

Dolores & San Juan River Basin Facts

Colorado Water Conservation Board

March 2002

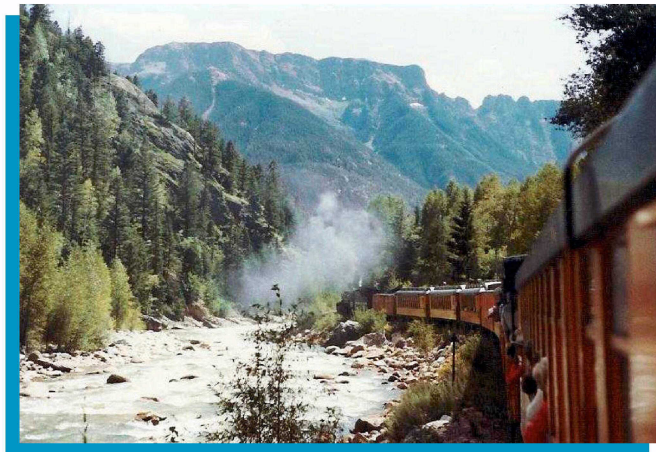
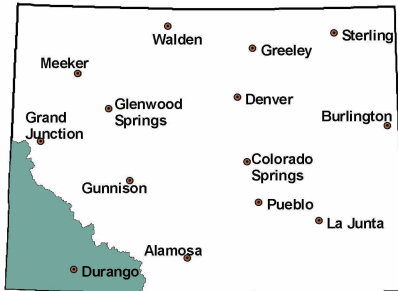


Bill Owens
Governor

Greg Walcher
DNR Executive Director

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CWCB Member,
Dolores, San Juan,
Animas and San Miguel
River Basins



Animas River (Photo courtesy of James Page)

Overview

The Dolores and San Juan River Basins are located in the southwest corner of the state. Major tributaries to the San Juan include the Piedra, Los Pinos, Animas, Florida, La Plata and Mancos Rivers and McElmo Creek. The San Miguel is the major tributary to the Dolores River downstream of McPhee Reservoir.

An average of 2.4 million acre-feet leaves the state via these rivers each year, which represents approximately 23 percent of the total water flow out of the state. Development of basin yield is limited by interstate compacts. Future development may be impacted by the San Juan River Basin Recovery Implementation Program flow recommendations for the endangered fish.

Conservation and Conservancy Districts

Water Conservation District
Southwestern

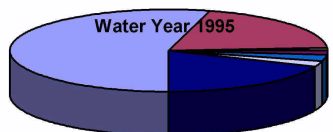
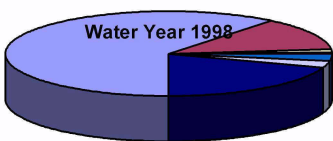
Water Conservancy Districts

Animas - La Plata	La Plata
San Juan	Mancos
Dolores	Paradox
Florida	San Miguel

Growth

These basins are comprised of portions of 10 counties in the southwestern portion of the state. Between 1990 and 2000, the population in this region increased by 38 percent and now accounts for 2.3 percent of the state's total population. The graph below lists populations for the portions of the counties that are in these basins. La Plata, Montezuma, Archuleta and San Miguel Counties are facing serious growth problems.

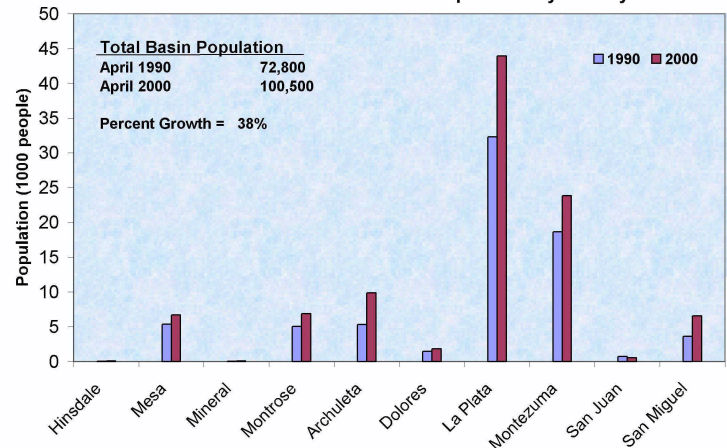
Surface Water Diversions in Acre-feet by Use



