures ongoing progress in achieving the goal of sustainably doubling agricultural output by 2050. For the first time, the GAP Report quantifies the difference between the current rate of agricultural productivity growth and the pace required to meet future world food needs. The report predicts that a doubling of agricultural output by 2050 will be needed to meet future world requirements for food. This would require increasing the rate of productivity growth to at least 1.75 percent annually from the current 1.4 percent growth rate, a 25 percent annual increase in the productivity growth rate.

Other signs point to the hard truth of a very real food crisis in the world today. The Food and Agriculture Organization of the United Nations (FAO) in June 2009 reported that over 1 billion people world-wide go hungry every day. The world's population is growing by 79 million people each year. The FAO estimates that the world needs to produce 70 percent more food by 2050 to keep pace with population growth and increased demand for calories.

The G-8 agricultural ministers committed at a summit last year to increase international assistance for agricultural development to $20 billion over the next three years. We believe a similar focus must be placed here in the United States closer to home, where less than two percent of the nation's population produces food for our country and the rest of the world.

Agriculture Secretary Vilsack said at a recent hearing that one of his top priorities will be making sure farmers have access to capital and credit - and that there is a next generation of farmers. Yet we have not heard of any initiatives to reduce or eliminate redundant regulations impacting agriculture that add burdensome paperwork and additional restrictions on everything from critical irrigation water supplies to the use of necessary farm inputs, all of which impact all farmers, young and old, who want to stay in agriculture.

Congress can help by closely examining how current and proposed rules and guidance regulating air and water quality protections are or are not working, identifying the economic impacts, costs and benefits associated with their implementation, and directing legislation that corrects deficiencies and streamlines and modernizes their on-the-ground implementation. Farmers and ranchers are exposed to overlapping and inconsistent mandates from different regulatory agencies that continue to be piled on year after year. Harry Cline in 2008 addressed this point well in an article published in *The Capital Press* newspaper, underscoring the point that pressure is building on farmers to give up the lifestyle and preserve the remaining equity in their property for their families, or to do the unthinkable – move

farming operations to other countries where labor is plentiful, environmental concerns relaxed and economic development is welcomed.

THE DISCONNECT BETWEEN ENVIRONMENTAL AND AGRICULTURAL POLICY

The Family Farm Alliance has long worked on finding ways to streamline the regulatory process, and worked closely with past administrations and Congress towards that end. In the past two years, our members have become increasingly concerned about the number of environmental policies that are currently being re-written either as guidance or in the rulemaking process by this Administration.

Currently, water and environmental policies seem to be considered separately from foreign and domestic agricultural goals and objectives. In the past year, federal agencies have steadily re-written numerous environmental policies that - if left unchecked – could carry the risk of real potential harm for Western agricultural producers. The list of new rulemaking and other potentially burdensome, duplicative, or even unattainable regulations and agency guidance that will impact the availability of Western water supplies continue to grow, and includes the following specific actions:

- Economic and Environmental Principles & Guidelines for Water and Related Resources Studies. The White House Council on Environmental Quality (CEQ) has drafted new standards for federal water projects that for the first time put environmental goals on the same plane as economic development concerns. These proposed changes may have a significant impact on new water project planning and federal funding in the future;

- More stringent EPA pesticide restrictions, which increases costs, liabilities, and risk of crop damage to Western producers. Family Farm Alliance Advisory Committee member Norm Semanko will testify to this in more detail at today's hearing;

- USFWS consideration of wide-ranging policy revisions to ESA administration that could lead to greater legal exposure to water users with ties to federal projects;

- USFWS revisions to designations and critical habitat associated with ESA-protected species, including Western bull trout, the California red-legged frog, Greater Sage Grouse, and Pacific smelt which could lead to even more restrictions on western lands and water users, including family farmers and ranchers;

- CEQ intent to "modernize and reinvigorate" the National Environmental Policy Act (NEPA). Based on our review of the guidance, it appears CEQ would place more emphasis on monitoring and reporting requirements for NEPA activities associated with categorical exclusions and the use of "frontloaded" environmental mitigation where these exclusions have traditionally been used. Western water managers often use these legal NEPA mechanisms in conjunction with recurring actions associated with annual operations and maintenance activities on ditches or major rehabilitation and repair projects on existing dams. If implemented as written, the CEQ directives would definitely impact Western water users by adding additional costs to formerly cost-effective NEPA activities and analyses. Western irrigators and others in the regulated community fear that the net result of these changes will be more expense, delay and bureaucratic red tape in pursuing

federal actions as simple as the ongoing operation and maintenance of existing water management facilities;

- EPA's Strategic Plan for 2011-2016, which strongly indicates that EPA will place more emphasis on regulating greenhouse gases, setting nutrient standards for water bodies, environmental cleanup, chemical regulation, and enforcing environmental laws through "vigorous and targeted civil and criminal enforcement" actions;

- EPA emissions upgrades that may be mandated for the Navajo Generating Station (NGS) in Arizona. The emission requirements being considered by EPA are intended to satisfy unique visibility criteria driven in part by the proximity of NGS to Grand Canyon National Park, and they carry with them a heavy cost to local farmers and ranchers. Family Farm Alliance Advisory Committee member Paul Orme will testify to this matter in greater detail at today's hearing;

- Recent guidance from EPA regional offices which demonstrates a clear bias against the planning and construction of any new water storage projects, which appears to prejudge potential projects without consideration of important civic, economic and environmental needs;

- The Obama administration reconsideration of a 2008 EPA rule recently upheld in the 11th Circuit Court of Appeals that allows water transfers from one water body to another without requiring a Clean Water Act (CWA) NPDES permit. This new level of regulation, permitting and certain litigation would hamstring the economies of states like Arizona, California and Colorado, where millions of acre-feet of water are transferred from one river basin to another every year;

- EPA's failure to establish clear procedures for its pesticide effects determinations and subsequent actions in the Pacific Northwest consistent with 1988 amendments to the Endangered Species Act (ESA). This has resulted in unnecessary restrictions on the use of agricultural pesticides without any indication that Pacific Northwest salmon will benefit and puts producers along the West coast at a competitive disadvantage;

- EPA has launched an effort to develop their "Green Book", a project to ensure all EPA policies are driven by "sustainability". EPA's current policies and regulations are driven by statutes that oversee individual issues, such as pesticides, air pollution and drinking water contaminants. But this new project, undertaken at EPA's direction by the National Academy of Science, will develop a framework for the EPA to link all environmental issues and ensure its policies rely on sustainable use of energy, water, land and other resources. There is much speculation of the impacts to agriculture and other resource-dependent industries arising from the outcome of this effort.

- EPA late last year issued a memorandum that has the effect of regulating air quality under the Clean Water Act (CWA) based on the theory that air is tributary to waters of the United States. The memorandum directs states to designate waters bodies as impaired if they do not meet water quality standards because of acidification caused by air pollution. In other words, States or EPA could now regulate CO_2 and other pollutant emissions under the CWA.

- In recent months, Western water managers have become aware of and are becoming increasingly concerned with actions undertaken by the National Committee on Levee Safety (NCLS). This group, authorized and created in the Water Resources Development Act of 2007, includes the U.S. Army Corps of Engineers (Corps) and FEMA as the only federal agencies represented on the Committee. The Committee was established to deal with post- Katrina flood risk issues, with an emphasis on Corps levees. However, the Committee has developed a plan that essentially could apply Corps-level engineering specifications and standards to both levees and water supply canal embankments throughout the country, with little to no coordination with the Bureau of Reclamation and Western water managers. The Committee is now considering draft legislative language that could be used to create a National Levee Safety Program to implement this plan, and thus far, concerns raised by Reclamation and Western irrigation interests do not appear to be gaining traction with the Corps and FEMA. We believe Congress did not intend for water delivery canals that are not part of a flood control system to be subjected to new requirements administered by the Army Corps of Engineers. Wade Noble, President of the National Water Resources Association and a member of the Family Farm Alliance Advisory Committee, will focus solely on this troubling development in his testimony today.

The above federal water resources policy actions and regulatory practices could potentially undermine the economic foundations of rural communities in the arid West by making farming and ranching increasingly difficult and costly. American family farmers and ranchers for generations have grown food and fiber for the world, and we will have to muster even more innovation and resolve to meet this critical challenge. That innovation must be encouraged rather than stifled with new federal regulations and uncertainty over water supplies for irrigated farms and ranches in the rural West.

The Family Farm Alliance hopes that the Administration will give significant consideration to the concerns of agricultural organizations. We pledge to work with the Administration, Congress, and other interested parties to build a consensus for improving the regulatory processes associated with improving water management, water quality, and our environment. At a minimum, federal policies on these and various other water-related issues (Clean Water Act, aging water infrastructure, climate change, land-use, to name a few) should be informed and guided by the goals of preserving our domestic agricultural production capacity and the vitality of rural western communities.

