



Idaho Drought Plan

Idaho Department of Water Resources

Revised May 2001

IDAHO DROUGHT PLAN

with

FEDERAL WATER-RELATED DROUGHT RESPONSE PROGRAMS

**Idaho Department of Water Resources
Planning and Technical Services Division
Boise, Idaho**

Revised

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1 Introduction, Purpose and Scope

The purpose of this plan is to provide current and historic information, guidance and a framework for managing water shortage situations in Idaho. Every drought has its own set of unique problems and impacts. It is difficult to present a plan that comprehensively details and addresses all of them. The information presented in this plan outlines and describes technical issues, and documents activities accomplished in the 1977 and 1987 through 1994 water shortages. The *Idaho Drought Plan* is also designed as a resource and educational tool to be used when future water shortages occur. To that end, federal water-related programs that may assist in times of drought are described in Appendix A. State assistance programs, although very limited, are included in Section 3.6.

Idaho usually has adequate surface water supplies, but these water supplies are cyclic. Some years there is too much water and other years not enough. Idaho has experienced a number of water shortages. The earliest well-documented shortages occurred in the 1920's and 30's during the Dust Bowl era. These historic records are still used today as a benchmark in evaluating potential problems. Idaho has not been without problems since then, however. Figure 1 shows the occurrence of drought conditions from 1950 to 1995 for several areas around the state. During the early 1960's several areas in the state experienced water shortages. In 1977, the worst single year on record, a severe water shortage occurred throughout Idaho and the West. In 1987 the water supply ranged from 10 to 50 percent below normal over many areas of the state. The impacts were kept to a minimum because of a good reservoir carry-over supply from 1986 and judicious use of water. In 1988, even though the overall supply was better—about 70 percent of normal—the impact was greater due to poor carry-over reservoir storage and dry soil conditions. Conditions in 1991 and 1992 mirrored conditions in 1987 and 1988. Overall, conditions between

1987 and 1993 in the southwestern part of Idaho have displaced the Dust Bowl period of the 1930's as the most severe period of drought on record.

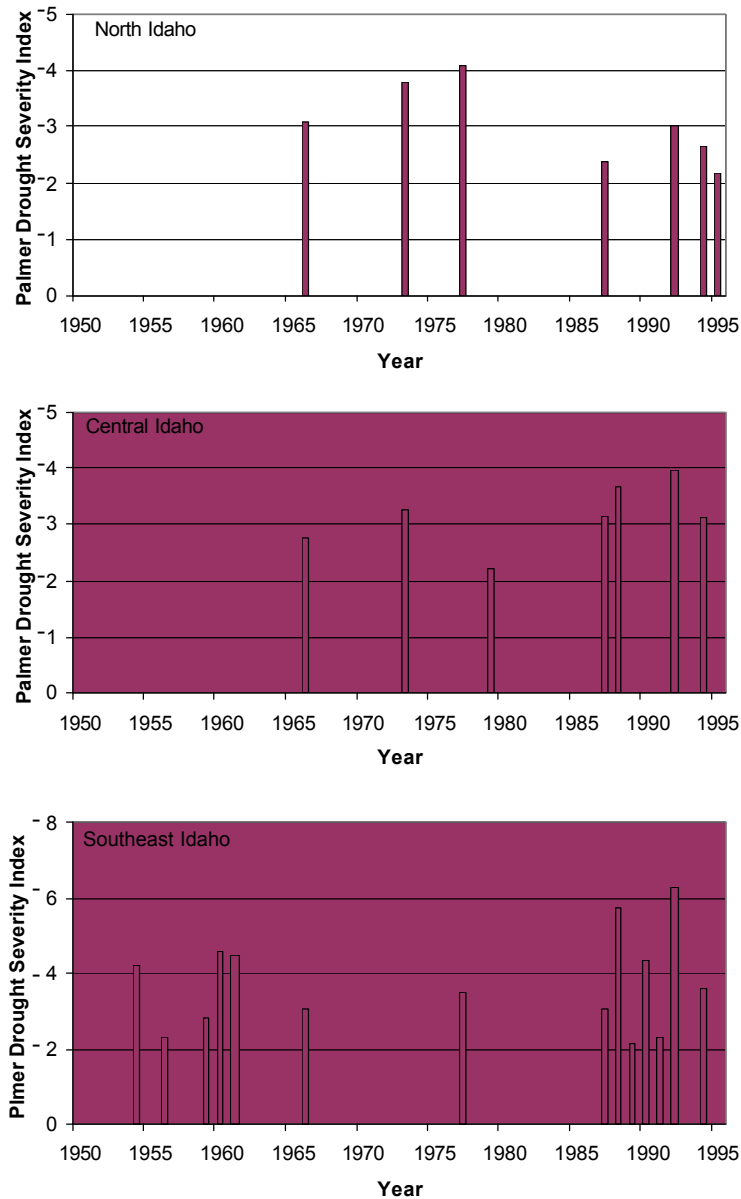
State, federal and local agencies directed considerable effort toward drought planning and assistance as a result of the 1977 drought. Valuable information was collected, many water supply problems were addressed, and drought response procedures were developed. An important item not completed in 1977, though, was the production of a "Drought Plan." In 1990 a plan was designed to fill that need, and was revised in 1995. The current plan updates information from the 1990 and 1995 plans and is reflective of continuing drought conditions and ongoing efforts to find viable responses to problems resulting from drought.

2 Idaho Water Supply Committee

2.1 GOALS

As soon as information concerning the upcoming year's water supply becomes available, the Idaho Department of Water Resources (IDWR) begins analyzing the data to determine if there is potential for a water supply problem. If it becomes apparent that a problem could occur, IDWR will alert the Governor's Office and will organize a Water Supply Committee to coordinate all drought-related activities in Idaho. This will reduce confusion and provide the public with the best possible advice on steps that can be taken to minimize the drought's impact. This committee will:

1. Compile all data to provide the most comprehensive information available concerning the drought.
2. Coordinate with the various agencies to avoid conflict or duplication and expedite the administrative process.
3. Provide responsible and timely public information.
4. Encourage water and energy conservation.



Moderate drought is defined as having a Palmer Drought Severity Index (PDSI) of -2 to -3. Severe to extremely severe drought is defined with a PDSI more negative than -3.

Figure 1. The occurrence of moderate to extremely severe drought conditions throughout Idaho from 1950 to 1995 (based on Cook et al. 2001).

The committee will be composed of key state, federal and private agencies that have interests, constituents and responsibilities that may be impacted by the water supply situation. The standing Water Supply Committee will be composed of, but may not be limited to, the following agencies:

- Idaho Department of Water Resources (Chair)
- Idaho Bureau of Disaster Services
- Idaho Department of Environmental Quality
- Idaho Department of Agriculture
- University of Idaho Cooperative Extension Service
- Idaho Department of Fish and Game
- Idaho Department of Commerce
- U.S. Bureau of Reclamation
- National Weather Service
- USDA Natural Resources Conservation Service
- U.S. Army Corps of Engineers
- U.S. Geological Survey
- U.S. Forest Service
- USDA Farm Service Agency
- Idaho Power Company

The Water Supply Committee will meet and review the best information available relative to the water supply. The committee will implement the response process with the following goals:

1. Ensure adequate supplies of domestic (culinary) water are available for public health, safety and welfare as a first priority.
2. Minimize adverse drought effects on the state's economy, environment and social well-being.

- a. Maintain municipal supplies to meet community needs.
- b. Efficiently use available water supplies to provide for agricultural needs. Farm activities must be planned with knowledge of anticipated water supplies.
- c. Maintain productive Idaho industries to provide a stable local economy.
- d. Water and land management practices should be modified, where possible, to minimize environmental impacts.
 - i. Fish and wildlife will be protected to the extent practical by water and land management.
 - ii. Recreation interests will be protected to the extent practical by water and land management.
 - iii. Forest and range hazard due to fire and erosion will be minimized to the extent practical by land management.
- e. Electrical energy conservation practices should be instituted to assure an adequate supply for all purposes.
- f. Reservoir storage and releases should be carefully managed to maximize total water-related benefits.
- g. Navigation capability, where essential to the economic well-being of a community, must be protected to the extent possible through streamflow management.

If a severe water shortage appears possible, the committee may develop a formal contingency plan using the planning flow chart in Figure 2 as a guide. During the 1987-94 period, steps one and two of the contingency plan were partially implemented. There were several reasons for this, the most important being that, even though the shortage was the worst in 50 years, it was not necessary for state government to implement a demand reduction program. The committee encouraged steps three and four to be the responsibility of local city or county governments. The committee provided technical and administrative support and helped local governments develop programs suited to their individual problems. Steps five and six were also partially implemented. A drought plan was developed and the Water Data Subcommittee implemented a monitoring program.