	1998 (AF)	1995 (AF)
Irrigation	938,788	975,491
Storage	193,010	353,567
Municipal	18,208	14,242
Industrial	452	4,931
Commercial	3,023	30,329
Transbasin	4,800	2,639
Stock	41,901	43,375
Fish	39,878	40,441
Power	305,015	334,341
Total	1,545,075	1,799,356

Source: Division 7 Annual Reports to the State Engineer and Water Districts 60, 61 and 63 from Division 4 Annual Reports

Dolores and San Juan River Basin Population by County



Source: Colorado Department of Local Affairs

Additional information about this river basin is available at <http://cwcb.state.co.us>

Major Storage Projects

Reservoir	Normal Storage (acre-feet)
McPhee Reservoir	381,100
Vallecito Reservoir	129,700
Lemon Reservoir	40,100
Cascade Reservoir	23,254
Groundhog Reservoir	21,000
Narraguinnep Reservoir	18,960
Williams Creek Reservoir	10,084
Jackson Gulch Reservoir	9,980
Summit Reservoir	5,954
Red Mesa Ward Reservoir	1,100

Source: Colorado Division of Water Resources Office of Dam Safety Database

Major Water Rights Calls

Some stream systems do not have water rights calls, while in other stream systems senior irrigation water rights place calls every year. Internally controlled streams include

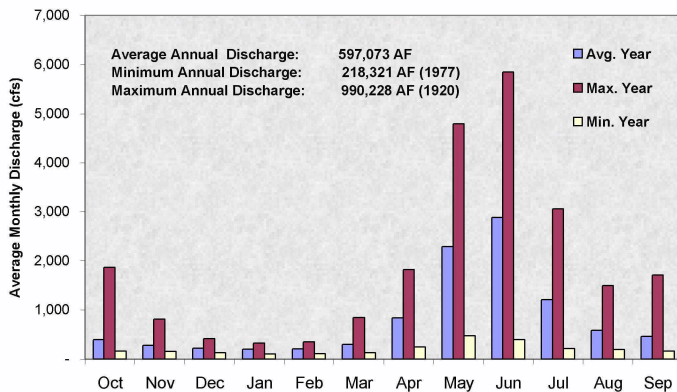
- Coal Creek
- Elbert Creek
- Florida River
- Four Mile Creek
- Junction Creek
- McElmo Creek
- La Plata River
- Little Cascade Creek
- Mancos River
- Los Pinos River
- Rito Blanco

Calls typically occur after spring runoff and extend through the end of the irrigation season. On the La Plata River, calls generally occur earlier in the spring. Except for the La Plata, water is available in the stream system for appropriation near the state line and no call for water priorities is necessary. Reservoir storage in many basins serves to reduce the impact of calls. Water rights on the La Plata River are curtailed to meet La Plata River Compact delivery requirements to New Mexico, as well as intrastate administration.

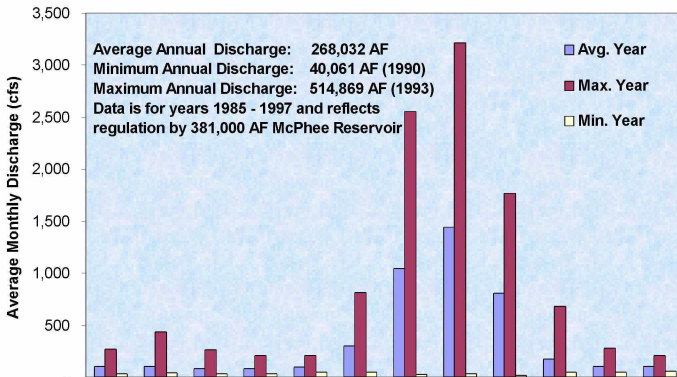
Source: Division 7 Staff and Colorado Water Conservation Board

Annual Discharges

Animas River at Durango, Colorado



Dolores River Near Bedrock, Colorado



Source: U.S. Geological Survey Water Supply Reports

Stream and Lake Protection

There are 113 instream flow segments totaling 867 stream miles in this basin. There are also 50 lakes with decreed natural lake levels. These decreed water rights are held by the CWCB to “protect the natural environment to a reasonable degree.” The decreed flow or lake level for each of these instream flow segments and natural lakes is based on the flow or lake level required to maintain the water-dependent natural environment.