ESA IMPLEMENTATION BY FEDERAL AGENCIES A MAJOR CONCERN

A growing concern to Western irrigators is the employment of the ESA by the federal agencies as a means of protecting single species by focusing on one narrow stressor to fish: irrigation diversions. For the second time in a decade, Congress directed that the National Academy of Sciences (NAS) convene a high-level, independent scientific review of federal restrictions on water deliveries affecting thousands of Western farmers and ranchers. In 2009, those restrictions – based in large part on ESA biological opinions in the Sacramento-San Joaquin Delta (Delta) - were a primary cause for the water cutbacks and rationing afflicting hundreds of communities throughout California and the resulting economic devastation in the San Joaquin Valley. Last year, south-of-Delta water managers estimate that over 1 million acre-feet of water that would normally be diverted to supply San Joaquin Valley farms and Southern California communities were lost to the Pacific Ocean during a five-month period due to the requirements for Delta

pumping restrictions of the biological opinions rendered by federal fisheries agencies to protect endangered fish species.

A similar decision to focus exclusively on one stressor – a federal irrigation project - was made by federal agencies in the Klamath Basin in 2001, and that decision, and the science used by federal fish agencies to support the decision, was criticized later in a review conducted by the NAS.

Unfortunately, agency biologists apparently continue to cling to their belief that the only "switch" that can be pulled to "protect" Klamath River fisheries is to reduce Klamath Project water supplies, because there is no other perceived immediate fix. True solutions to this complicated challenge cannot happen overnight, they are long-term in scope, and all stakeholders must be at the table to contribute to long-lasting success for all interests in this important watershed. We encourage federal agencies to work collaboratively with local interests to find realistic solutions that benefit fisheries in a way that avoids economic hardship to family farmers and ranchers in the Klamath Basin.

The California and Klamath stories are very similar. The NAS stepped in after Klamath Irrigation Project supplies from Upper Klamath Lake were cut off by federal biological opinions under the ESA in 2001. The Academies' objective scientific review concluded that there was insufficient evidence to support these biological opinions in restricting agricultural diversions from the river, which had led to the near-collapse of the local agricultural community. In Klamath, the federal regulators looked at only one of the stressors contributing to the fisheries' decline and they focused on only one solution – cutting off water supplies to agriculture.

Likewise, in California today, the same federal agencies have refused to assess the impacts of the many stressors affecting the health of the Delta. And for fifteen years, they have been restricting or cutting off water deliveries, even though their experience during those fifteen years have conclusively demonstrated that these restrictions have done little to prevent the fisheries' decline in the Delta.

As in California, the effects of the Klamath restrictions were immediate and far-reaching– not just losses to the economy but also the wildlife benefits that were lost with the water diversions to farms and ranches (and a federal wildlife refuge). And yet, the federal regulators failed to perform any environmental impact analysis before they ordered cutbacks in California and Klamath.

Last year, U.S. District Judge Oliver Wanger handed a victory to agricultural water users who were seeking to maintain pumping levels in the Sacramento-San Joaquin Delta. In separate decisions involving threatened delta smelt and endangered salmon, Judge Wanger found that the federal government must consider humans along with the fish in limiting use of the delta for irrigation. He also found that water users made convincing arguments that the federal government's science didn't prove that increased pumping from the delta imperiled the smelt.

Among the reasoning for the ruling offered by the court:

- The federal agencies failed to undertake any quantitative analysis to determine how many smelt there are;
- As a result, the agencies' claims with respect to the detrimental impact of water pumping on the overall smelt population were not supported;
- The agencies moreover failed to establish the significance of pumping operations on smelt abundance in relation to all of the other factors affecting the smelt; and .
- The court further found that the federal agencies failed to address alternative approaches to avoid jeopardy to the smelt.

Judge Wanger has directed the USFWS and the NMFS to revise the biological opinions for smelt and for salmon. He has found that the agencies have failed to meet the standards for scientific integrity that the ESA requires. And he has determined that both agencies violated the National Environmental Policy Act as well. As a result, in developing these new biological opinions, the government will finally be required to take into account the impact of these regulations on the human environment. And for the first time, they will be required to take public comment before imposing a new set of regulatory restrictions on the two water systems that serve two-thirds of California's population.

IMPEDIMENTS TO ON-FARM ENERGY OPPORTUNITIES

Farmers and ranchers also face difficulties when they seek to develop new sources of clean, emission-free power using existing infrastructure. A 2010 USDA survey focusing on the 20,000 American farms using methane digesters, solar panels and wind turbines is part of a larger effort from the Obama administration to promote rural energy production. However, there are also tens of thousands of opportunities in the West to install low-head hydroelectric power facilities in existing irrigation canals. Many of our members operate existing irrigation canals and ditch systems that may provide opportunities to develop in-canal, low-head hydroelectric projects that have tremendous potential for producing significant amounts of renewable energy with virtually no negative environmental impacts. Historic irrigation structures can be retained while the system is updated with modern clean-energy producing technologies. Increased revenues from the sale of this renewable energy could result in lower irrigation costs to farmers. And, importantly, irrigation water delivery services can continue while utilizing flows for clean, emissions-free "green" energy production.

Unfortunately, water users who seek to implement multiple low-head hydropower generation sites throughout their service area must undergo costly and time-consuming FERC licensing processes that sometimes impede their ability to implement these projects. Because there are virtually no environmental impacts associated with these easy-to build renewable projects, they should also be promoted and be accorded the same streamlined permitting as new solar and wind projects.

The Alliance supports the "Small-Scale Hydropower Enhancement Act of 2011" – co-sponsored by Congressmen Adrian Smith and Jim Costa – which intends to exempt any conduit-type hydropower project generating less than 1.5 megawatts from FERC jurisdiction. This limited exemption would promote the development of small-scale hydropower while still protecting the environment. This

would help stimulate the economy of rural America, empower local irrigation districts to generate revenue and decrease reliance on fossil fuels – all at no cost to taxpayers.

CONCLUSIONS AND RECOMMENDATIONS

From the standpoint of the Western American farmer, it can be bewildering, daunting and frustrating to view the specter of new rules, regulations, and guidance that are currently under development by federal regulatory agencies. Unfortunately, the very real impacts that existing laws and regulations exert on agricultural producers have already been felt, and those rules do not appear to be going away any time soon. Admittedly, it is simple enough to document these efforts to the best of our abilities and register our complaints. While it is much more difficult to propose constructive solutions that can make existing laws work better, the Family Farm Alliance prides itself in employing this very philosophy. The Alliance and many other organizations representing American producers have developed detailed recommendations over the past decade on how the negative effects of existing environmental regulations can be corrected and improved. We would be happy to provide a compilation of those efforts and make them available to the subcommittee.

Our farmers and ranchers are increasingly subjected to duplicative and expensive federal regulations and their related uncertainty of increased costs, lost critical farm inputs, and reduced water supplies, making it harder to survive in a harsh economy. And forcing farmers out of business and taking farmland out of production so that water supplies can be redirected to new environmental demands will impart huge limitations on our future ability to feed our country and the world.

With the right combination of tools and incentives – the latter, in part, in the form of modernized, streamlined regulations - as well as both public and private sector investments in water management infrastructure for the future, Western irrigated agriculture will be poised to help close the global productivity gap and sustainably meet this Nation's and the world's food and fiber needs in 2050 and beyond.

Thank you for this opportunity to present testimony to you.

NATIONAL WATER RESOURCES ASSOCIATION
Meeting Tomorrow's Challenge

Before the Natural Resources Subcommittee on Water and Power

Hearing to consider Creating Abundant Water and
Power Supplies and Job Growth by Restoring Common Sense to Federal Regulations

April 5, 2011
2:00 p.m.
1324 Longworth House Office Building

Comments of
Wade Noble
President
National Water Resources Association

Submitted on behalf of
The National Water Resources Association

Good afternoon Chairman McClintock, Ranking Member Napolitano and Members of the Subcommittee, my name is Wade Noble and I am here on behalf of the National Water Resources Association (NWRA). I am the President of the Association and also an attorney in Yuma, Arizona.

NWRA is a federation of state water associations representing agricultural and municipal water providers in the seventeen Western Reclamation states. Its strength is due to "grassroots" participation on virtually every national issue affecting western water and power resources conservation, management, and development.

We appreciate the opportunity to comment on federal regulations impacts on water and power supplies. NWRA unequivocally supports *common sense* federal regulations. We are increasingly concerned about duplicative and unnecessary regulations, many of which may have negative consequences for western water users. Specifically, I will address the direct impacts the recommendations of the National Committee on Levee Safety will have on Bureau of Reclamation projects and irrigators west wide.

Western water managers are progressively apprehensive with actions of the National Committee on Levee Safety (NCLS). The group, authorized in the Water Resources Development Act of 2007 (WRDA), includes the U.S. Army Corps of Engineers (Corps) and the Federal Emergency Management Agency (FEMA) as the only federal agencies. The Bureau of Reclamation, with thousands of miles of levees and canals, is not at the table.