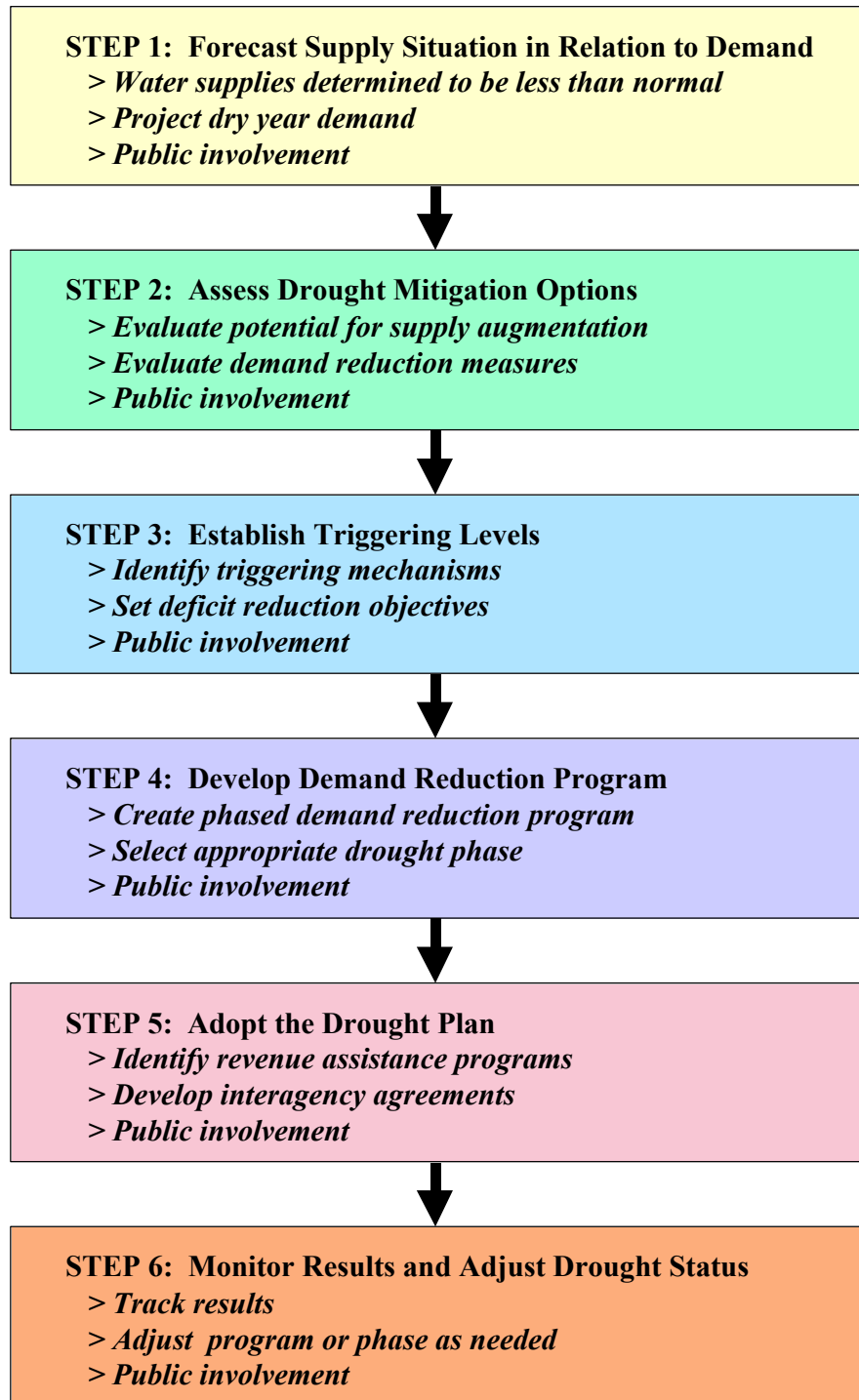


Figure 2. Drought contingency planning flow chart.

2.2 ORGANIZATION

The committee will organize any or all of the subcommittees shown in Figure 3 to help meet its goals, depending upon the stage and magnitude of the water supply problem. The committee chairman will request that various organizations assign personnel to the subcommittees and will appoint a chairman for each subcommittee. Each subcommittee chairman is responsible for the organization, membership and function of the subcommittee and will report to the Water Supply Committee on activities, goals and progress.

Water Data Subcommittee

1. Compile and analyze water supply and energy data and forecast water supply availability. Provide technical assistance to the other subcommittees.
2. Membership includes IDWR, National Weather Service (NWS), Bureau of Reclamation (BOR), Natural Resources Conservation Service (NRCS), U.S. Army Corps of Engineers (COE) and U.S. Geological Survey (USGS).

Public Information Subcommittee

1. Organize information about the drought and conservation measures in a form understandable to the public.
2. Coordinate public information distributed from individual organizations in order to prevent public confusion.
3. Membership should include information officers from public organizations.

Agricultural Subcommittee

1. Investigate and monitor water shortage problems connected with farm and ranch operations, including public land grazing, and provide technical assistance where possible. Energy issues need to be coordinated with Energy Subcommittee.
2. Membership should include Idaho State Department of Agriculture, BOR, University of Idaho Cooperative Extension Service, NRCS, and Farm Service Agency (FSA).

Municipal, Industrial, and Water Quality Subcommittee

1. Investigate and monitor water shortage problems with municipal systems and industrial users; provide technical

assistance. Energy issues need to be coordinated with the Energy Subcommittee.

2. Membership should include IDWR, Idaho Department of Environmental Quality (DEQ)(also health districts), Association of Commerce and Industry, and the Association of Idaho Cities.

Energy Subcommittee

1. Evaluate and monitor energy supplies; coordinate with other subcommittees.
2. Coordinate with the state member of the Northwest Power Planning Council.
3. Membership should include, Idaho Northwest Power Planning Council, Public Utilities Commission, Bonneville Power Administration, Idaho Power Co., IDWR, the Association of Commerce and Industry, COE, and BOR

Fish, Wildlife, Recreation, and Environmental Subcommittee

1. Investigate and monitor areas of critical need to determine where habitat may be threatened and where water and land management practices could improve fish, wildlife and recreational values, including water quality problems.
2. Determine potential of impact to recreation and tourism. Coordinate with Public Information Subcommittee to provide positive recreation information minimizing impact to the tourism industry.
3. Monitor land management, fire suppression and issues relative to impacts and actions on grazing and operational changes dealing with fire hazard and suppression.
4. Membership should include Idaho Department of Commerce, Idaho Department of Fish and Game, U.S. Fish & Wildlife Service, Idaho Department of Lands, Idaho Department of Environmental Quality, Idaho Department of Parks and Recreation, U.S. Forest Service, and the U.S. Bureau of Land Management.

Economic Subcommittee

1. Evaluate and monitor needs of individuals and organizations financially affected by the drought.
2. Assist in obtaining financing for supplementary water sources.
3. Membership should include the Farm Service Agency, Idaho Bankers Association