Source: Colorado Water Conservation Board






Hydrological Variations

Examples of annual and seasonal flow variation are shown below.

Gage	Maximum Recorded Flow (cfs)	Minimum Recorded Flow (cfs)
Animas R. at Durango	10,700 (1949)	94.00 (1913)
Dolores R. near Bedrock	8,300 (1973)	0.12 (1977)

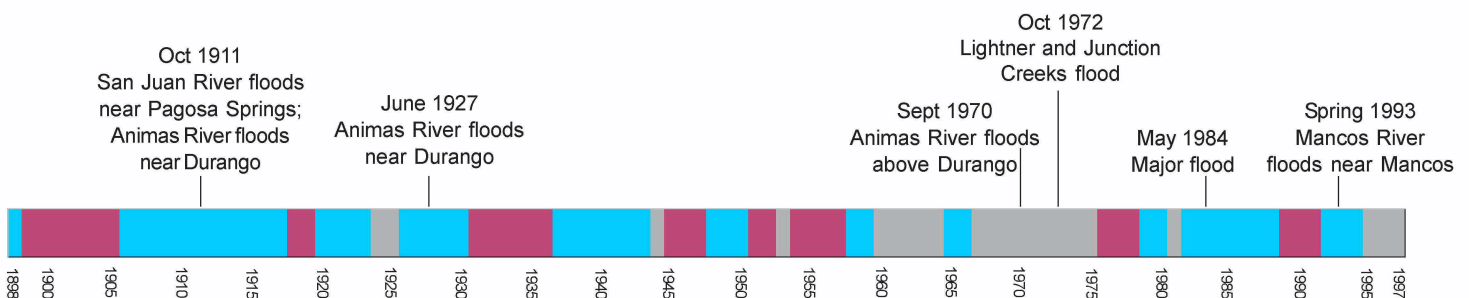
Source: U.S. Geological Survey Water Data Reports

Unique Characteristics

-  The mainstems of the San Juan, Piedra and Animas Rivers are not overappropriated.
-  Streams are generally not overappropriated within 10 miles of the state border except for the La Plata.
-  The proposed Animas-La Plata Project is dependent on the San Juan Basin Recovery Implementation Program for the endangered Colorado pikeminnow and razorback sucker.
-  The second largest project allocation from McPhee Reservoir is for the Dolores River fishery downstream of the reservoir.
-  The Southern Ute and Ute Mountain Tribes have reserved water rights claims which have been quantified by court decree. Settlement of these claims is not final and depends on Animas-La Plata construction.

Wet and Dry Periods

Every year, Colorado experiences at least one 100-year flood somewhere in the state. Colorado's total flood losses have been documented to be \$4.9 billion to date. The basin's most recent major flood event was May 21-26, 1984. The estimated total historic flood damages for this basin are \$14.5 million to date.



Source: Colorado Water Conservation Board and Division 7 Staff

Major Imports into the Basin

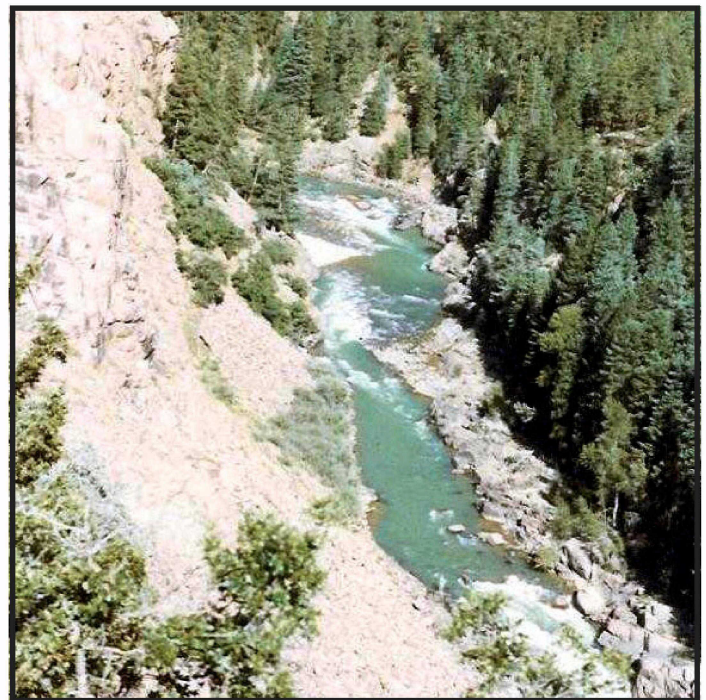
None

Major Exports from the Basin

Name	Diversions (acre-feet)
1* San Juan - Chama Project	86,331
2 Other	2,264
Total	88,595

* Numbers in the above tables correspond to numbers that accompany arrows on the basin map (p. 5).