The Committee, established to deal with post-Katrina flood risk issues emphasizing Corps levees, plans to apply Corps-level engineering specifications and standards to levees and canals. There will be little or no coordination with the Bureau of Reclamation and Western water managers. Thus far, concerns raised by Reclamation and Western irrigation interests do not appear to be gaining traction with the Corps and FEMA.

Congress created the NCLS to develop recommendations for a national levee safety program, including a strategic plan for implementation of the program. The NCLS began development of recommendations in October 2008. The result so far is twenty recommendations for creating a National Levee Safety Program which were in a January 15, 2009 draft report, *Recommendations for a National Levee Safety Program: A Report to Congress from the National Committee on Levee Safety*.

The recommendations for a National Levee Safety Program (NLSP) are grouped into three concepts: (1) the need for leadership via a National Levee Safety Commission which would - support state delegated programs, provide national technical standards and risk communication, and coordinate environmental and safety concerns; (2) the building of strong levee safety programs in all states which would - provide oversight, regulation, and critical levee safety processes; and (3) a foundation of well aligned federal agency programs.

Federal legislation will be necessary to implement 12 of the 20 recommendations. The Corps and FEMA are working within existing authorities and funding to implement several recommendations addressing the basics of communication and outreach, use of common

language and refinement of their existing programs. The nonfederal members of the NCLS have drafted a NLSP addressing areas where NCLS foresees needed implementation legislation. The Corps is considering NCLS recommendations in development of levee safety standards and risk assessment and communication methodologies.

NWRA supports NCLS efforts applicable to Corps facilities. It is, however, not appropriate to apply similar standards and methodologies to water delivery facilities operated by the Bureau of Reclamation and its local partners.

Bureau of Reclamation Position on NLSP Applicability to Reclamation Facilities

Prior to the release of the draft Report, the Bureau of Reclamation circulated an internal memo regarding (non-) applicability of the Levee Safety Act ("Act") to Bureau of Reclamation canals. The memo noted that the Corps' interpretation of the Act included Reclamation canals.

Reclamation consulted the Interior Department Solicitor's Office and was told the provisions of the Act do not apply to Reclamation. The Solicitor determined the Act applies to levees defined as embankments providing protection relating to seasonal high water and other weather events. In contrast, Reclamation canals are designed to deliver water.

Additionally, the Act does not include inspection of Reclamation canals among the responsibilities of the Secretary of the Army. The test of agency jurisdiction assertion over another agency requires a clear congressional statement of intent that one agency have jurisdiction over another.

In this case, there is no clear statement of intent that the Secretary of the Army have jurisdiction over Reclamation regarding levees or canals. Further, there is no indication in the Act that Congress intended to subject Reclamation to the jurisdiction of the Secretary of the Army.

We agree with the Department of the Interior's and Reclamation's position.

Concerns of Western Water Users

There is a need to address deterioration of aging flood control facilities and preventing failures like the one which occurred in New Orleans. It should be an immediate national priority.

However, after reviewing the NCLS' recommendations in detail, we have critical concerns.

(1) The approach is overly broad.

(2) *It mandates new standards that would apply to existing Bureau of Reclamation water delivery facilities.*

(3) The focus should be on control facilities that pose actual risk to life or property in the flood plain.

(4) The Act was intended to deal with levees in and around New Orleans into which flood waters were pumped to be conveyed away from the low points in the city.

(5) Legislation should not define "levee" as used in the Act which created the NCLS.

(6) The legislation should only address a program for "levees" as that term is traditionally understood, with the embankment sections of water delivery canals and dams excluded.

Canals are designed and engineered different than levees. Applying flood control levee standards to water delivery canals is a non-sequitur. It will be expensive and for many, unaffordable. The nation-wide inspection program and new project condition and maintenance standards required in the legislative proposal would in most cases be duplicative and undermine existing operation and maintenance (O&M) standards and inspection procedures built into Reclamation contracts for both reserved and transferred facilities. The cost increase, both federal and non-federal, in almost every case would provide no increase in public safety.

There would be a potential for greater liability to water project operators because applying levee standards not meant for canal delivery structures would make compliance difficult, if not impossible, due to the excessive costs of rebuilding such structures. Although the draft legislation would authorize financial assistance to non-federal entities responsible for the maintenance of federally-owned facilities, it is not clear how or when that assistance would be realized.

Finally, and perhaps most important, Congress and this Committee recently provided new authority to Reclamation through *P.L. 111-11*, signed into law in March 2009. The law addresses aging canal systems in urbanized areas of the West. These authorities were proposed by Senate Majority Leader Harry Reid (D-NV) who in early 2008 introduced a bill (S. 2842) designed to make aging federally-owned canals safer across the West. Reclamation is inspecting urban area canals. This program for canal safety addresses the risk of canal failure in areas of highest risk. The NLSP should not duplicate or hinder this effort with more layers of federal bureaucracy.

The examples of the negative impact of the NLSP on irrigation projects with federally owned facilities in Arizona are:

1. Salt River Project, Maricopa County, Arizona
   - Reclamation project
   - 131 miles of canals
   - 30 miles of "urban" canals
   - Regular periodic inspections of canals
   - "Urban" canals have been inspected by Reclamation within the last year

2. Yuma County Water Users' Association, Yuma County, Arizona
   - Reclamation project
   - 60 miles of canals
   - 14 miles of "urban" canals

- Periodic canal inspection by Reclamation
- "Urban" canals have been inspected by Reclamation within the last year

3. North Gila Valley Irrigation and Drainage District, Yuma County, Arizona
   - 6,587 authorized irrigable acres
   - 2.5 employees
   - 20 miles of canals
   - 0 miles "urban" canals
   - Regularly safety inspected by Reclamation

Conclusion

In the American West, water supply systems are essential components of communities, farms, and the environment. These facilities are an integral part of the nation's food-production system and their consistent operation helps ensure our farmers' ability to provide a reliable and secure food supply for our own citizens and the rest of the world. Population growth, environmental demands and climate change are placing an unprecedented strain on aging water storage and conveyance systems designed primarily for agricultural use. The NCLS, with no membership or representation from Reclamation or Reclamation states in the West, represents a real and significant threat to the continued operation of the canals with no additional public safety benefit.

Our members have a long standing tradition of good working relationships with the Bureau of Reclamation and have supported updating Reclamation guidelines for analyzing projects to include considerations for urbanization and other effects that did not exist when these facilities were originally designed many decades ago. However, one-size still does not fit all, and blanket inspections and expensive, nonsensical standards for all Reclamation water delivery facilities are not appropriate or cost-effective. Further, many local districts do not have the financial capability to conduct required repairs or upgrades to their facilities to comply with a national levee standard on their canals, resulting in little or no commensurate increase in public safety. We believe this Committee and Reclamation have the appropriate knowledge and tools to develop strong safety standards for our water supply systems and should not be subjected to a "one size fits all" approach by the NCLS.

Paul Orme
General Counsel To
Central Arizona Irrigation and Drainage District
Maricopa – Stanfield Irrigation & Drainage District
New Magma Irrigation and Drainage District

Testimony Before the U.S. House of Representatives
Water and Power Subcommittee
Oversight Hearing on
"Creating Abundant Water and Power Supplies and Job Growth by Restoring Common Sense To Federal Regulations"
April 5, 2011

My name is Paul Orme and I am an Arizona Attorney representing three irrigation districts which receive irrigation water through the Central Arizona Project. Combined these three districts total over 200,000 irrigable acres in Pinal County, Arizona and utilize approximately 60% of the agricultural water delivered annually through the CAP.

These remarks concern the Navajo Generating Station (NGS), located near Page, Arizona, and the emissions control options being considered for improving visibility in that area which includes the Grand Canyon National Park. The Environmental Protection Agency (EPA) is in the process of determining the Best Available Retrofit Technology (BART) to reduce nitrogen oxide (NO_x) emissions at NGS. Litigation has also been filed by a coalition of environmental groups on these same visibility standards, which may or may not be partially driving this process.

EPA's ultimate BART decision will significantly impact the people and economies in and around Page, including the Hopi and Navajo Reservations. Their stories deserve to be heard and are being told by others. My focus will be the impact in the farm communities in Central Arizona.

NGS is the source of power needed to deliver the major share of Arizona's entitlement of Colorado River water over 300 miles via the Central Arizona Project (CAP) aqueduct from Lake Havasu to Tucson. Twenty four percent of the output of the plant is held by the United States Bureau of Reclamation.

The majority of water delivered through the CAP aqueduct is used by farmers. In a typical year, non-Indian agriculture uses nearly 50% of the total water delivered through the CAP. Agriculture water for Indian use adds another 200,000 acre feet to the total. Vital to agriculture's future in Arizona is access to a low cost and reliable supply of water. Some of the emission control options being considered by the EPA at the Navajo plant could render CAP water an uneconomical water resource option for agriculture. And for those farmers unable to access water resources other than CAP water, these regulatory requirements would put agriculture's viability as a business in jeopardy. Family farmers, irrigation districts, associated farming and

agricultural businesses, and the local economies of several farming communities in Central Arizona face significant impact and economic hardship should the cost of emission controls at NGS render CAP water unaffordable for agricultural use.

