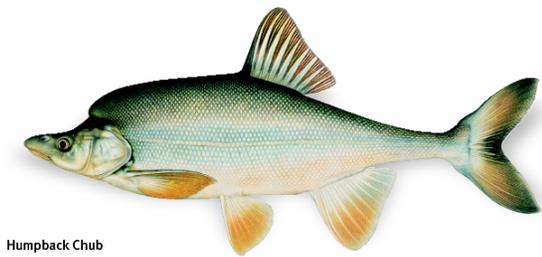


Colorado Pikeminnow



Humpback Chub

DEMOGRAPHIC CRITERIA FOR RECOVERY

DOWNLISTING

DELISTING

Over a 5-year monitoring period:

- Maintain the six populations (“no net loss”)
- One core population in upper basin > 2,100 adults
- One core population in lower basin > 2,100 adults

Over a 5-year monitoring period:

- Maintain reestablished populations in Green River and upper Colorado River subbasins, each > 4,400 adults
- Maintain established genetic refuge of adults in lower basin
- Maintain two reestablished populations in lower basin, each > 4,400 adults

Over a 5-year monitoring period:

- Maintain the upper basin metapopulation
- Maintain populations in Green River and upper Colorado River subbasins (“no net loss”)
- Green River subbasin population > 2,600 adults
- Upper Colorado River subbasin population > 700 adults
- Establish 1,000 age 5+ subadults in San Juan River

Over a 5-year monitoring period:

- Maintain reestablished populations in Green River subbasin and EITHER in upper Colorado River subbasin or in San Juan River, each > 5,800 adults
- Maintain established genetic refuge of adults in Lake Mohave
- Maintain two reestablished populations in lower basin, each > 5,800 adults

Humpback Chub

For 3 years beyond downlisting:

- Maintain the six populations (“no net loss”)
- Two core populations in upper basin > 2,100 adults
- One core population in lower basin > 2,100 adults

Bonytail

For 3 years beyond downlisting:

- Maintain populations in Green River and upper Colorado River subbasins, each > 4,400 adults
- Maintain genetic refuge of adults in lower basin
- Maintain two populations in lower basin, each > 4,400 adults

Colorado Pikeminnow

For 7 years beyond downlisting:

- Maintain the upper basin metapopulation
- Maintain populations in Green River and upper Colorado River subbasins (“no net loss”)
- Green River subbasin population > 2,600 adults
- Upper Colorado River subbasin population > 1,000 adults OR Upper Colorado River subbasin population > 700 adults and San Juan River population > 800 adults

Razorback Sucker

For 3 years beyond downlisting:

- Maintain populations in Green River subbasin and EITHER in upper Colorado River subbasin or in San Juan River, each > 5,800 adults
- Maintain genetic refuge of adults in Lake Mohave
- Maintain two populations in lower basin, each > 5,800 adults

Status of Draft Report to the Congress By the Secretary of the Interior on Modifications to Title I Projects of the Colorado River Basin Salinity Control Act:

- Situation: The Senate Appropriation Committee report that accompanied the FY 2000 Energy and Water Appropriations Bill asked the Secretary to provide a report on the alternatives to meeting Treaty requirements without the YDP and actions the Bureau of Reclamation can take to reduce the high annual operation and maintenance costs. The Department of the Interior uses the submittal of this Report to seek additional authorities under Section 104 of the Colorado River Basin Salinity Control Act to meet those obligations in a more cost-effective manner.

Senate Report 106-58, dated June 2, 1999, at page 80, states: "*Colorado River Basin Salinity Control, Title I.* --The Committee has included a total of \$10,092,000 for the Colorado River Basin Salinity Control, Title I program. Budget constraints have forced the Committee to recommend that initiation of replacement of membrane elements at the Yuma Desalting Plant be deferred for fiscal year 2000. In addition, the Committee remains concerned about the high cost of keeping the Plant in a standby status. The Department is to provide a report to the Committee on alternatives to meeting Treaty requirements without the YDP, and actions the Bureau of Reclamation can take to reduce the high annual operation and maintenance costs."