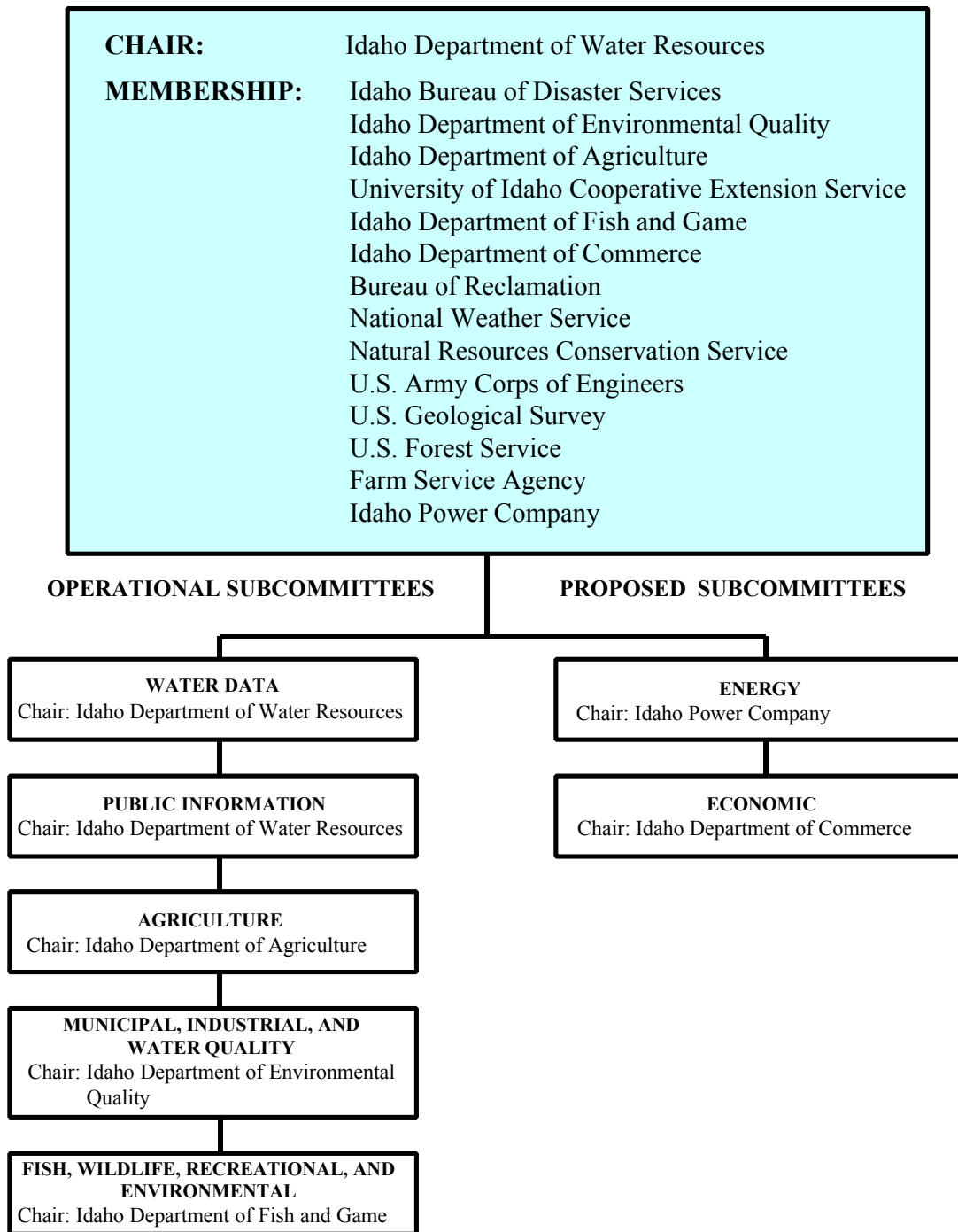


Figure 3. Potential Idaho Water Supply Committee organizational structure.

Idaho Department of Commerce,
Legislative Revenue and Taxation
Committee, and the Budget Bureau.

3 Drought Conditions and Assistance

3.1 DEFINITION

Drought, a *prolonged period of dryness*, is a normal part of almost every climate and is actually defined in many different ways. Meteorological drought is usually an expression of current precipitation's departure from the average precipitation recorded over a specific period of time. This definition is region-specific and based on an understanding of the climatic patterns typical for an area.

Agricultural drought occurs when the soil moisture is not sufficient to meet a specific crop's requirements at a particular time. Agricultural drought generally occurs after meteorological drought, but before hydrological drought.

Hydrological drought refers to deficiencies in surface and subsurface water supplies. Streamflow and lake, reservoir, and ground water levels decline when precipitation is reduced over an extended period of time. Thus, hydrological measurements are not the earliest indicators of drought.

Socioeconomic drought occurs when water supply shortages negatively impact people, either individually or collectively (drought definitions based on Wilhite and Glantz 1985).

3.2 INDICATORS

Palmer Drought Index

A well-known indicator or index of drought severity is the Palmer Drought Index (Palmer 1965). This index is essentially a soil-moisture accounting or water-balance method. It uses precipitation as input, and evapotranspiration and ground water recharge or deep percolation as outputs to compute an accumulated value of moisture deficiency or excess.

One important aspect of the Palmer Index is that it is normalized for regional or local conditions, permitting droughts in different climates to be compared. Also, the method was designed to yield

a single index value that describes the level of drought. These index values center around zero (average conditions) and range from roughly -4 (extreme drought) to +4 (extreme wetness). The Palmer Index can be found on the Internet (http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/regional_monitoring/palmer.gif).

The Palmer Index was originally developed in the Midwest where crop growth depends upon precipitation. The index is therefore a very useful one to describe general soil moisture conditions, dryland farming and rangeland conditions. In many irrigated areas of Idaho, the water supply is dependent on mountain snowpack. Water supply can therefore depend on conditions that are quite distant from the crop area, and may be supplemented by reservoir storage. Thus, the Palmer Index values do not accurately reflect water supply for irrigated croplands in Idaho.

Surface Water Supply Index

A comparable index for irrigated cropland conditions in the West has been developed by the NRCS. This index, designated the "Surface Water Supply Index" (SWSI), is based on the probability distribution of the sum of reservoir carryover storage plus forecasted spring and summer streamflow. In basins without reservoirs, the natural streamflow provides the irrigation supply and the index is computed using streamflow as the sole input.

The results of the probability distribution are scaled to a value range of +4 to -4, to mirror the Palmer Drought Index. The only values that are required in operational SWSI calculations are an estimate of April 1 reservoir storage (in basins with reservoirs) and the April-September streamflow forecasts. Once the SWSI distribution is developed for drainage basins, the forecast values describe the surface water supply conditions in each basin.

SWSI values can be objectively used to trigger various drought-related activities. In Colorado, the *State Drought Response Plan* uses two SWSI values to initiate actions. If the SWSI is -1 or below, the Water Availability Task Force is activated. At values of -2 or less, other task forces are activated and reports are made to the

Governor. SWSI values are calculated based on a probability distribution. Therefore, the frequency of occurrence of these values lends itself to triggering actions. The theoretical distribution of occurrence frequencies for the range of SWSI values is:

<u>Values of:</u>	<u>Will be Seen:</u>
+2 or greater	26% of the time
-2 to +2	48% of the time
-3 to -2	12% of the time
-4 to -3	12% of the time
-4 or less	2% of the time

The SWSI method is based on frequency analysis of the selected components and includes fitting curves to the historic data for each component. Once adapted to a particular river basin, the method appears to successfully represent the water supply conditions. The limitations of the method are similar to those for similar methodologies:

1. Approximately 25 years of record are required for each component data set (snowpack, diversions, etc.).
2. Lumping reservoir storage for an entire basin into one number can mask conditions at small reservoirs if large reservoirs are included.
3. Appreciable changes from past practices in reservoir operation or diversions can make use of the historical record inappropriate.
4. SWSI values do not necessarily reflect demand. In other words, a water supply that is exceeded 75% of the time (a SWSI value of -2) may provide an adequate supply for one basin whereas another basin may face potential shortages with the same SWSI value.

None of these limitations seriously preclude application of the SWSI in Idaho. In addition, the NRCS has worked with individual irrigation districts and water masters to determine the SWSI threshold where shortages of the irrigation agriculture water supply start to occur.

3.3 IDENTIFICATION OF DROUGHT-RELATED PROBLEMS

Any statement or description of drought-related problems is dependent upon the definition of drought. Drought is largely perceived in terms of

its impacts or problems. Consequently, drought is not simply a lack of rainfall or snow accumulation, although lower than normal precipitation is usually the cause of specific problems creating a drought situation. In addition to lower than normal precipitation, drought problems are compounded by related soil moisture and ground water deficiencies as well as lack of surface water in streams and rivers or storage in lakes and reservoirs. The precise beginning and end of a drought is also difficult to define since early adjustments may occur between more plentiful than normal and more deficient than normal precipitation.

The National Drought Mitigation Center, the National Oceanic and Atmospheric Administration, and the U.S. Department of Agriculture have developed a weekly drought monitor. This interagency product seeks to identify drought areas in the United States and to quantify the seriousness of the drought. The U.S. Drought Monitor is available on the Internet (<http://enso.unl.edu/monitor/monitor.html>).

According to Donald A. Wilhite, Director of the International Drought Information Center at the University of Nebraska, impacts of drought can be classified into three principal sectors: economic, environmental, and social. Table 1 shows the principal impacts associated with each sector. Wilhite states:

The economic impacts of drought are numerous, ranging from direct losses in the broad agricultural and agriculturally related sectors (including forestry and fishing) to losses in recreation, transportation, banking, and energy. Other economic impacts would include added unemployment, increases in food prices and overall disruption of food supply, strain on financial institutions because of farm foreclosures, increased costs of new or supplemental water resource development, and loss of revenue to local, state, and federal government.

Environmental losses are the result of damages to plant and animal species, wildlife habitat, and air and water quality; forest and

range fires; degradation of landscape quality; and soil erosion. These losses are difficult to quantify, but growing public awareness of and concern for environmental quality has forced public officials to focus greater attention on these effects. Increasing levels of environmental regulation (e.g., water quality and preservation of wildlife habitat) have imposed a new layer of constraints on water managers during water-short periods. This trend is likely to continue.

Social impacts mainly involve public safety, health, conflicts between water users, inequities in the distribution of impacts and disaster relief programs, loss of life, increased social unrest, depopulation of rural areas, and reduced quality of life (Wilhite 1993).

3.4 DROUGHT DECLARATION

The issue of whether to formally declare a drought statewide is both controversial and important. Most public agencies approach formal declaration with caution. Formal designation may not bring additional federal support or minimize economic impacts and can cause serious economic impact to tourism, agriculture, financing and many other related industries. Unless a water shortage situation is of extreme magnitude, the safest approach is to let county and local governments determine their own response. Additional information concerning local emergency and disaster declaration is provided in Appendix B. There is an existing and effective network of public agencies, water system managers, and experts who can assess their particular needs. If necessary, additional technical assistance can be provided by the Idaho Water Supply Committee (see Section 2).