Currently two emission control options are being considered: 1) low NO_x burners; and 2) selective catalytic reduction (SCR) with bag houses to collect particulates, options with a significant difference in associated costs, but with air visibility results imperceptible to the human eye. If the EPA selects the more costly option for BART, it is possible the existing owners of the plant will decide to shut it down, requiring CAP to find an alternative source of power resulting in water costs entirely beyond the capability of agriculture to pay. For a variety of reasons, a decision to shut down NGS would be the worst possible result for Arizona and the CAP.

CAP estimates that the impact to energy charges within the water rates to install the low NO_x burners at NGS are in the range of $0.50 per acre-foot. This is a manageable increase in exchange for a significant reduction on NOx emissions. Conversely, the SCR treatment is estimated to have an impact of over $16.00 per acre-foot. An increase of $16.00 per acre-foot will have a significant cascading negative impact on agriculture, the economy and environment of Central Arizona. Farmers will turn to increasing the use of non-renewable groundwater supplies and some will discontinue farming. Local businesses that support agriculture will suffer, aquifer levels will decline with related degradation of the water quality , and increased unemployment can be expected due to agriculture-related job losses during one of the worst recessions experience by our country.

The introduction of CAP water as a renewable water supply to Central Arizona has benefited the agricultural economy and the State of Arizona – by assisting the agricultural user in meeting regulatory objectives to reduce groundwater use, ensuring long term availability of groundwater resources as a resource for future drought conditions, and through a reliable water supply helping to sustain economic growth and vitality of the agricultural communities that depend upon agriculture for their livelihoods.

For example, one of my clients is the Maricopa-Stanfield Irrigation & Drainage District (MSIDD) located in Pinal County Arizona. That District pumped between 300,000 – 400,000 acre-feet of groundwater per year before the introduction of CAP water in the late 1980's. During calendar year 2010, MSIDD pumped a total of 81,000 acre-feet while providing irrigation water services to over 70,000 acres. CAP water during the same year constituted 70% of total water deliveries, or approximately 200,000 acre feet. Should water costs increase by $16 per acre foot as predicted through the installation of the SCR technology and bag houses, irrigation districts such as MSIDD will resume groundwater pumping as a less costly option for the farmers served by this District. The 200,000 acre-feet of CAP water that was used by the District in 2010 will be partially replaced with less expensive groundwater.

To add further perspective, since 1987 MSIDD has delivered 3.8 million acre feet of renewable CAP water, essentially preserving a like amount of groundwater in District aquifers for drought purposes. Where historically during the 1970's and 1980's there was significant overdraft of the aquifer within MSIDD boundaries and regularly occurring subsidence, today the aquifers in

Central Arizona have stabilized or rebounded underlying those agricultural lands that have had access to CAP water. Should the CAP water become uneconomic to use due to NGS emission controls, aquifer overdraft and possible subsidence will return. The irony of the situation is that two epic and very successful Federal and State policies that were implemented in Central Arizona in the 1980's, the CAP Enabling Act and the Arizona Groundwater Management Act, originated to reduce groundwater overdraft and large scale pumping in Central Arizona. Now, if the EPA requires SCRs and bag houses on NGS, large scale groundwater pumping in central Arizona will return.

If the EPA restrictions are fully implemented, MSIDD estimates agricultural lands will shrink by 35-50% reaching upwards of 35,000 acres. With anticipated urban growth in the area over the next 50 years, water supply and water quality problems may be further exacerbated due to over-pumping in the near term.

For a typical farmer in Central Arizona, the cost of purchasing and delivering water is the single highest operating expense, comprising over 20% of the total expense to operate a farm. In order for the farmer to remain competitive, it is essential that all operational costs are managed closely. Cost increases not related to the agricultural market are difficult for the farmer to pass on to the consumer. With increased water costs, farmers will be forced to absorb those costs directly without the ability to pass on those cost increases. A $16 per acre-foot increase in water costs equates to a cost increase of over $50 per acre based on a farm using 4.5 acre feet per acre of water per year, and assuming 70% of the water is from the CAP. For a 1,000 acre farm, the total cost increase would be over $50,000. Crops typically grown in this region are of the variety that competes on the world market. There is very little room to pass on any cost increases due to the nature of this highly competitive market. Furthermore, the $16 per acre-foot will have the same impact on all the farmers in the CAP including the Native Americans sector.

The impacts to an irrigation district such as MSIDD are also substantial. MSIDD estimates that almost 75% of its entire budget is devoted to water costs, both CAP and groundwater. Of those costs, 95% is energy. Should EPA require the SCR control option be employed, MSIDD would be facing a budget increase of over $3.0 million. It is this cost increase that is passed along to farmers. Should NGS be shuttered, CAP estimates that replacement energy costs would add $30 - $115 an acre foot to the price of water, or a 60 – 200% cost increase for MSIDD, and all CAP agricultural water users.

Arizona and western U.S. water policies are extremely complicated and interwoven throughout all water use sectors. In 2004, the Arizona Water Settlements Act was signed into law. This comprehensive act had several components associated with it in ensuring further certainty and reliability as it came to water resource management and planning in Arizona. One such component resolved a long standing dispute on determining the extent of the water rights associated with the Gila River Indian Community (GRIC). Substantial time and effort was spent by the federal government, Gila River Indian tribes, cities, and irrigation districts in negotiating a workable solution for all parties. The agricultural sector provided the largest allocation of water to settle the GRIC water claims. With the relinquishment of the long term CAP water allocations, the agricultural sector was to receive in turn an adequate and affordable supply of

CAP water through the year 2030. The Tribes received assurance of affordable CAP water in lieu of free Winters Rights water. Under the SCR emission control options proposed by the EPA, the principles associated with the assurance of affordable CAP water for agricultural use will be violated. Consequently, an uneconomical CAP water source will have far reaching impacts not only to the individual Indian and non-Indian farmers, but may also have the potential to undermine the water settlement agreement. It will certainly give potential parties to future water settlements pause, if one agency of the Federal government (EPA) can undo benefits agreed to by another agency (DOI) before the ink is barely dry on the settlement agreement.

Unplanned or unforeseen adverse economic impacts due to catastrophic natural events are well understood risks that farmers accept as a cost of doing business. Farmers, where possible, protect the business by insuring for such occurrences. Adverse economic impacts that are purposefully planned without consideration on a broader scale on how those actions impact others are careless and irresponsible. Farmers going out of business, irrigation district and farming related job loss, and local communities economies harmed as a result of the questionable emission control options currently being considered at NGS are major economic implications for Central Arizona. Pinal County's economy will be hit particularly hard, with some of the nation's most productive farmland going fallow. The EPA's emission control options will have real impacts directly on many people's livelihoods not only on the Hopi and Navajo Reservations in Northern Arizona and in the Town of Page, but also on the farm and tribal communities of Central Arizona.

We urge the House Water and Power subcommittee to recognize the damaging economic, social and environmental impacts these actions from the EPA may have on the agriculture industry in Central Arizona.

Thank you for the opportunity to provide the Subcommittee with this testimony.

American Farmland Trust
SAVING THE LAND THAT SUSTAINS US

Jon Scholl
President
American Farmland Trust

Testimony on "Creating Abundant Water and Power Supplies and Job Growth by Restoring Common Sense to Federal Regulations"

To the
U.S. House of Representatives Committee on Natural Resources
Subcommittee on Water and Power

April 5, 2011

Good Afternoon,

Chairman McClintock, Ranking Member Napolitano and other Members of the Committee, thank you for inviting me to testify today. My name is Jon Scholl. I am the President of the American Farmland Trust headquartered in Washington, DC. I am a partner in a family farm in McLean County, Illinois.

American Farmland Trust is an organization that has for the last thirty years worked at the intersection of agriculture and the environment. We work to protect farmland and promote sound stewardship while also looking out for the economic viability of agriculture. Before joining American Farmland Trust, I had the privilege of serving for four years as the Counselor to the Administrator for Agricultural Policy at the United States Environmental Protection Agency during the Administration of George W. Bush. Before that, I worked at the Illinois Farm Bureau for 25 years in a variety of capacities.

As someone involved in my family's farm operation, a former EPA agricultural appointee, and the President of American Farmland Trust, let me be the first to say that our Nation faces serious environmental problems and that agriculture is both a contributor and a big part of the solution to these challenges. Having spent my life in agriculture, I know that farmers and ranchers across this country feel increasing environmental pressure as a result of these challenges, especially with respect to water. This pressure is coming on many fronts. It's not just coming from the federal government but also states, localities and increasingly corporations to whom we sell our products. I can appreciate why you have called this hearing and thank you for the opportunity to contribute to this discussion and the search for answers.

I. Defining the Challenge

I begin my testimony by acknowledging that there are legitimate environmental concerns associated with agricultural production. Let me give you just a few concrete examples using two recent reports published by the United States Department of Agriculture.