Draft Yuma Desalting Plant Report by the Secretary of the Interior Report to the Congress -- continued

- Note: The U.S. and Mexican Sections of the International Boundary and Water Commission approved Minute No. 242 on August 30, 1973. The Minute amended the 1944 Mexican Water Treaty when approved by the governments of both countries.
- The agreed upon salinity management objective was to remove the influence of the Wellton-Mohawk I&DD saline agricultural drainage water from the water delivered to Mexico at the Northerly International Boundary (NIB). The WMIDD drainage water is shunted to the Cienega de Santa Clara through the Main Outlet Drain Extension (MODE). The remaining Yuma area agricultural drainage water continues to be included in the NIB deliveries. Minute 242 recognizes the drainage water reaching the River increases the River salinity as it flows from Imperial Dam to the NIB. The amount and concentration of that Yuma area drainage varies from year to year. The agreed-upon salinity management was to limit the increase in the flow-weighted average annual salinity between Imperial Dam and the NIB to no more than 115 parts per million (ppm), +/- 30 ppm.

Draft Yuma Desalting Plant Report by the Secretary of the Interior Report to the Congress -- continued

- The seven Colorado River Basin States have submitted comments on the draft report by Interior to the Congress. The States' comments reflect agreement that:
 - The first priority needs to be obtaining full operational readiness of the Yuma Desalting Plant (YDP) as soon as practicable, recognizing that additional Congressional appropriations need to be obtained to correct deficiencies, get the YDP fully operational and to operate the Plant.
 - The YDP is the primary measure authorized by Congress to minimize adverse effects on the use of Colorado River water. It continues to be the only permanent and definitive solution that provides protection to U.S. water supplies and improves the water quality of return flows so that they can be beneficially used by Mexico.
 - On account of the full use of the Lower Division States' entitlements within years in which a "normal water supply" determination has been made, little opportunity exists to lease water, e.g. enter into forbearance agreements, without competing with water users in those States.

Yuma Desalting Plant

U.S. Bureau of Reclamation's Estimation of the Cost Of Starting Up And Operating Yuma Desalting Plant



KEY COMPONENTS OF COST	RANGE OF COSTS	
Power Process Recovery Factor Plant on Stream Factor Amortization Period For Startup Costs Acre-Feet per year From Plant Acre-Feet per year of Blended Water Total Acre-Feet per year Produced	\$32/Mwh 85% 80% 10 Years 75,418 10,000 85,418	\$64/Mwh 73% 75% 5 Years 60,722 10,000 70,722
<p style="text-align: center;"><u>ESTIMATED ANNUAL COSTS</u></p> <p style="text-align: center;">Total Recurring O&M Costs <u>Annualized One-Time Startup Costs</u></p> <p style="text-align: center;">TOTAL ANNUAL COSTS</p> <p style="text-align: center;">Cost per Acre-Foot of Water</p>	<p style="text-align: center;">\$23.5 Million <u>\$ 2.6 Million</u></p> <p style="text-align: center;">\$ 26.1 Million</p> <p style="text-align: center;">\$ 305</p>	<p style="text-align: center;">\$28.7 Million <u>\$ 5.2 Million</u></p> <p style="text-align: center;">\$ 33.9 Million</p> <p style="text-align: center;">\$ 480</p>

Draft Yuma Desalting Plant Report by the Secretary of the Interior Report to the Congress -- continued

- Bottom Line: USBR doesn't want to operate the YDP due to operating expense – its is proposing leasing water from willing sellers on a year-to-year basis to provide a replacement water supply to offset the MODE flows
- Potential Sources Of Replacement Water To Meet Title I Objectives Presented in the Draft Report:
 - Forbearance Agreements (USBR's main emphasis)
 - Non-system Supplies From Groundwater & Other Sources
 - Investing In Advanced Irrigation Techniques To Reduce Use [as was done with the Wellton-Mohawk Irrigation and Drainage District to reduce saline agricultural drainage flow volumes]