3.5 FEDERAL ASSISTANCE PROGRAMS

Appendix A lists the latest federal assistance programs as documented in *The Catalog of Federal Domestic Assistance* (December 2000). However, the best source of information on available programs, measures to implement them, or how to qualify, is from the individual agencies. Various subcommittees in the Idaho Water Supply Committee, Section 2, can work with these agencies to assist in coordination and implementation. It should also be noted that some of the federal assistance programs require official drought designation. The responsible agency

should be contacted to verify any special declaration requirements. Many of the programs do have important deadlines and expiration dates.

The *Reclamation States Emergency Drought Act of 1991*, Public Law 102-250, provides specific authority to the Secretary of the Interior supplemental to the Reclamation Law to provide assistance to the states, other federal agencies and other entities for emergency drought assistance and for drought contingency planning. This authority does not replace or supersede separate authorities granted to the Secretary of Agriculture under other federal law. More specifically, the act provides funding authorization for, and broadens the scope of, existing assistance programs. Appendix C contains the text of this act.

The U.S. Department of Agriculture has authorization including emergency livestock and crop loss assistance. Emergency water assistance programs also exist on the books within the Corps of Engineers. This responsibility is limited to domestic (human consumption/usage) water needs.

3.6 STATE ASSISTANCE PROGRAMS

Several grant and loan programs are available at the state level. Water system improvement funds are authorized under the Revolving Development Account and the Water Management Account, administered by the Idaho Water Resource Board (IWRB). Interested organizations and communities can contact the Idaho Department of Water Resources for further information on these accounts. The Idaho Department of Commerce administers a community block grant program. Block grant funds do have spending guidelines that must be followed but some types of sewage and water system improvements can qualify. The Soil Conservation Commission, in cooperation with the local Soil Conservation Districts, administers the Resource Conservation and Rangeland Development Loan Program. Long-term, low-interest loans are available to farmers and ranchers for resource management projects and improvements, such as conserving soil and water resources. Information about the program can be obtained from the local Soil Conservation District.

In 1993 the Idaho Water Resource Board approved a Cooperative Agreement with the U.S. Bureau of Reclamation under Public Law 102-250

Table 1. Classification of drought-related impacts (modified from Wilhite 1992).

Problem Sectors	Impacts
Economic	<p>Loss from crop production - annual and perennial crop losses, damage to crop quality, reduced productivity of cropland (wind erosion, etc.), insect infestation, plant disease, wildlife damage to crops</p> <p>Loss from dairy and livestock production – reduced productivity of rangeland, forced reduction of foundation stock, closure/limitation of public lands to grazing, high cost/unavailability of water for livestock, high cost/unavailability of feed for livestock, high livestock mortality rates, increased predation, range fires</p> <p>Loss from timber production – forest fires, tree disease, insect infestation, impaired productivity of forested land</p> <p>Loss from fishery production – damage to fish habitat, loss of young fish due to decreased flows</p> <p>Loss of national economic growth; retardation of economic development</p> <p>Income loss for farmers and others directly affected</p> <p>Loss from recreational businesses</p> <p>Loss to manufacturers and sellers of recreational equipment</p> <p>Increased energy demand and reduced supply - drought-related power curtailments</p> <p>Costs to energy industry and consumers – substituting more expensive fuels (e.g., oil) for hydroelectric power</p> <p>Loss to industries directly dependent on agricultural production – machinery and fertilizer manufacturers, food processors, etc.</p> <p>Decline in food production/disrupted food supply – increase in food prices, increased importation of food (at higher costs)</p> <p>Unemployment from drought-related production declines</p> <p>Strain on financial institutions – foreclosures, greater credit risks, capital shortfalls, etc.</p> <p>Revenue losses to federal, state, and local governments from reduced tax base</p> <p>Revenues to water supply firms – revenue shortfalls, windfall profits</p> <p>Loss from impaired navigability of streams, rivers, and canals</p> <p>Cost of water transport or transfer</p> <p>Cost of new or supplemental water resource development</p>

Table 1. Classification of drought-related impacts (*continued*).

Problem Sectors	Impacts
Environmental	<p>Damage to animal species – wildlife habitat, lack of feed and drinking water, disease, increased vulnerability to predation (e.g., from species concentration near water)</p> <p>Wind and water erosion of soils</p> <p>Damage to fish species</p> <p>Damage to plant species</p> <p>Water quality effects (e.g., salt concentration)</p> <p>Air quality effects (dust, pollutants)</p> <p>Visual and landscape quality (dust, vegetative cover, etc.)</p>
Social	<p>Food shortages - decreased nutritional level, malnutrition, famine</p> <p>Loss of human life (e.g., food shortages, heat)</p> <p>Public safety from forest and range fires</p> <p>Conflicts between water users</p> <p>Health-related low flow problems - diminished sewage flows, increased pollutant concentrations</p> <p>Inequity in the distribution of drought impacts/relief</p> <p>Decreased living conditions in rural areas</p> <p>Increased poverty</p> <p>Reduced quality of life</p> <p>Social unrest, civil strife</p> <p>Population migration (rural to urban areas)</p>

to distribute nearly \$2,000,000 for drought relief. The resulting Drought Relief Well Construction Program accepted applications for well construction actions to replace ground water lost to drought. Applications were accepted for 90 days and resulted in more than 800 applications for costs exceeding \$7.5 million.

At IWRB direction, only applications for wells other than those eligible for funding under other IWRB programs were considered for funding. Sixteen wells were approved for hardship funding of 100 percent of allowable costs. More than 700 wells were approved for funding in part or in total. Payment of grants to approved applicants continued until about mid-1995.

4 Water Supply Estimation

4.1 CLIMATOLOGICAL DATA

Temperature and precipitation data are collected daily from nearly 110 stations in Idaho. The availability of this data varies by site, but many are now available in almost real time. Data from most of these sites can be obtained by contacting the National Weather Service (NWS) office in Boise, or they can refer you to the proper NWS office for sites outside their area. Precipitation data are also available in graphic form for Idaho and the entire Columbia Basin from the Northwest River Forecast Center (<http://www.nwrfc.noaa.gov>, "Extended Hydrologic Products").

During past drought events, the NWS office in Boise selected 12 stations to represent general conditions throughout the state for monitoring the progress of drought conditions. For 1988, a graph of the long-term average precipitation accumulation from October 1 was compared to the progress of accumulation during the period beginning October 1, 1987. Based on all 12 stations, this showed that the 1987 and 1988 water years were the two lowest precipitation years, back-to-back, that Idaho has ever experienced since records have been kept. For southwest Idaho, the 1991 and 1992 water years were the driest back-to-back years. Above-normal moisture in northern Idaho in 1991 kept the statewide index above that observed in 1987-88.

4.2 SNOW SURVEYS

The Natural Resources Conservation Service (NRCS) has leadership within the U.S. Department of Agriculture (USDA) for monitoring the mountain snowpack in the western United States during the winter accumulation and spring melt seasons. The NRCS has directed the cooperative federal, state and private snow survey program in the West since 1935.

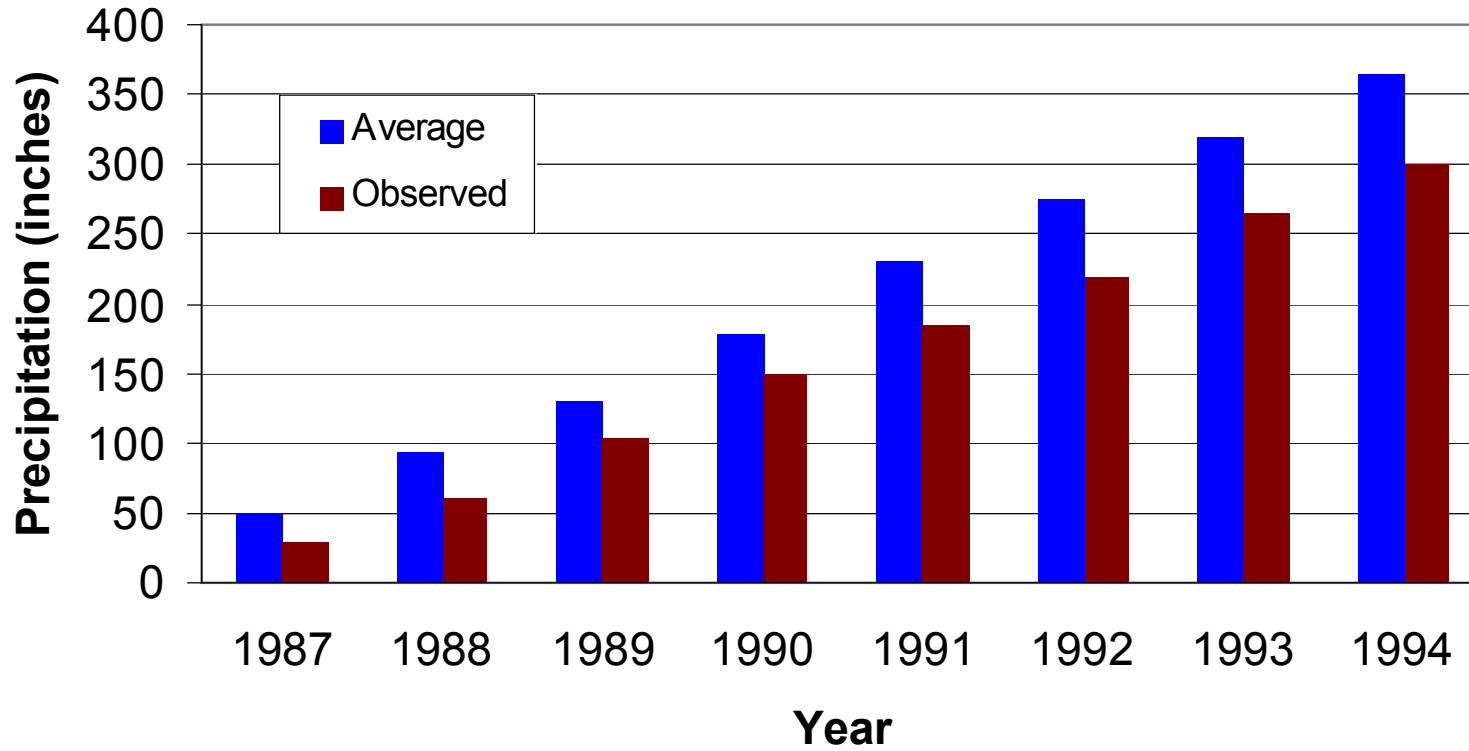
An automated network of over 100 SNOTEL sites in Idaho and adjacent states telemeters real time snowpack, precipitation and air temperature information on a daily basis. An additional network of 100 manual snow courses in Idaho provides supplemental monthly information on the mountain snowpack depth and water content. This information is available on the NRCS Idaho Snow Survey web site (<http://idsnow.id.nrcs.usda.gov>).