Last year USDA published the first report from their Conservation Effects Assessment Project for the 8 states encompassing the Upper Mississippi River Basin. In that report, USDA highlighted serious environmental concerns attributable to the agricultural sector. USDA found for example, 36 million acres (62 percent of cropped acres in the watershed) "are under-treated for one or more of sediment loss, nitrogen lost with surface runoff, nitrogen in subsurface flow, or total phosphorus loss," of which 8.5 million acres (15 percent of cropped acres in the UMRB) are critically under-treated and are among the most vulnerable cropped acres in the region; most of these acres have either a high or moderately high soil runoff or leaching potential" (United States Dept of Agriculture, National Resources Conservation Service, *Summary of Findings of the Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Upper Mississippi River Basin*, June 2010, page 7).

Likewise, USDA's report evaluating the Chesapeake Bay watershed shows that 19 percent of cropped acres have a high level of need for additional conservation treatment. "Acres with a high level of need consist of the most vulnerable acres with the least conservation treatment and the highest losses of sediment and nutrients." (United States Dept of Agriculture, National Resources Conservation Service, *Summary of Findings of the Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region*, March 2011, page 3). Using USDA's data, it is evident that agriculture has legitimate environmental concerns that require attention.

Interestingly, those same two reports also help point the way on how to move forward. Namely, both reports highlight the potential for substantial progress that agriculture could make in years to come. In the Upper Mississippi, for example, the report estimates that if we apply a combination of fairly common nutrient management and soil erosion prevention techniques onto the 36 million undertreated acres, compared to the baseline, runoff of sediment could be reduced by 21 percent, nitrogen by 44 percent, phosphorus by 27 percent and Atrazine by 18 percent. (United States Dept of Agriculture, National Resources Conservation Service, *Summary of Findings of the Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Upper Mississippi River Basin*, June 2010, page 7.) These gains would be in addition to the significant record of accomplishment already evident in the region. Existing application and treatment of conservation practices has reduced sediment loads by 37 percent, nitrogen loads by 21 percent, phosphorus loads by 40 percent, and Atrazine loads by 51 percent (*Id.* at p. 4).

In the Chesapeake Bay, USDA reports that adoption of additional conservation practices on undertreated acres would, compared to the 2003–06 baseline, "further reduce edge-of-field sediment loss by 37 percent, losses of nitrogen with surface runoff by 27 percent,

losses of nitrogen in subsurface flows by 20 percent, and losses of phosphorus (sediment-attached and soluble) by 25 percent" (United States Dept of Agriculture, National Resources Conservation Service, *Summary of Findings of the Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region*, March 2011, page 3). Again a focus on these acres would add to the impressive record of achievement that conservation has had on the landscape in which adoption of conservation practices has reduced edge-of-field sediment loss by 55 percent, losses of nitrogen with surface runoff by 42 percent, losses of nitrogen in subsurface flows by 31 percent, and losses of phosphorus (sediment attached and soluble) by 41 percent (*Id.*).

It strikes me that an important place to start in addressing agriculture's contribution to environmental problems is to recognize and learn from the gains that agriculture has made.

II. What needs to be done?

So what then needs to be done to both address environmental concerns and reduce burdens on producers – burdens which in some cases lead to significant financial stress? I would suggest three general courses to follow:

1) Build a "culture of collaboration"

Farmers are pragmatic and they will acknowledge that the industry can and should do more to address environmental concerns. But they also need to be recognized for the progress they've made. Virtually every farmer will tell you that he or she wants to leave their farm in better shape for their children than it was when they got it. In the many years I spent working at EPA during the Bush Administration, I can attest to spending many hours talking about, explaining and working through concerns that staff had with agriculture. It was quickly evident to me that these "regulators" cared deeply about the environment and wanted to assure that appropriate actions were taken to achieve their worthy objectives. While we shared common objectives, our approach to solving problems and the language we used to communicate about them were very different. My time working with state government likewise informed me that we need a lot more effort to overcome the barriers to achieving common objectives if we are to assure a productive agriculture and a clean environment.

A more recent field example also helps illustrate what I mean. About 18 months ago, the staff in EPA Region III began a series of inspections on farms in Bay states to assess environmental performance and compliance with state and federal laws. When EPA inspectors arrived in the driveways of farms in the Watson Run watershed in Lancaster County, PA, not many doorbells were answered. After an inauspicious start, the head of the county conservation district suggested that he might help in arranging visits and accompany the inspection team. With this local assistance all 24 farms were visited in relatively short order. What did they find? Things weren't perfect. Many of the farms did not have conservation and manure management plans required by Pennsylvania state law. But EPA staff also learned that conservation practices and stewardship

performance was significantly higher than what they expected, particularly in adoption of no till, soil testing and use of cover crops. In the end, what had started as a predictably contentious process that created ill will in the farming community turned into a more collaborative effort that showed that farmers are committed to good stewardship and the work yet to be done. An important outcome of all this is that the Lancaster County Conservation District is now implementing a program to ensure that farms are doing all they need to do, both in terms of practices and paperwork, using education, careful planning, follow-up, and, when necessary, compliance enforcement by the local district board. I believe this serves as a lesson in the value of collaborative action that can turn around an adversarial relationship to one of engagement. In the end, EPA needed local cooperation and guidance to do its job and local and state officials were able to use momentum created by the inspections to focus the attention of the community in a constructive manner.

2) Back up collaboration with action

I believe in that old adage that "actions speak louder than words." As a result not only do we need more talking, we need more action to create real collaboration.

One measure of action is the commitment the federal government applies to non-point sources under our water policies. Since 1988 the federal government has made a significant commitment to wastewater treatment and collectively has spent more than $30 billion dollars of the Clean Water State Revolving Fund which has wastewater as a primary purpose (Environmental Protection Agency, *FY 2011 Budget in Brief*, page 86). Indeed, in FY10 the federal government spent more than $2 billion in the CWSRF with large sums flowing to wastewater (Environmental Protection Agency, *FY 2012 Budget in Brief*, page 109). While that money no doubt is necessary, by comparison, EPA's section 319 non-point source funds measure in the millions, and in FY10 the federal government spent $200 million, with most of this money directed towards planning, not implementing (*Id* at page 89). While money is not the only measure and it is a difficult resource to come by in a tough budget environment, this disparity points out that we haven't really put a priority on solving non-point problems, certainly as compared to what we have invested in point source pollution issues.

Another way to translate collaboration into action is to work to reduce farmers' and ranchers' fears. I can't tell you the number of times I talk to producers and I am told that he or she doesn't want to collect data, implement practices voluntarily or participate in EPA monitoring for fear their actions will subsequently lead to additional regulation. American Farmland Trust is currently working, for example, in the Ohio River watershed with the electric power industry to develop a region-wide water trading system. Utilities would pay farmers to reduce nitrogen runoff and, in turn, those reductions would satisfy EPA and state level water pollution standards. This is a classic win-win scenario in which producers earn income, utilities avoid costlier compliance obligations, and society gains cleaner water. Yet many farmers have said that while they are attracted to the concept, they fear that as soon as they begin implementing nitrogen reduction practices, those practices will be used against them as the basis for further regulation. This is one example

of many I could give, the point of which is we must create regulatory certainty for producers so when they step up to help, they don't feel as though they will be contributing to the establishment of a new regulatory standard that different farms, climate conditions or evolving technology might not find workable.

A strong emphasis on a classical regulatory approach to farm conservation issues causes many farmers to fear the expensive, unmanageable and tangled web in which they might get caught instead of focusing their energy and resources on a more appropriate and natural desire to strive for continuous improvement in their operations. Incentivizing good behavior draws people into action; the threat of regulations makes them hide.

Last year American Farmland Trust supported a bill (HR 5509) by Congressman Goodlatte from Virginia and Holden from Pennsylvania that created safe harbors for conservation practice adoption in the Chesapeake Bay. Under this approach producers would be responsible for undertaking certain conservation practices but doing so relieves them of regulatory burdens. I encourage this Committee to explore changes like that in order to create collaboration through certainty.

3) Overcome unnecessary barriers

In addition to creating a culture of collaboration, we need to break down silos that send dramatically mixed signals to those whose behavior we seek to influence. Since the Chairman and Ranking Member are both from California, I use an example from your state. As all of us know the State of California has created, with voter agreement, a carbon cap and trade system. Under that system, the California Air Resources Board has the power to create offsets. This means that farmers and ranchers could be paid to capture and sequester carbon. One well known technique to do that is by creating methane digesters that destroy harmful methane gas generated from livestock manure. The Air Resources Board has in fact acknowledged the high value of digesters by approving them as one of California's first offset types. Yet while one arm of ARB approved use of digesters, another arm of ARB refuses to issue permits to build digesters over a concern they may violate NOx standards.