Minute No. 306 to the Mexican Water Treaty

**CONCEPTUAL FRAMEWORK FOR
UNITED STATES - MEXICO STUDIES FOR FUTURE
RECOMMENDATIONS CONCERNING THE RIPARIAN
AND ESTUARINE ECOLOGY OF THE LIMITROPHE
SECTION OF THE COLORADO RIVER AND ITS
ASSOCIATED DELTA**

**Signed December 12, 2000 by the Commissioners of the
United States and Mexican Sections of the
International Boundary and Water Commission
Department of State**

Minute No. 306 provides:

- The IBWC will establish a framework for cooperation by the United States and Mexico in developing binational studies, including possible approaches to ensure use of water for ecological purposes, and recommend cooperative projects in the interests of both governments in preserving the riparian and estuarine ecology of the Colorado River boundary segment and delta.
- The IBWC will examine the effect of flows on the existing riparian and estuarine ecology of the Colorado River boundary segment and delta with a focus on defining the habitat needs of species of concern to each country. This work will be carried out through an existing binational technical task force that was established to facilitate studies related to the Colorado River delta and Santa Clara Slough.
- The IBWC will establish a forum for the exchange of information and advice among government and non-government organizations in the United States and Mexico.





SNWA Resources Department
 Landsat Image - May 2000
 Fall 2000 - MMW0900

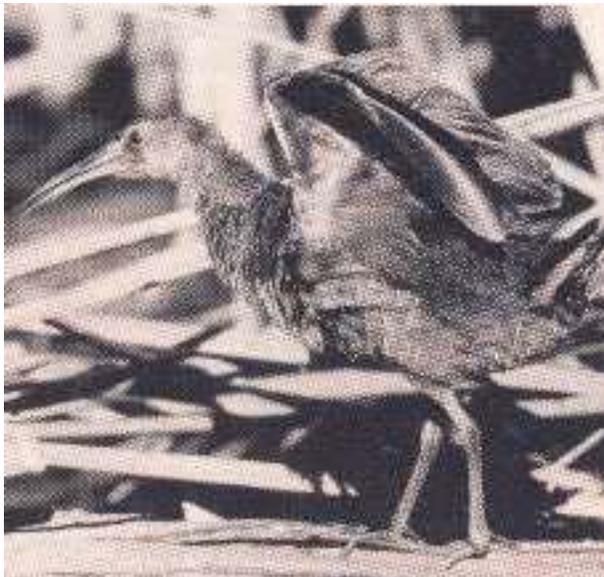
CIENEGA DE SANTA CLARA



MILES

Species of Particular Concern in the Gulf of California (Colorado River Delta)

Yuma Clapper Rail



Totoaba Sea Trout



Vaquita Porpoise



Mapping Conservation Priorities in the Colorado River Delta: A State-of-Knowledge Workshop was held on October 15-17, 2002

- Centro de Investigación en Alimentación y Desarrollo (CIAD), Environmental Defense, the Sonoran Institute, and the University of Arizona brought a bi-national group of experts, scientists with on-the-ground experience in the Delta and residents with local knowledge of together again in a highly focused workshop to develop a “map of the possible.” The goal of this project is to synthesize existing information to guide conservation goals in the lower delta over the next two decades. From the workshop we will develop a suite of products, including a map, a GIS database, workshop proceedings, and an interactive website that allows users to explore the GIS database.
- Representatives of the Basin States were invited to participate in the Workshop as “observers.” Larry Anderson of the Utah Division of Water Resources and Wayne Cook of the Upper Colorado River Commission attended and represented the Upper Basin States.
- Held as a follow-on to the Bi-National Educational Symposium held on September 11-12, 2001 at the University of Baja-California in Mexicali, Mexico.

Mapping Conservation Priorities in the Colorado River Delta: A State-of-Knowledge Workshop was held on October 15-17, 2002

- Workshop held “to complete three key aspects of the map:
- 1. Ecological assessment of specific sites within each delta ecosystem type, including:
 - a. risk potential, specifically related to possible depletion of water and/or possible inundation with too much water (e.g. scouring from floods), vegetation clearing, and water quality; and
 - b. restoration potential based on habitat fragment size, relation to wildlife corridors, distance from the Colorado River, and proportion of native to non-native species.
- 2. A hydrologic component that indicates the quantity, quality, and timing of water flows required to support each habitat type.
- 3. A gap analysis identifying additional research needs for developing a detailed restoration plan.”