Source: Division 7 1998 Annual Report, 10-year average



Las Animas River (Photo courtesy of James Page)

Endangered Species

Under the Endangered Species Act, four Colorado River native fish species are listed as endangered: Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker. Only the pikeminnow and razorback sucker are present in the San Juan River. Causes for the decline of these species include alteration of stream flows by water projects, introduction of non-native species and past efforts to remove the native fish from the system.

In 1990, the U.S. Fish and Wildlife Service determined that depletions from the proposed Animas-La Plata Project could jeopardize the endangered fish in the San Juan River. The States of Colorado and New Mexico, water users, hydropower customers, and federal agencies developed a program to recover these species while allowing water use and development to continue. The San Juan River Basin Recovery Implementation Program for endangered fish is designed to achieve recovery by improving flow conditions by adding water to the river through re-regulation of the Navajo Reservoir when needed by the fish, improving and developing habitat, reducing non-native fish populations, and developing native fish stocking programs.

In 1996, the U.S. Fish and Wildlife Service issued a revised Biological Opinion for the Animas-La Plata Project that determined that a total of 57,100 acre-feet could be depleted from the San Juan Basin by the Animas-La Plata Project without jeopardizing the continued existence of the endangered fish. The Recovery Implementation Program should allow Colorado to fully develop its entitlement to water under the compacts.

Source: Colorado Water Conservation Board

Compact Facts

Colorado River Compact of 1922

Allocates 7.5 million acre-feet (maf) of consumptive use annually to (1) the Upper Colorado River Basin (those parts of Arizona, Colorado, New Mexico, Utah, and Wyoming above Lee Ferry, Arizona) and (2) the Lower Colorado River Basin (those parts of Arizona, California, Nevada, New Mexico and Utah below Lee Ferry, Arizona). This Compact requires the Upper Colorado River Basin to deliver an average of 75 maf to the Lower Basin during any consecutive 10-year period.

Rio Grande, Colorado and Tijuana Treaty of 1944 between the United States and Mexico

Guarantees delivery of 1.5 maf of Colorado River water per year to Mexico. If there is not adequate surplus water to satisfy the obligation, the Upper and Lower Basins are to equally share the burden of reducing uses to make up any deficiencies.

Upper Colorado River Basin Compact of 1948

Allocates the Upper Basin consumptive use of water as follows:

Arizona	50,000 acre-feet/year
Colorado	51.75%
Utah	23%
Wyoming	14%
New Mexico	11.25%

Additionally, the State of Colorado may not deplete the flow in the Yampa River below an aggregate of 5 maf over any 10-year period.

La Plata River Compact of 1922

Apportions the La Plata River between Colorado and New Mexico. Each state has unrestricted use between December 1 and February 15. Outside that period, each state can use the flow of the river at the state line if the flow is in excess of 100 cfs. If the flow is less than 100 cfs, Colorado must ensure delivery of an amount of flow equal to one-half the flow of the river at Hesperus, Colorado.