Commonsense dictates that something is wrong here. I believe we should be trying to examine the net environmental benefits of carbon versus potential NOx emissions. I believe a culture of collaboration, one of thinking with the parties involved about how to get things done, would have the federal and state governments working together to explore this problem and resolve it so that those digesters can be built. In fact, at a recent meeting with the EPA, I asked them to do just that – work outside the box, break down silos and help ARB solve this obvious problem. I would note that in the world of water, that sort of federal and state breaking down of silos and looking for ways to overcome barriers has lead to recent work in the Chesapeake Bay. USDA, the state departments of agriculture, state departments of environment and the EPA are all now working together in the Bay to tackle pressing environmental problems in which agriculture is part of the problem but also a key to their solution.

III. Finding a better way

I find the current level of contention between agriculture and those charged with protecting society's interest in a clean environment to be very sad. We share common objectives but we can't seem to get beyond classical means of dealing with pollution to creative and workable ways to engage each other. At American Farmland Trust, we know that there is a right way and a wrong way to work with farmers on environmental issues. The environmental challenges farmers and ranchers grapple with are complex, and difficult to identify and resolve. While we know that regulations have their place and indeed are sometimes necessary, we need to approach these issues differently because the classic 1970s-era regulatory approach to environmental clean-up is a poor fit for agriculture. Many of these laws, which have helped to clean our air and clean our water, were expressly designed to deal with industrial point source polluters. If we are entering a world in which non-industrial, non-point source pollution is now one of our central challenges then we must look to another approach.

It's critical to understand that protecting the environment is an important issue to farmers and ranchers. They feel the effects first, and often in their pocketbooks, if problems persist. They have a strong incentive to keep their land productive and clean. Building upon these natural and long standing realities of farm life while reaching out and seeking ways to build trust and cooperation are vital to the future success of our Nation's efforts to clean our air and water. We stand ready to assist in this worthy endeavor.

5.c. – Colorado River Environmental Issues

Governor's Representatives on Colorado River Operations
States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming

March 18, 2011

Via E-Mail and U.S. Mail

Mr. Larry Walkoviak, Regional Director
Attn: Mr. Dennis Kubly
Bureau of Reclamation
Upper Colorado Regional Office
125 South State Street, Room 7218
Salt Lake City, Utah 84138

Re: Comments—Draft Environmental Assessment: Development and Implementation of a Protocol for High-Flow Experimental Releases from Glen Canyon Dam, Arizona, 2011 through 2020

Dear Messrs. Walkoviak and Kubly,

On behalf of the seven Colorado River Basin states ("States"), we submit these comments on the Draft Environmental Assessment ("DEA") prepared by the Department of the Interior's ("Interior's") Bureau of Reclamation ("Reclamation") for the Development and Implementation of a Protocol for High-Flow Experimental Releases from Glen Canyon Dam, Arizona, 2011 through 2020 ("Protocol"). The DEA, along with its accompanying General Monitoring and Research Plan (public review draft) and Biological Assessment, were released for public review and comment on January 14, 2011. The comment period ends on March 18, 2011. Please consider these comments in finalizing the NEPA process for the Protocol and include them in the administrative record for the DEA.

States' Interests

The States have a significant interest in Reclamation's coordinated management of the Colorado River reservoir system as the States depend upon the system for water supplies, power production, recreation and other purposes, including, but not limited to, conservation of wildlife resources and habitat in the system. Decisions by Reclamation to adjust management of the system can potentially affect water supplies to various states, change power production along the system, boost or reduce recreation, and harm or enhance wildlife and other important natural resources.

A delicate balance of these interests among the States and with the federal government is governed by the "Law of the River" and are currently implemented through Reclamation's 2007 Environmental Impact Statement on the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lakes Powell and Mead and the associated 2007 Record of Decision ("2007 Interim Guidelines"). To avoid jeopardizing this balance, the States encourage Reclamation to avoid and minimize impacts to the States' interests from the proposed Protocol. This would be best achieved through Reclamation's continued, unaffected implementation of the 2007 Interim Guidelines.

Overview of the Comments

To assure the DEA sets forth sufficient information and analysis to determine whether the Protocol could result in significant impacts, the States recommend that Reclamation prepare a revised DEA to address the following issues:

- Revise the purpose and need to more clearly state the goals of the high flow experimental releases ("HFEs") and explain how the Protocol would achieve those goals.

- Better describe how HFEs would be coordinated with management under the 2007 Interim Guidelines and provide explicit assurance that HFEs would not interfere with existing management.

- Explicitly describe the potential impacts to humpback chub and present mitigation measures to avoid or minimize such impacts.

- Clarify that the Protocol is experimental and not a management plan, which would require legislative changes.

- Clarify and further explain Interior's process for deciding whether to conduct HFEs and how to incorporate input from the States.

- Clarify Reclamation's commitment to and justification for exploring, assessing, and if appropriate, incorporating the Rapid Response Approach to conducting HFEs during the life of the Protocol.

Clarification of Purpose and Need

The purpose and need of the DEA should more adequately present the goals of the Protocol and discuss how those goals would be met by the Protocol. The DEA provides that the "purpose" of the Protocol is:

> (1) to develop and implement a protocol that determines when and under what conditions to conduct experimental high volume releases, and (2) to evaluate the parameters of high-flow releases

> in conserving sediment to benefit downstream resources in Glen, Marble, and Grand Canyons.

DEA at 6. While, the "need" for the Protocol is:

> to take advantage of future sediment-enriched conditions in the Colorado River with experimental high flow tests that will improve the understanding of the relationships between high dam releases of up to 45,000 cfs and sediment conservation. The information developed through this action will assist Interior in making future decisions on when and how to conduct multi-year, multi-event high flow experimental releases and how to evaluate benefits to downstream resources.

Id.

The purpose and need for the proposed Protocol presuppose that enhanced sediment deposition is necessary for the Colorado River downstream from Glen Canyon. The DEA, however, does not clearly explain why greater sediment deposition is important. To assure the credibility of the Protocol, therefore, the revised DEA should further explain the need for greater sediment deposition, including information on the current status of sediment deposits downstream from Glen Canyon and how those are insufficient or otherwise negatively affecting other resources.

In particular, the revised DEA should clearly state the goals the Protocol is trying to achieve. For example, is the Protocol trying to enlarge beaches for recreational uses, generate species habitat, or achieve some variation of these or other objectives? Once the goals of greater sediment deposition are defined, Reclamation should determine if they are reasonable. In doing so, the NEPA analysis would be strengthened by including an explanation of how Reclamation plans to balance the importance of various resources in the Colorado River system and how a choice to increase sediment deposition can be reconciled with the costs of doing so, both in terms of potential impacts on resources and with regard to monetary costs.

Next, the revised DEA should assess whether sediment deposition would likely achieve the reasonable goals determined by Reclamation. For example, if the goal of the Protocol is to increase the humpback chub population downstream from Glen Canyon, how would sediment deposition achieve that goal? To this end, the DEA should provide a more specific explanation of the Protocol's goals and how those goals would be met through such action.

Lastly, the revised DEA would benefit from added discussion on why the Protocol is proposed for 10 years versus some other amount of time, such as 5 years. Reclamation's reasoning for choosing a 10-year timeframe for the Protocol needs to be explained and substantiated.

Consistency with 2007 Interim Guidelines

The DEA provides that "annual release volumes would follow" the 2007 Interim Guidelines. DEA at ix, 25. The States have significant interests in the correct and continued implementation of the 2007 Interim Guidelines. Thus, it is important that the DEA expressly recognize that the Protocol would not interfere with annual releases based on the Interim Guidelines, and instead be implemented subject to the Interim Guidelines.

To ensure that there would not be any interference with the 2007 Interim Guidelines from the Protocol, the revised DEA should clarify how the Protocol would be implemented to avoid interference. In particular, the DEA should explain and provide examples of how water year releases from Glen Canyon Dam will continue to comply with the Interim Guidelines both before and after a high-flow experimental release ("HFE") under the Protocol. Furthermore, the Protocol should provide assurance that, if an HFE is triggered, it will fit within the coordinated operations for that year, as determined by the Interim Guidelines.

Consistent with the Interim Guidelines, the revised DEA should also identify if and when there may be operations that would prevent an HFE in a particular year. For example, the DEA should indicate whether an HFE would be contemplated if operations were in the Lower Elevation Balancing Tier defined by the Interim Guidelines. If an HFE would be contemplated under the Protocol during such operations, the DEA should explain how that HFE would fit within the coordinated operations determined by the Interim Guidelines. If an HFE would not be contemplated then, the DEA must present that as a limitation to the Protocol.

Besides these concerns, the revised DEA would benefit from greater explanation of how operations are currently conducted under the Interim Guidelines so the public can better understand whether and how the Protocol may affect current operations. In that explanation, the DEA ought to specify whether reference to "annual releases" refers to releases made during the "water year" or the "calendar year." *See, e.g.*, DEA at ix; 25 (referring to "annual releases").