INFORMATION ON THE RECENT ROCKIES/PLAINS STORM

- Snowfall was heaviest in Gilpin County, in the mountains west of Denver, where 2 locations reported 87.5". Outside Colorado, the heaviest amounts fell on Albany County, WY (24 to 30 inches)
- Many locations from central Colorado and west-central Kansas northward to the Canadian border received more liquid-equivalent precipitation from this storm than was recorded from October through early March
- Enough snow fell in the last week to supply a typical year's worth of water for a half-million 4-person households [from Tom Pagano of the Natural Resources Conservation Service]
- Among more familiar cities, Boulder, CO reported 51", Golden, CO reported 50.5", the Denver and Ft. Collins areas received 25" to 35", and Cheyenne, WY reported over 18"
- Despite some enormous totals, many locations' season-to-date snowfall totals are still only near or below normal. Despite 50.5" in Boulder, the seasonal total of 74.1" is only slightly above the normal of 71.1 inches; Gross Reservoir, CO recorded 43" by daybreak Wednesday, bringing the seasonal total to 81.5" – still about 32" below normal
- So far, expert consensus indicates that this storm will reduce but not nearly eliminate drought and water supply concerns in Colorado and Wyoming

Graph of Percent Average Snow Water Equivalent Wyoming Basins

For percentages for individual SnoTels, see either the [Map](#) or the [Station Listing with Charts](#)