Animas-La Plata Project Compact of 1968

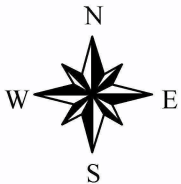
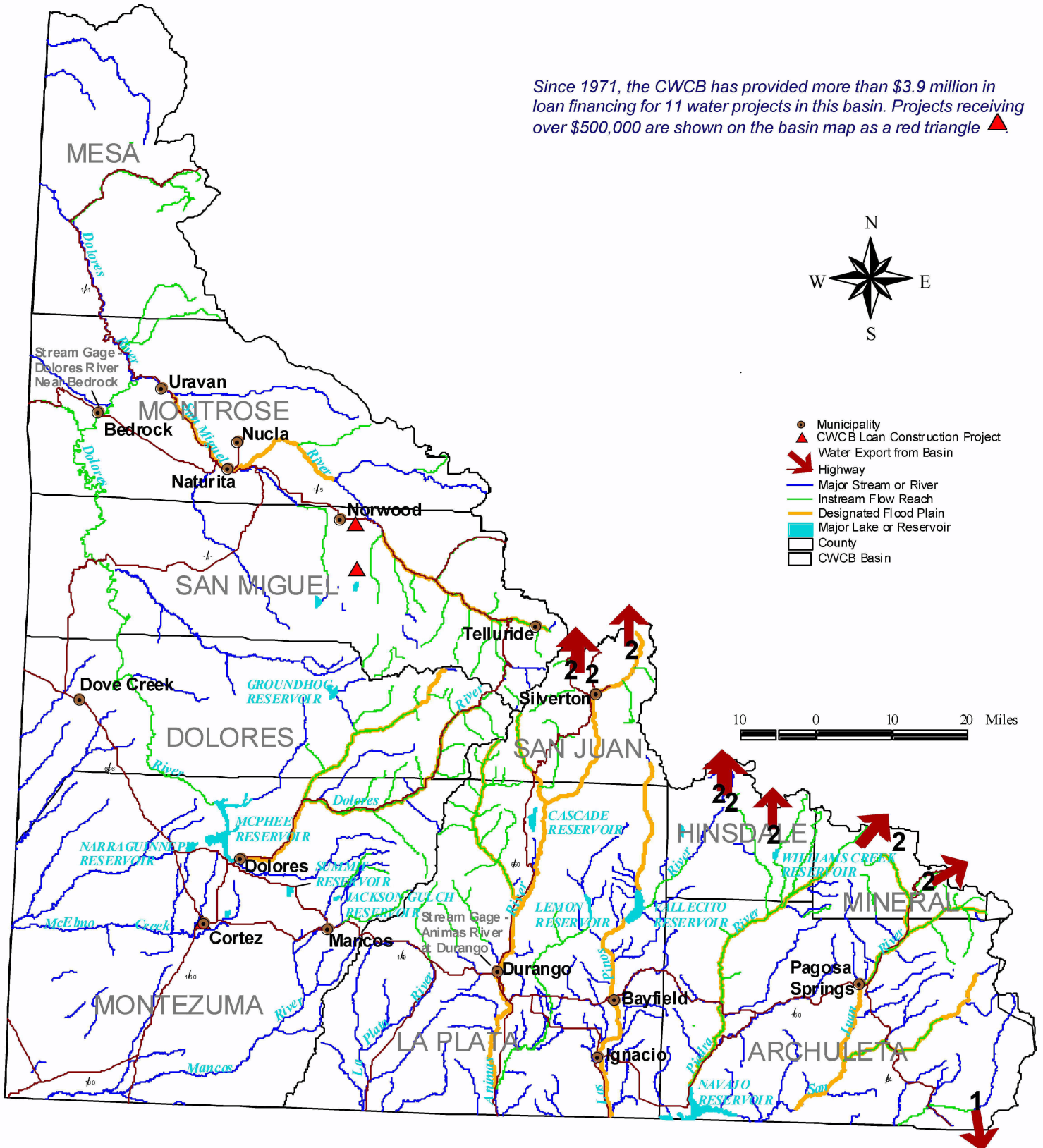
Assures New Mexico priority to the use of water delivered by the Animas-La Plata Project. The right to store and divert water for use in New Mexico under this project shall be of equal priority to rights granted under Colorado Court Decree for uses in Colorado from the project.

The Colorado Ute Indian Water Rights Settlement Act of 1988

Settles the reserved water right claims of the Southern Ute and Ute Mountain Tribes on all streams which cross the Reservations of the two tribes, with respect to quantity, priority and administration. Claims on the Animas and La Plata Rivers are dependent on construction of the Animas-La Plata Project. Colorado Court Decrees establish the rights of the Tribes within the priority system. The settlement established a Tribal Development Fund, and Colorado's cost share commitment to both the Development Fund and the Animas-La Plata Project has been paid or set aside as appropriate.

Dolores and San Juan River Basin

Since 1971, the CWCB has provided more than \$3.9 million in loan financing for 11 water projects in this basin. Projects receiving over \$500,000 are shown on the basin map as a red triangle ▲



- Municipality
- ▲ CWCB Loan Construction Project
- ↘ Water Export from Basin
- ↗ Highway
- Major Stream or River
- Instream Flow Reach
- Designated Flood Plain
- Major Lake or Reservoir
- County
- CWCB Basin