Avoidance of Impact to Humpback Chub

The DEA indicates that HFEs may have impacts on the humpback chub, which is listed as an endangered species under the Endangered Species Act ("ESA"). The States are interested in achieving recovery of the humpback chub population in the Colorado River under the ESA, while maintaining existing operations at

Glen Canyon Dam according to the 2007 Interim Guidelines and consistent with other elements of the "Law of the River." To assist with recovery, and to demonstrate explicit compliance with NEPA, potential impacts to humpback chub should be clearly analyzed in the revised DEA, and mitigation measures to avoid or minimize such impacts ought to be discussed.

The DEA identifies the following potential impacts on the humpback chub:

- Reduction in foodbase in nearshore and backwater habitats for humpback chub. DEA at 64-66, 76, 89-90.
- Displacement of young humpback chub from nearshore nursery habitat. *Id.* at 76-81.
- Increased rainbow trout population resulting in predation on and competition with humpback chub. *Id.* at 76, 81-83.
- Reduction in foodbase for humpback chub, including reduced numbers of flood-susceptible invertebrates, from consecutive HFEs. *Id.* at 64-66, 76, 89-90.

Many of these potential impacts on the humpback chub could result in mortality of affected humpback chub.

Some of these potential impacts on humpback chub are not well understood. *See e.g., id.* at 68, 79, 80, 81, 83, and 84. Because of the uncertainty concerning potential impacts on humpback chub, Reclamation should provide more analysis to support its conclusion that such impacts would not significantly affect the humpback chub population.

Also, to the extent Reclamation relies on the implementation of mitigation measures to avoid or reduce to insignificant levels potential impacts to the humpback chub, these measures should be discussed in the DEA. Reclamation currently provides in the DEA that it intends to implement non-native fish control during 2011 through 2020 to provide mitigation for increased predation and competition on humpback chub by trout. DEA at 7, 83. However, direct discussion of these mitigation measures in the DEA is lacking as well as any analysis of their potential effectiveness. Instead, the DEA simply refers to another draft EA in progress (the "Non-native Fish Control EA") as the source for further explanation and analysis. *Id.* at 7. It is important for the measures intended to mitigate for impacts from the Protocol to be included in the DEA.

If Reclamation intends to tie the EA for the Protocol to the Non-native Fish Control EA, then that should be clarified in the DEA for the Protocol. Moreover,

the DEA for the Protocol should recognize that the Protocol is dependent upon the successful implementation of non-native fish control measures as described and analyzed in the Non-native Fish Control EA. If those measures are not implemented, then the Protocol must not be implemented either, as it draws from and is dependent upon those measures and the Non-native Fish Control EA.

To further avoid potential significant impacts to the humpback chub resulting from implementation of the Protocol, the States request that Reclamation delineate a population trigger for humpback chub, consistent with biological and operational input from the States, below which HFEs would be suspended until the cause of the population decline is better understood. Because of the uncertainties associated with accurately assessing the humpback chub population, especially numbers of young humpback chub, the States also request that Reclamation adopt a similar trigger for the trout population, again consistent with biological and operational input from the States, above which HFEs would be suspended until the increase in trout population and its associated impact on the humpback chub population are better understood. Specifically, a trout population trigger would serve as an "early warning system" for the protection and recovery of the humpback chub given that the best available information indicates trout populations could benefit from or increase with implementation of the Protocol and trout are known to prey on and compete for food and habitat with the endangered humpback chub.

In light of uncertainties associated with determining how many trout can exist in the Colorado River near the confluence with the Little Colorado River without impeding the survival and recovery of the humpback chub, the revised DEA should also include a commitment to perform a comprehensive science evaluation of trout population effects on the humpback chub as a result of the ongoing implementation of the HFE Protocol. Such evaluation should be conducted following Protocol implementation for an interim number of years, and be used to inform whether the Protocol should continue or be modified or suspended to insure that the unknown effects of increased trout populations as a result of HFEs do not cause jeopardy to or stunt the survival and recovery of the endangered humpback chub.

Besides these protection measures, Reclamation should also explore and discuss in the revised DEA additional ways to mitigate potential impacts of the Protocol on humpback chub.

Explanation of Experimental Nature of EA

The DEA considers implementing HFEs in excess of power plant capacity in the spring (March/April), fall (October/November), or both to "evaluate the parameters of high-flow releases in conserving sediment to benefit downstream resources in Glen, Marble and Grand Canyons." DEA at 6. Consistent with

HFEs that have occurred in the past, the States remain concerned that bypassing the power generating facilities is not supported by the Law of the River or the express language in the 1996 Record of Decision for Glen Canyon Dam. We are also concerned about the financial impact that such bypass actions could have on the Upper Colorado River Basin Fund as well as on customers to power from the facility.

The States have "not objected" in the past to one-time, experimental HFEs from Glen Canyon Dam in the interest of identifying answers to scientific questions and better understanding the environment downstream of Glen Canyon Dam. Should the Secretary of the Interior decide to proceed with the Protocol as described in the DEA, the Protocol's revised DEA should further clarify that accomplishing HFEs pursuant to the Protocol are dependent on the availability of funding, planning and resources necessary to test hypotheses, obtain the data and analyze the science that underlies the purpose and need for implementing the Protocol at this time. Furthermore, the States maintain that implementing HFEs in the future as a viable management practice (as opposed to an experimental action) will require amendment to relevant law of the river to account for a new purpose for dam operations and to allow for restitution to the Basin Fund and power customers.

Clarification of Decision-Making Process in EA

The decision and implementation component of the Protocol is described at DEA § 2.2.4.3, p. 36-37, and illustrated in Figure 5. In deciding whether or not to conduct an HFE during the spring or fall HFE "windows," Interior first obtains and analyzes output from model runs to determine if sediment and hydrology conditions are suitable for an HFE of a given magnitude and duration. DEA at 36. Because the model only considers water and sediment, Interior staff are next tasked with considering the potential effects of the HFE on other resources. *Id.* at 38. After considering "the status and trends of key resources," Interior staff would make a recommendation to Interior. *Id.* Interior would then consider the staff recommendation and resource status, and may also consider input from the Adaptive Management Work Group before making a decision to conduct or not conduct an HFE. *Id.*

Besides indicating that Interior and its staff would be considering the potential effects of the HFE on other resources, the DEA fails to discuss *how* potential effects of the HFE on other resources would be considered in deciding whether or not to conduct an HFE. *See id.* For this reason, the revised DEA should explain what resources would be considered by Interior, how potential effects on those resources would be determined and finally, how those potential effects would be weighed in Interior's decision-making process.

As part of Interior's clarification on how potential effects to resources would be considered, Interior should further specify where the decision to conduct an HFE pursuant to the Protocol will be made and reported. This is unclear in the current DEA. *Id. at 38.* Given the fact that the Annual Operating Plan for Colorado River Operations is a reporting and not decision-making document, the revised DEA should make clear that decisions regarding whether or not to implement an HFE will be made outside the AOP reporting process.

Further, Interior should clarify in the revised DEA how it plans to include the States and other stakeholders as part of the decision-making process. Because potential effects to resources may be evaluated and weighed differently by Interior, the States, and other stakeholders, it will be important to obtain input from these parties prior to making a decision whether to proceed with an HFE. As a result, Interior should develop a framework for consultation to solicit input from the States and other stakeholders as part of its decision-making process.

Clarification of the Rapid Response Approach in the Proposed Action

The States support Reclamation's inclusion of the Rapid Response Approach ("RRA") as part of the Proposed Action for the Protocol. *See* DEA at 26-27. As currently described, however, the DEA confuses how the RRA will actually be analyzed and implemented if deemed appropriate during the life of the Protocol. The DEA recognizes potential merit in certain elements of the RRA, and includes a description of the RRA in the Proposed Action Section. *DEA at 27.* Such description, however, is described as being provided by unidentified "authors." *Id.* Furthermore, the DEA appears to ultimately reject further consideration of the RRA as part of this NEPA process due to "several issues, concerns and information needs that must be addressed prior to testing." *Id.* Although the DEA references a process for addressing issues and concerns with the RRA during the initial stages of implementing the Protocol, it expressly notes that "conducting [the storage and release and rapid release approaches] in the same time frame could produce confounding results and compromise the experiment." It further implies that additional environmental compliance will be needed before the RRA can be implemented. DEA at 28. As such, the DEA does not make clear how the meritorious elements of the RRA will be incorporated into the HFE Protocol in a manner consistent with the statements made in the environmental compliance documentation. Accordingly, Reclamation's commitment to and justification for exploring, assessing and, if appropriate, incorporating the RRA during the life of the Protocol should be clearly stated in the revised DEA.

Conclusion

The Basin States thank you for the opportunity to provide these comments on the DEA for the proposed HFE Protocol. As the States that would be affected by Reclamation's proposal, we have a particular interest in avoiding potential impacts from the Protocol and ensuring its success. In this effort, we ask that

Reclamation please consider the above comments and revise the DEA to address them. We further ask that Reclamation circulate the revised DEA after addressing these and other comments to allow us and the public the opportunity to review the DEA before it becomes final, and, thereby, help insure that NEPA's twin goals of informed decision-making and informed public participation continue to be met.