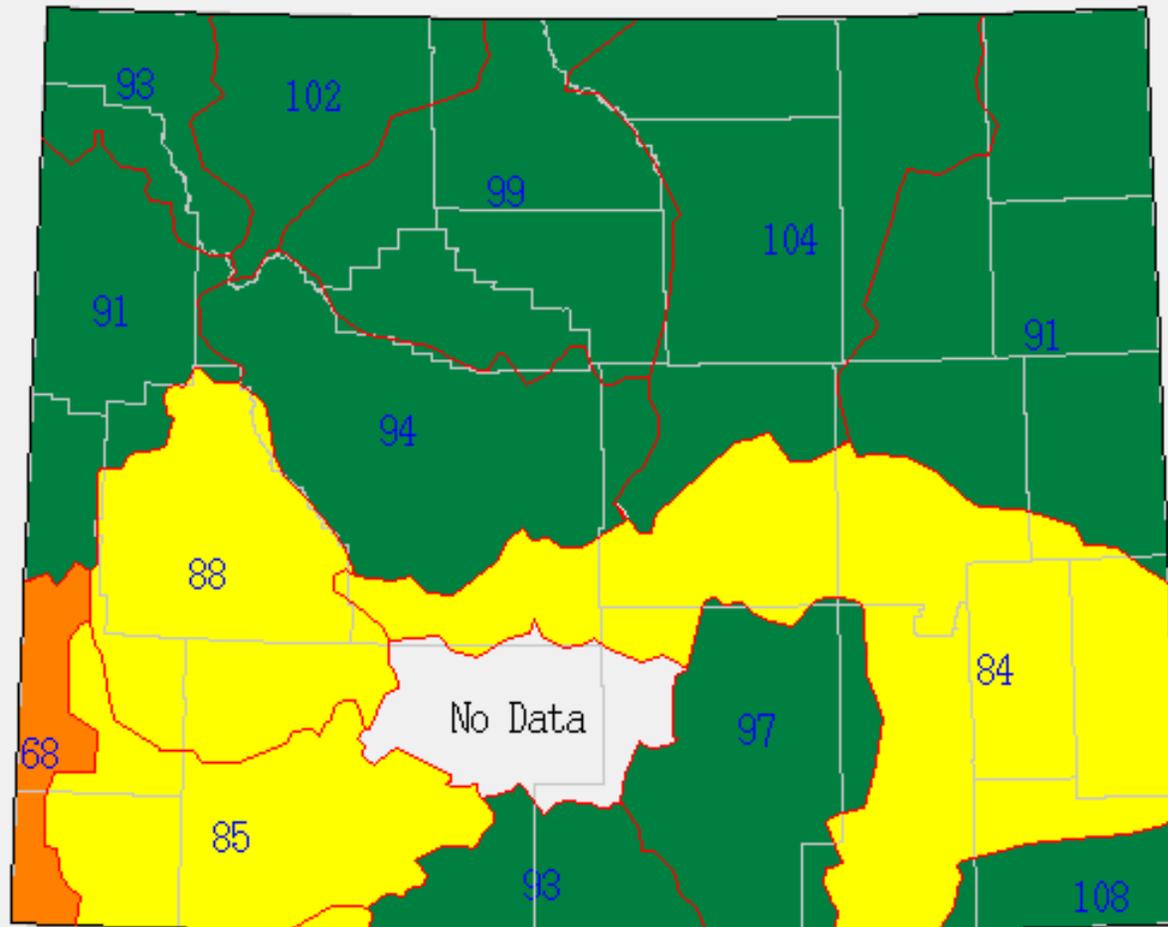
Updated Monday, 24 March 2003

Percent of Average Key									
■	< 25	■	25 to 50	■	50 to 75	■	75 to 90	■	90 to 110
■	110 < 125	■	125 to 150	■	150 to 175	■	175 to 200	■	> 200

Basin	SWE (% of Average)
Snake River	91 <div style="width: 91%; background-color: green; display: inline-block; height: 10px;"></div>
Upper Yellowstone-Madison	93 <div style="width: 93%; background-color: green; display: inline-block; height: 10px;"></div>
Wind River	94 <div style="width: 94%; background-color: green; display: inline-block; height: 10px;"></div>
Bighorn	99 <div style="width: 99%; background-color: green; display: inline-block; height: 10px;"></div>
Shoshone	102 <div style="width: 102%; background-color: green; display: inline-block; height: 10px;"></div>
Powder-Tongue	104 <div style="width: 104%; background-color: green; display: inline-block; height: 10px;"></div>
Belle Fourche	91 <div style="width: 91%; background-color: green; display: inline-block; height: 10px;"></div>
Upper North Platte River	97 <div style="width: 97%; background-color: green; display: inline-block; height: 10px;"></div>
Lower North Platte - Sweetwater - Laramie	84 <div style="width: 84%; background-color: yellow; display: inline-block; height: 10px;"></div>
Little Snake River	93 <div style="width: 93%; background-color: green; display: inline-block; height: 10px;"></div>
Upper Green River	88 <div style="width: 88%; background-color: yellow; display: inline-block; height: 10px;"></div>
Lower Green River	85 <div style="width: 85%; background-color: yellow; display: inline-block; height: 10px;"></div>
Upper Bear River	68 <div style="width: 68%; background-color: orange; display: inline-block; height: 10px;"></div>
South Platte River	108 <div style="width: 108%; background-color: green; display: inline-block; height: 10px;"></div>

[NRCS Homepage](#) | [Water Resources Data System Homepage](#)

SWE % of Average as of Monday, 24 March 2003



Percent of Average

- > 200
- 175 to 200
- 150 to 175
- 125 to 150
- 110 to 125
- 90 to 110
- 75 to 90
- 50 to 75
- 25 to 50
- < 25