Data from the Mores Creek Summit SNOTEL site (near Idaho City) illustrate the severity of the drought that began in 1987. Accumulated precipitation from 1987 to 1994 was 60 inches below average. That is the equivalent of 1.25 year's worth of average precipitation that was lacking by the end of the drought period (Figure 4).

4.3 GAGING STATIONS

Streamflow, canal discharge and reservoir data are collected by 84 various agencies at approximately 290 sites in Idaho. About 35 percent of these sites include equipment for transmitting real-time data to one or more monitoring systems operated by the Bureau of Reclamation, U.S. Geological Survey and the National Weather Service. The USGS Water Resources Division is the primary hydrological data collection agency in the state, with over 260 stations in operation in 1994. Their gaging program is funded by a combination of state, federal and private organizational support. The Idaho Department of Water Resources administers a cooperative program with the USGS that includes many private water use organizations as co-contributors.

The longest recorded, continuously operated streamflow stations have been in place since the



DATA FROM USDA-NRCS SNOW SUREY UNIT, Mores Creek Summit Snotel Site

Figure 4. Accumulated annual precipitation (inches) from 1987 to 1994 at the Mores Creek Summit SNOTEL site near Idaho City, Idaho.

1890's. Stations in this category include the Snake River near Minidoka, Boise River near Boise and the Snake River at Weiser. Records on a number of major streams began around 1910, including the Snake River near Heise, Salmon River at Whitebird and Payette River at Horseshoe Bend. The Snake River near Heise and the Boise River near Boise are two long-range gages that can be corrected for storage in upstream reservoirs to yield a natural or unregulated streamflow record. Also, neither gage has substantial depletions upstream, which have varied with time. Streamflow records from these two long-term record stations reveal some interesting facts about the early 1990's drought situation. For the Boise River (1896-2000), the driest back-to-back years were 1991-92, averaging only 45 percent of normal, and considerably less than the driest two years in the 1930's (1930-31) at 57 percent of average. For the Heise gage, the driest back to back years were 1934-35, followed closely by 1991-92.

4.4 STREAMFLOW FORECASTS

The National Resources Conservation Service (NRCS) and the National Weather Service (NWS) prepare and publish coordinated water supply forecasts for approximately 75 key forecast points in Idaho, in cooperation with the Idaho Department of Water Resources. These forecasts are issued near the first of each month, January through June, and are available on the web sites of the NRCS (<http://idsnow.idnr.org>) and the NWS (http://www.nwrfc.noaa.gov/cgi_bin/r_fcst). They are also published in the *NRCS Basin Outlook Report for Idaho*.

The U.S. Department of Interior, Bureau of Reclamation (BOR) and the U.S. Army Corps of Engineers (COE) also prepare forecasts for basins where those agencies have storage projects. These forecasts are used primarily for operational purposes and have limited public distribution.

5 Water Conservation

5.1 INFORMATION AND EDUCATION

The goal of any drought information and education activity is to provide residents with

meaningful information on water supplies, help them learn methods of water conservation and instill these methods in their everyday lifestyles.

Municipal water conservation may help some communities delay the need to build new or replace old water supply systems, cut waste treatment costs, extend supplies, enhance capabilities of sewage treatment facilities and save costs associated with water pumping and distribution. City water companies can encourage water conservation by alternate-day lawn watering based on the last digit in the house number. This practice can help keep water pressure in the lines more stable, yet does not unduly deprive anyone of water. Boise Water Corporation (United Water Idaho), which gets its water from deep wells, has followed this voluntary practice each summer for years. Exceptions are made for those residents who have separate irrigation water or their own wells.

Compliance with water conservation practices may become more important when surface water supplies are short, and those homeowners who normally use surface water from irrigation ditches turn to city water when their water allotments are cut. Leaflets may be placed in utility bills advising residents of ways they can cut water consumption.

The Department of Environmental Quality (DEQ) published an article entitled "Water conservation makes sense for Idaho's systems" in their *Drinking Water Newsletter* (Issue 21, March 2001). The newsletter (Appendix E) focuses on water and energy conservation. It can be accessed through the Internet (http://www2.state.id.us/deq/water/dwnnewsletter/H2O_Bulletin_SpecialED.pdf) or copies can be ordered from the DEQ State Office. This information was provided to the 2,100 public water systems throughout the state in March 2001. Included was a fact sheet for residential water conservation. Most of the suggested conservation practices can be easily applied without major life-style changes, yet they will help Gem State residents develop water conservation habits inside and outside their homes.

During the 1987-1994 drought period, a number of publications were developed regarding water supplies and conservation methods. Such materials have been shown to be effective tools for informing the public and special-interest

groups, such as irrigators and crop producers. Various agencies and organizations offer water supply information to Idahoans even before the start of irrigation season. This early information is vitally important to the agricultural community to help farmers make important seed ordering and planting decisions. Agencies such as the Cooperative Extension Service and NRCS provide information to irrigators and other Idaho water users in handouts as well as in their own newsletters. The NRCS Idaho State Office recently published *Tips for Stretching Short Water Supplies* (March 2001, Appendix D).

The Idaho Water Supply Committee published and distributed information on the water supply outlook on a monthly basis during 1988. This information was provided to various state, federal, local and regional agencies, as well as public and private organizations. This activity was discontinued in 1989 because most agencies felt they got the information they needed at the monthly committee meetings.

Timely information is made available to Idaho media to keep the subject fresh in everyone's mind. A number of news releases are printed in newspapers about water shortages and crops that can tolerate lesser amounts of water.

Members of agencies participating in the Water Supply Committee are available to the media to provide accurate information and interpretation of data. Committee members often appear on radio talk shows and on community-interest television programs as part of public service announcements.

Radio and television stations often use public service announcements (PSAs) as fillers. Information staff can find out what formats these media wish, either 3 x 5 cards, 8-1/2 x 11 sheets or video or audio tapes. In some cases, media community relations offices will provide assistance in developing audio or video PSAs. These announcements, provided on a no-cost basis, may run in other than prime time and, consequently, audiences are smaller.

5.2 WEATHER MODIFICATION

Weather modification effects depend upon several factors, including the prevailing weather regimes of a specific area, the design of a program and the specification of a means of assessing the success of the weather modification effort.

Evaluations of both research and operational winter cloud-seeding programs indicate that a 5 to 20 percent seasonal precipitation increase can be achieved for continental winter orographic (mountain-induced) situations like Idaho. Detailed analysis of research programs demonstrate that both positive and negative effects of seeding can occur over short time intervals such as individual storm events. Consequently, it is prudent to adopt seeding techniques and criteria based upon meteorological conditions designed to optimize the positive seeding effects during these shorter time intervals, thereby maximizing the seasonal increases in precipitation.

At the end of the 1992 water year, the Idaho Water Resource Board offered financial assistance in the form of one-time cost share grants to assist regional entities in establishing winter cloud seeding projects. The effort was successful in that weather modification projects were initiated in the Upper Snake, Bear and Boise River basins during the 1992-93 winter.

In 1994 the Idaho Legislature added to the duties of the Director of the Department of Water Resources authority to coordinate, through contract or other means, weather modification projects designed to increase water supplies. The legislature also approved funding for IDWR to provide financial assistance to local or regional entities that are funding winter-season weather modification programs.

In summary, weather modification programs should not be implemented for short-term drought relief. Weather modification is designed to increase the amounts of moisture realized from storms over the long term. Any weather modification program with the goal of increasing basin-wide winter snowpacks should be a multi-year commitment. If storms are not occurring due to change in weather pattern, not much can be done.