Sincerely,

[*Signatures on next page*]

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State Engineer
State of Wyoming

cc: Anne Castle, Assistant Secretary, Water and Science, U.S. Department of Interior
Michael L. Connor, Commissioner, U.S. Bureau of Reclamation
Lorri Gray-Lee, Regional Director, U.S. Bureau of Reclamation

Desert Landscape Conservation Cooperative

Your Invitation...
Land managers are faced with increasing management challenges such as land use conversion, sensitive species protection and recovery, invasive species, water scarcity, and a range of other complex issues—all of which are amplified by climate change. In response, the Bureau of Reclamation (Reclamation) and the U.S. Fish and Wildlife Service (Service) are partnering to develop the Desert Landscape Conservation Cooperative (LCC). This effort represents a broad vision of conservation that includes working with partners across landscapes to ensure that the necessary science capacity is in place to successfully address these 21st-century conservation challenges. We are in the process of reaching out to resource managers and others within the Desert LCC, and invite you to contact us (contacts provided below) if you are interested in participating or would like more information.

Sonoran Desert in Arizona. Photograph by Mima Falk, USFWS

What is a Landscape Conservation Cooperative?
In 2010, the Department of the Interior developed a plan for a coordinated, science-based response to climate change impacts on land, water, and wildlife resources. Landscape Conservation Cooperatives (LCCs) are the applied science branch of this strategy. Each LCC will function in a specific geographic area, and will form a national – and ultimately international – network. The Desert LCC will be a self-directed partnership managed by a steering committee comprised of Federal agencies, States, Indian tribes, non-governmental organizations, universities, and Mexican government agencies.

How will the LCC Help?
Through the steering committee and associated working groups and sub-committees, the LCC will facilitate the delivery of applied science to inform resource management decisions that address climate change and other regional scale stressors. The LCC will facilitate an on-going dialog between scientists and land managers to create a mechanism for informed conservation planning, effective conservation delivery, applied research and monitoring, and adaptive management. The LCC partnership will build upon existing collaboration, complementing these efforts to support science delivery.

Geography of the Desert LCC
The Desert LCC encompasses portions of five states in the U.S. (Arizona, California, Nevada, New Mexico, and Texas) and ten states in Northern Mexico (Baja California, Sonora, Chihuahua, Sinaloa, Durango, Coahuila, Nuevo Leon, Zacatecas, Nayarit, San Luis Potosí, and Aguascalientes). The area is topographically complex, including three major deserts (Mojave, Sonoran, and Chihuahuan), grasslands and valley bottoms, and isolated mountain ranges. Elevations range from near sea level to over 10,000 ft. The richness of the topography supports equally diverse species composition and habitat for native plants, fish and wildlife, including many endemic species that are extremely susceptible to climate change impacts.

The Desert LCC contains several large river systems, including the lower Colorado, Gila, Rio Grande, San Pedro, Sonora, Yaqui, and Conchos Rivers. The Colorado River Basin is one of the most critical sources of water in the West. The Colorado River and its tributaries supply water for 30 million people, irrigation of nearly 4 million acres of land, and hydropower facilities that generate more than 4,200 megawatts, helping to meet the power needs of the West. The Colorado River is also the lifeblood for at least 15 Native American tribes, seven National Wildlife Refuges, four National Recreation Areas, and five National Parks.

Resource Management Issues
The Desert LCC will develop science capacity to help resolve resource management issues identified by the steering committee. Examples of resource management issues include:

- The effect of long-term drought on the composition, abundance, and distribution of species.
- The effect of reduced water availability on vegetation, wildlife and human populations.
- Changes in ecosystem productivity, structure, and composition resulting in changes in the rate of carbon sequestration and amount of carbon stored as biomass.

- Change in fire frequencies and intensities, and the relationship to invasion of non-native grasses.

- Effects of warming on insect outbreaks and tree mortality.

Benefits of participating in the Desert LCC

Participants in the Desert LCC will be able to leverage the contributions of each of the partners to ensure a flow of science information and resources across the management interests within the Desert LCC region. The Desert LCC Steering Committee will determine how to allocate resources made available by partners (funding and/or staff support) for science development, and will identify funding opportunities that address the highest priority science needs shared by the partners. Additionally, the LCC will disseminate science information generated by independent partner efforts in pursuit of their resource management objectives. In this way, LCCs will aggregate capacity, create synergies, and reduce duplication of efforts.

Next steps for the Desert LCC

Over the past year, Reclamation and the Service reached out to other Federal land managers, States, Indian tribes, non-governmental organizations, universities, and Mexican government agencies to begin the initial steps of establishing the Desert LCC. These steps included:

Lower Colorado River Habitat.
Photograph Courtesy of Bureau of Reclamation

- A series of outreach meetings in Arizona, California, Nevada, New Mexico, and Texas.

- Formation of a scoping team for developing ideas for LCC governance.

- A rapid assessment of science needs, gleaned from existing documents and input from the outreach meetings.

Your invitation to join the Desert LCC partnership

The Desert LCC Steering Committee will be formed in the spring of 2011, and this governing body will then establish permanent working groups and sub-committees, based on input from partners. If you are interested in participating in the Desert LCC, please join us!

For Further Information, Contact

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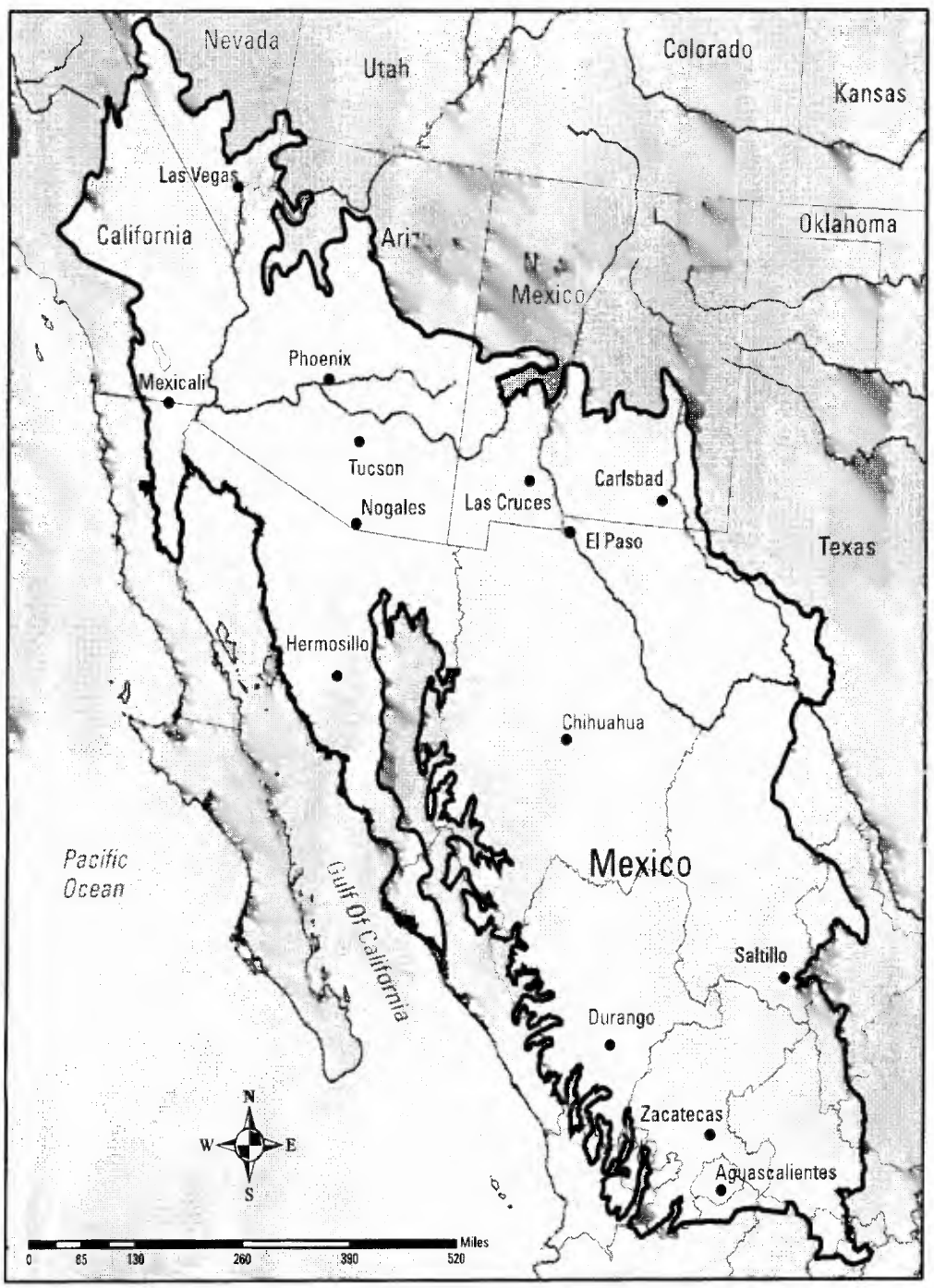

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