* = Data may not provide a valid measure of conditions

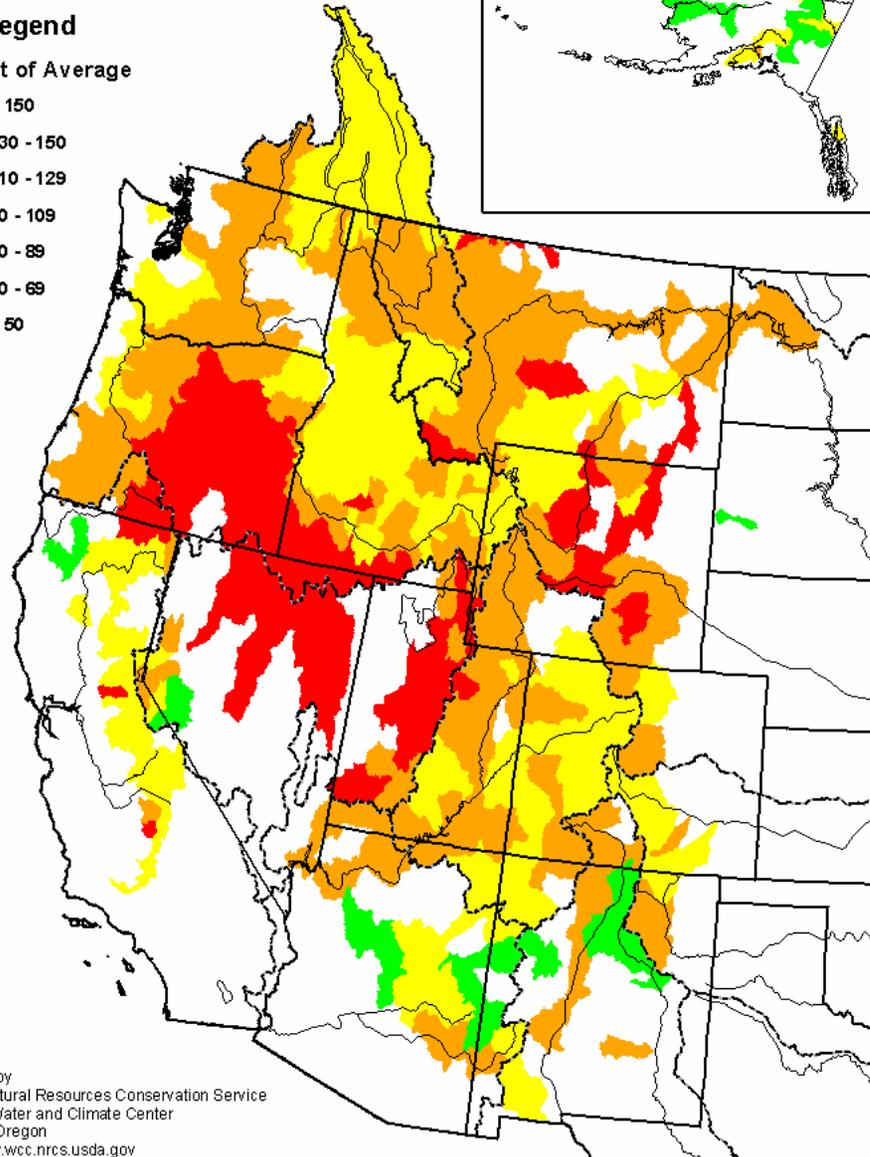
As of March 24, 2003; NRCS Data

Basin	Month-to-Date Precipitation	Year-to-Date Precipitation
KOOTENAI RIVER BASIN		
Basin-wide percent of average	208	86
UPPER YELLOWSTONE-MADISON		
Basin-wide percent of average	117	87
WIND RIVER		
Basin-wide percent of average	143	91
BIGHORN BASIN		
Basin-wide percent of average	159	101
SHOSHONE RIVER		
Basin-wide percent of average	195	109
POWDER-TONGUE		
Basin-wide percent of average	167	100
BELLE FOURCHE		
Basin-wide percent of average	171	95
UPPER N. PLATTE RIVER		
Basin-wide percent of average	141	99
LOWER N. PLATTE - SWEETWATER - LARAMIE		
Basin-wide percent of average	180	89
<i>LITTLE SNAKE RIVER</i>		
Basin-wide percent of average	127	95
<i>UPPER GREEN RIVER</i>		
Basin-wide percent of average	153	86
<i>LOWER GREEN RIVER</i>		
Basin-wide percent of average	115	81
UPPER BEAR RIVER		
Basin-wide percent of average	88	73

Spring and Summer Streamflow Forecasts as of March 1, 2003

Legend

Percent of Average



Prepared by
USDA, Natural Resources Conservation Service
National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>