6 Organizational Authority and Responsibility

6.1 STATE AGENCIES

Idaho Department of Water Resources

The Idaho Department of Water Resources serves as the lead state agency in coordinating federal, state and local input in drought-related activities. The two major legislated responsibilities that IDWR has relative to a water shortage are administration of all water rights (this is covered in Section 7) and the inventory, monitoring, and planning of the state's water resources. Included in the resource inventory and monitoring are a number of specific functions that provide information about water shortages and resulting impacts. These specific functions include:

- *Surface water simulation.* This allows for predictions of potential problems based on forecast flows and changes in those flows. It also provides an accounting of water diversion and use by river reach. These simulations can also be used to quantify and forecast impacts from drought induced water supply reductions.
- *Groundwater modeling.* This series of computer programs is useful for assessing impacts to the ground water system from low recharge or increased pumping, the addition of new wells or other changes related to recharge and discharge.
- *Geographic information and mapping.* This is useful primarily for determining impacts, affected areas and general agricultural, forest and rangeland conditions. Computer processes, including satellite image processing, are utilized to increase efficiency and response time.

The Idaho Water Resource Board (IWRB) is appointed by the Governor and charged with developing the Comprehensive State Water Plan. The State Water Plan provides for economic growth while protecting a quality environment. The Comprehensive State Water Plan consists of the statewide water policy plan (Part A), and the Part B component plans for individual basins or other geographic designations. These plans are reviewed and re-evaluated by the Board on a

periodic basis. Water Planning Bureau staff provide information and technical support to the Water Board.

Component plans are complete for the following basins and river reaches as of April 1, 2001:

Basin Plans

Priest River
South Fork, Boise River
Upper Boise River
Henry's Fork, Snake River
North Fork Clearwater River
South Fork Snake River
Payette River

River Reach Plans

Snake River, Milner to King Hill

Idaho Bureau of Disaster Services

The Bureau of Disaster Services (BDS) is the lead state agency for coordinating state response and recovery for natural and man-caused emergencies and disasters that threaten life, property, and the built environment. Its legislated responsibilities (*Idaho Code § 46-10*) include:

1. Define state roles, organization, and chain of command in response and recovery planning.
2. Promulgate standards and criteria for local and intergovernmental disaster plans.
3. Coordinate with county commissioners and other officials regarding disaster preparedness and response.
4. Coordinate and organize State action and coordinate the implementation of the State plans upon a State declaration.
5. Plan and make arrangements for the availability and use of any private facilities, services, and property and, if necessary and if in fact used, provide for payment for use under terms and conditions agreed upon.
6. Cooperate with the federal government and any public or private agency or entity in achieving any purpose of this act and in implementing programs for disaster prevention, preparation, response, and recovery.
7. Consider, on a continuing basis, steps that could be taken to prevent or reduce the harmful consequences of disasters.

Further, the Governor's *Executive Order 2000-04* directs BDS to coordinate state and federal emergency response, recovery, and mitigation operations during emergencies and disasters; to coordinate mutual support between the state government and federal agencies and other states and counties; and to provide technical support to local jurisdictions involved in local emergencies.

Other responsibilities for coordination of federal disaster and mitigation assistance are defined in federal law, *The Robert T. Stafford Disaster Relief and Emergency Assistance Act*, as amended, 42 USC 5121 *et seq.*

Idaho Department of Environmental Quality

The Department of Environmental Quality (DEQ) is organized into five divisions: Water Quality, Waste and Remediation, Air Quality, Technical Services, and Planning and Special Projects. The Department includes the State Office with six regional offices (Figure 5). The Water Quality Division's programs include drinking water, ground water protection, nonpoint and point source pollution, and municipal facilities construction. Two priorities of the Division are:

1. Improve ground water quality in identified degraded areas and protect ground water.
2. Improve the surface water quality in areas identified as not supporting their beneficial uses or where the state believes threatened or endangered species exist.

The planning aspects of the Water Quality Division involve evaluation of the Division's programs and their effectiveness, development of strategies for managing specific water quality problems, and special studies designed to answer a specific water quality problem.

The major mechanism for control of point source (municipal/industrial) discharges is the National Pollutant Discharge Elimination System (NPDES), administered in Idaho by the U.S. Environmental Protection Agency (EPA). The Division provides coordinated review of all permits developed by EPA, to ensure the permit complies with Idaho water quality standards and criteria.

For nonpoint source pollution (runoff from land), DEQ began developing watershed-by-watershed plans in 1999 to clean-up surface waters. With the assistance of local Watershed Advisory Committees, DEQ is devising Total Maximum Daily Loads (TMDLs) for water quality-impaired rivers and streams. The Division also certifies other federal permits and licenses, including the Corps of Engineers and Federal Energy Regulatory Commission (FERC).

The Water Quality Division is responsible for review of plans and specifications for wastewater treatment facilities as well as water systems under *Idaho Code Section 39-118* (see also Section 7). The Division reviews plans for municipalities, fish hatcheries, mining sites, water and wastewater facility operations, and industrial wastewater facilities such as food processing. The Division also administers permits for land application of wastewater and for cyanide mining operations.

The public drinking water program is administered by the Division. Its purpose is to ensure Idahoans receive safe drinking water. The Division contracts with the seven health districts for oversight of small community and non-community drinking water systems. The program addresses source protection and safe delivery for more than 2,080 community and non-community water systems statewide.

Ninety percent of the total community and non-community water systems derive drinking water from ground water sources. The remaining systems, more commonly located in northern Idaho, utilize surface-water sources. Management efforts are geared toward compliance with monitoring and maximum contaminant level requirements for bacteria and turbidity and enforcement actions when necessary.

The Environmental Protection and Health Act of 1986 provides the authority to protect Idaho's environment and promote public health. Through this act, rules, regulations and standards are promulgated that afford specific protection from classes of activities that may be damaging to the environment and/or threatening to public health. The Environmental Protection and Health Act provides for enforcement of the provisions of the act and all pertinent rules and regulations.

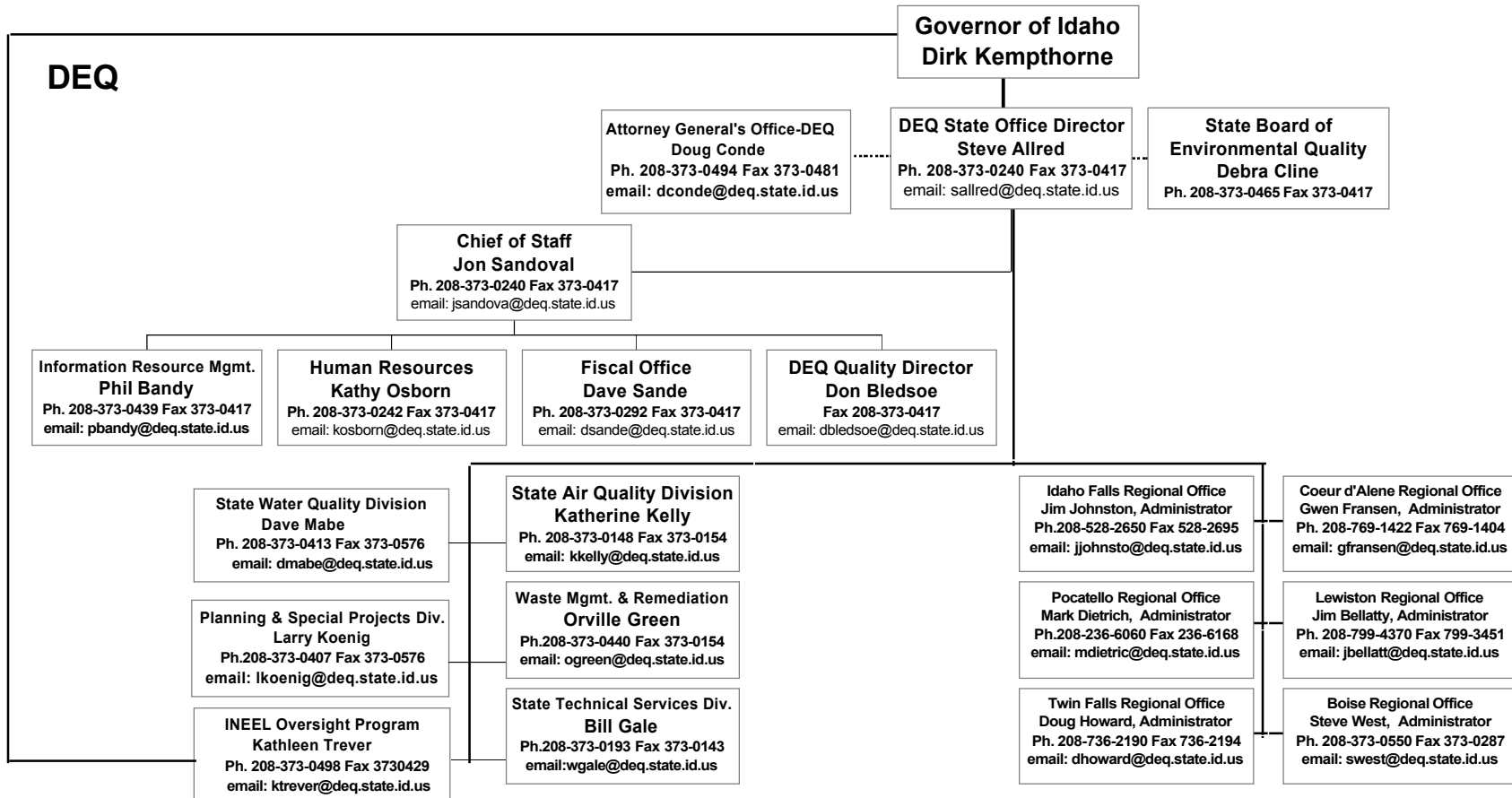


Figure 5. Department of Environmental Quality organizational chart and contacts.

Enforcement options include administrative, civil and criminal actions.

The most comprehensive administrative rules relating to the protection of water quality are the “Idaho Water Quality Standards and Wastewater Treatment Requirements.” Enforcement of these rules spans many program areas and is probably the most significant single means of achieving the Division’s water pollution control goals. There are also program-specific administrative rules that regulate certain kinds of activities that may impact water quality.

The Division administers the state and federal construction grants program operates the state revolving loan program. These programs are intended to provide financial assistance to Idaho communities needing new wastewater treatment systems or improvements to existing systems in order to protect public health and comply with water quality standards (Table 2).

Idaho State Department of Agriculture

The Idaho State Department of Agriculture (ISDA) serves the state's agricultural community through a wide variety of services. Technical assistance, financial assistance, laboratory testing, national and international marketing, inspection, licensing programs, regulatory programs, and environmental protection programs all help strengthen Idaho agriculture. ISDA was created by the Idaho State Legislature in 1919 to assist and regulate the state's agricultural industry. The organizational structure of the department consists of four divisions - Agricultural Resources, Animal Industries, Plant Industries, and Agricultural Inspections.

The Division of Agricultural Resources is designated to protect human health, the environment, and wildlife species of the State from potential adverse effects of pesticides. Agricultural Resources is responsible for implementing the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for EPA through a cooperative agreement. Agricultural Resources is responsible for registering pesticides, pesticide applicator training, licensing, recertification and monitoring water quality. The Division is responsible for assuring compliance with the laws and regulations (both state and federal) governing the use of pesticides in Idaho. Other programs conducted by the Division include worker

protection, endangered species, providing toxicological information, pesticide disposal, container recycling, agricultural ground water quality protection, and TMDL agricultural monitoring.

The Division of Animal Industries functions include disease control and eradication, licensing, inspection and testing of animals, milk and milk products throughout Idaho's animal industries. The major missions of the divisions are to protect the animal and commercial fishing industries of the State and assure safe, quality products for its citizens. Another mission of the division is to protect water and air quality related to dairies and confined animal feeding operations. The division consists of the Bureau of Animal Health and Livestock, Dairy and Egg, and the Engineering Services group.

Functions and activities of the division include the issuance of phytosanitary certificates for the export of plants and plant products; field inspections of crops for phytosanitary certification; survey and detection of exotic pests and diseases; service to the seed industry through purity, germination, tetrazolium and special seed tests; laboratory analyses of feed and fertilizer for compliance with Idaho Code; licensing of nurseries/florists and seed dealers; registration of feed products sold in Idaho and registration of bee colonies. In addition, the Division administers the Cooperative Agricultural Pest Survey, Seed Arbitration Council, the abandoned orchard program, and the Grasshopper/Mormon cricket control program. The Division of Plant Industries consists of the Bureau of Feeds and Plant Services, Feed and Fertilizer Lab, and Seed Laboratory.

The Division of Agricultural Inspections regulates and supports the fresh fruit and vegetable industry in Idaho. The various programs within this division are the Bureau of Shipping Point Inspections (FF&V), Warehouse Control, Weights & Measures, and Organic Certification Program.

6.2 FEDERAL AGENCIES

Farm Service Agency

The State Executive Director of the Farm Service Agency (FSA) is the permanent chairperson of the USDA State Emergency Board

Table 2. Summary of environmental quality regulatory authorities

<u>Contaminant Source</u>	<u>Agencies with Authority to Regulate Contaminant Source</u>
Leaking Underground Storage Tanks (non-hazardous)	DEQ-WQD, EPA, State Fire Marshal
Feedlots and Dairies	Idaho Dept. of Agriculture
Landfills	DEQ-WRD, Health Districts, County Governments
Hazardous Waste Sites	DEQ-WRD, EPA
Hazardous Waste Handling and Storage	DEQ-WRD, EPA, DEQ-WQD
Land Application of Wastewater	DEQ-WQD
Land Spreading-Septage and Sludge	DEQ-WQD, Health Districts
Agricultural Chemicals	Idaho Dept. of Agriculture
Radioactive Substances	Nuclear Regulatory Commission
Septic Tanks	DEQ-WQD, Health Districts
Well Drilling	Idaho Dept. of Water Resources
Mining	Idaho Dept. of Lands, DEQ-WQD
Oil and Gas Drilling	Idaho Dept. of Lands, DEQ-WQD
Silviculture	Idaho Dept. of Lands, DEQ-WQD
Injection Wells	Idaho Dept. of Water Resources
Geothermal Wells	Idaho Dept. of Water Resources
Pits, Ponds, and Lagoons	DEQ-WQD, DEQ-WRD
Urban Runoff	Idaho Dept. of Water Resources (shallow injection wells), DEQ-WQD

EPA: United States Environmental Protection Agency
DEQ-WQD: Department of Environmental Quality, Water Quality Division
DEQ-HMB: Department of Environmental Quality, Waste and Remediation Division

(SEB). FSA has the responsibility of reporting to the Secretary of Agriculture on disaster conditions in agricultural counties through the use of Disaster Assessment Reports. Local County Emergency Boards compile these assessment reports.

FSA administers agricultural programs when legislated by the U.S. Congress. Permanent disaster assistance programs available through FSA are Emergency Loans and the Emergency Conservation Program. Both of these programs provide assistance to agricultural producers affected by eligible disaster conditions.

Risk Management Agency

The USDA Risk Management Agency (RMA) provides agricultural producers with the opportunity to achieve financial stability through effective risk management tools. The primary goal of RMA is to foster, at reasonable cost, an environment of financial stability, safety, and confidence, enabling the American agricultural producer to manage the perils associated with nature and markets. The private-sector crop insurance industry markets, delivers, and services many USDA risk management products. RMA also provides educational opportunities to help producers choose appropriate risk management tools. RMA works with the Farm Service Agency, Commodity Futures Trading Commission, and other private and public organizations to provide producers with an effective farm safety net.

RMA partners with USDA sister agencies throughout the Department, particularly with those within the *Farm and Foreign Agricultural Services (FFAS) Mission Area*. The FFAS mission area, comprised of the Farm Service Agency, the Foreign Agricultural Service, and the Risk Management Agency, helps keep America's farmers and ranchers in business as they face the uncertainties of weather and markets. They deliver commodity, credit, conservation, disaster, and emergency assistance programs that help improve the stability and strength of the agricultural economy. FFAS contributes to the vitality of the farm sector with programs that encourage the expansion of export markets for U.S. agriculture. In cooperation with the private sector, this mission area offers broad-based crop insurance programs and other risk management tools.

U.S. Bureau of Reclamation

The Bureau of Reclamation (BOR) responds to drought through its resource management and technical functions to reduce the adverse impacts of periodic water shortages.

Project Sizing. BOR considers that water supplies will be variable when it plans the size of water storage projects. While it may vary from project to project for irrigation, BOR uses a "rule of thumb" during project planning that allows no more than a 50 percent shortage in any one year and cumulative shortages over any consecutive 10-year period of no more than 100 percent of a full supply. This shortage criteria is designed to ensure the long-term economic viability of project irrigators from a water supply standpoint.

- *Water Conservation and Efficiency Improvement.* Efficiency improvements can reduce the impact of water shortages. Planning water conservation and resulting implementation can occur on new or existing projects. BOR has several programs that can provide long-term and drought contingency planning and response assistance.
 1. General Investigations - General investigative studies are usually multi-year efforts dealing with complex projects. These studies require congressional funding and 50 percent local cost share. The cost sharing can occur through either fund transfers or services. A successful study concludes with a plan of action submitted to Congress for authorization and funding. Project beneficiaries repay costs of the project usually over a 40- or 50-year period.
 2. Technical Assistance in Water Conservation Planning - BOR's regional and area offices can provide assistance in the development and implementation of water conservation plans. The Reclamation Reform Act of 1982 requires entities that contract for Federal project water supplies to develop and periodically update water conservation plans; and BOR is developing and administering a

program to assist users in the preparation, review and updating of water conservation plans. Technical assistance is provided on a reimbursable or non-reimbursable basis, depending on the nature of the assistance.

Project Operations. BOR is responsible for operating federal-reserved works of various projects in Idaho. In its water delivery capacity, BOR adheres to state water rights and project contract obligations and seeks to use the water resource in an efficient manner. These efficiency methods are of particular value in water-short years.

- BOR participates in gathering data on snowpack, precipitation, reservoir storage contents, streamflows, major diversions and return flows. It makes runoff forecasts with this information and uses modeling techniques to help project the coming year's water supply. Entering into and during the irrigation season, BOR meets monthly with water users to share the water supply information. These discussions allow water users to make decisions on upcoming water delivery schedules and to implement programs to efficiently use the available resource.
- Through a cooperative program with the Bonneville Power Administration, BOR operates a series of automated weather stations and inputs weather data into programs that develop estimates of crop water use. By using this program, known as AgriMet, irrigators can use their water supply more efficiently and increase the quality and quantity of their crops.
- BOR can assist water users to effect water transfers between willing buyers and sellers within and between districts.
- BOR can also facilitate programs with states and water users to implement efficiency measures such as water banks and scheduling agreements.
- BOR coordinates its reservoir and river operations with recreation and fish and wildlife interests when major operational

changes are required. Cooperative discussions seek accommodation on streamflow and reservoir pool levels, where possible, to protect environmental values.

- BOR maintains an emergency fund of about \$1 million that it could use for drought-relief actions on its projects. Since this fund is available to projects in the 17 Reclamation states, assistance would be limited.

Emergency Assistance. The Reclamation States Drought Emergency Assistance Act of 1991 gave BOR the authority to provide assistance to states, water supply entities and others under a drought assistance request from the governor. Those assistance activities requiring a monetary contribution depend upon appropriation of funds by the Congress (see Appendix C).

Contingency Planning. BOR anticipates that it will become involved in working with the state and others preparing drought contingency plans in the coming decade. These contingency plans will not be strictly limited to the boundaries of BOR projects.

U.S. Army Corps of Engineers

Under Public Law 84-99, the U.S. Army Corps of Engineers (COE) may provide emergency water assistance when that assistance is needed due to drought. Engineering Regulation 500-1-1 describes COE authority, policies and procedures for emergency water assistance.

The responsibility for providing an adequate supply of water to inhabitants of any area is basically non-federal. COE assistance to provide emergency water supplies will only be considered when other interests have exhausted reasonable means for securing necessary water supplies, including assistance and support from other federal agencies such as the Small Business Administration, Agriculture Stabilization and Conservation Service, Economic Development Administration, etc.

Conditions typical of a drought-stricken area are:

- Ground water levels, soil moisture and streamflows may be abnormally low as defined by indicators such as the Palmer Index;
- Aquifer levels are extremely low when compared to historical norms and the condition is not a periodically occurring situation or the continuation of a long-term trend; and
- Runoff from rainfall or snowpack into rivers, streams, lakes, or other storage areas is abnormally low resulting in reduced or lost water supply sources.

General guidance for determining if an area can be designated as drought-distressed is:

- A specific need for assistance exists that may be eligible under the limited authority provided by the Public Law 95-51 amendment to Public Law 84-99;
- Clearly definable need in the foreseeable future even with state and local actions underway or planned; and
- Drought conditions, as may be defined by any of a number of measurements, are causing or likely to cause a substantial threat to the public health and welfare of the inhabitants of the area. This could include the threat of damage or loss of property.

Evaluations are also to be tempered by the fact that COE assistance is supplemental to state and local efforts. If the drought situation is only resulting in loss of ability to do such things as water lawns, fill swimming pools, wash cars, etc., there is generally no basis for considering COE assistance. Where reasonable conservation measures will ensure adequate supplies for the public health and welfare, there should be no need for a detailed evaluation by the COE. Examples of actions expected of state and local interests are:

- Declaration of a drought emergency by state and/or other appropriate authority;
- Use of available state resources, funds, manpower and equipment, such as the National Guard;
- Using water conservation measures to reduce demand;
- Prioritization of use of available water (human consumption and sanitary needs

take priority over industrial processes and irrigation of crops);

- Appropriate experts establish minimum requirements for public health and welfare; i.e., gallons per day per person for human health and sanitation, gallons per day per head of livestock, gallon reserve for fire fighting, etc.;
- Modification to operation of water treatment facilities to process alternate water sources that may be available;
- Evaluation of water processing and distribution system losses and making repairs to minimize such losses; and
- Use of non-potable water to meet non-potable requirements (where the problem is maintaining well production, address alternatives available, such as lower production or deepen well).

Assistance may be provided to any political subdivision within a designated drought-distressed area experiencing an inadequate supply of water due to drought. Water may be provided for human consumption only; water for irrigation or recreation cannot be provided under this authority. A written request is required from the Governor.

Transportation of water by vehicle, small diameter pipeline, or other means will be at 100 percent federal cost. COE assistance will not include the purchase of any water nor the cost of loading or discharging the water into or from government conveyance.

The COE may construct wells only when private business cannot construct them within a reasonable time. The applicant will pay well construction costs. A cost analysis will be made of the proposed work and of any reasonable alternatives. The COE can provide planning assistance with water resource related issues through their Planning Assistance for States and Tribes Program described in Appendix A.

U.S. Natural Resources Conservation Service

The Natural Resources Conservation Service (NRCS), formerly Soil Conservation Service, has responsibility to measure and monitor the winter snowpack in the western United States. In conjunction with the National Weather Service

(NWS), NRCS uses this information to make volumetric streamflow forecasts for major rivers in the state.

The NRCS publishes snowpack, precipitation, reservoir and streamflow forecast information in the *Basin Outlook Report for Idaho*. This report is prepared monthly, January through June. An additional report, the *Water Supply Outlook for the Western United States*, is available on the Internet (see Section 4.4) January through June by the NRCS and NWS in Portland, Oregon.

NRCS field office personnel assist individual farmers and groups to make the best use of the water available through conservation practices. This includes planting of low water use crops and designing and installing conservation practices, such as portable sprinklers and conveyance ditch lining to conserve water. The NRCS can assist farmers with irrigation scheduling on a limited basis.

U.S. Geological Survey

The basic mission of the Water Resources Division of the U.S. Geological Survey (USGS) is to collect, interpret and disseminate hydrologic information needed by federal, state and other public agencies for effective utilization and management of the nation's water resources. The USGS has no regulatory authority and thus is strictly prohibited from recommending best management practices during hydrologic events such as a drought or flood.

To accomplish its mission, the USGS maintains district offices in most states. In Idaho the district office is located in Boise; field offices are located in Boise, Idaho Falls, Twin Falls and Sandpoint. A project office is located at the Idaho National Engineering Laboratory.

Hydrologic information readily available to planners includes data on streamflows, reservoir and lake levels, ground water conditions and chemical and biological characteristics of surface and ground water. The USGS also performs problem-oriented research to quantitatively predict response of hydrologic systems to stress, either natural or manmade.

Hydrologic information is available in various forms, including published reports, maps, computerized information services, data requests and public releases. Computer services include data

available from satellite-relay sources.

The USGS maintains a comprehensive data-collection network that includes 219 continuous recording surface-water monitoring stations in Idaho. One hundred and thirty-three of these stations are equipped with satellite-relay transmitters (DCPs). The DCPs transmit streamflow information every four hours (15 minutes during emergency conditions) to receiving facilities at the U.S. Bureau of Reclamation Regional Office in Boise and at the U.S. Geological Survey office in Tacoma, Wash. The IDWR, Idaho water districts and other agencies responsible for water management have direct access to this information. Status of ground water and water quality conditions throughout the state is maintained by the USGS in Boise and is readily available upon request. USGS data is available on the Internet (<http://idaho.usgs.gov>).

In accordance with its mission, the USGS will continue to provide hydrologic information and assistance as required by the Idaho Water Supply Committee to meet its stated objectives.

National Weather Service

The National Weather Service (NWS) mission as mandated by Congress is to provide weather, hydrologic, and climate forecast warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure that can be used by other governmental agencies, the private sector, the public, and the global community.

Five NWS offices have meteorologic and hydrologic forecasting responsibility in the state of Idaho. The Weather Forecast Office (WFO) located in Boise is the State liaison office for the NWS to state and other federal agencies. The Boise WFO coordinates the actions of all the NWS offices in Idaho. The Boise WFO also provides the meteorologic and hydrologic forecasts and warnings for southwest Idaho and southeast Oregon. The WFO located in Spokane, Washington provides meteorologic and hydrologic warnings and forecasts for the river

basins in the Idaho Panhandle. The WFO in Missoula, Montana provides service to the central mountain areas. The WFO Pocatello provides service to eastern Idaho excluding the Bear River drainage, and the WFO in Salt Lake City, Utah provides warnings and forecasts to the extreme southeastern counties of Idaho in the Bear River drainage.

The NWS has no authority to force persons to take action to avoid personal injury or loss of property during adverse weather and flooding situations. The NWS also has no regulatory or enforcement authority during drought events. The NWS provides real-time data and climatological summaries that are available to the public and other agencies. This data can be accessed through many web sites including the NWS web sites and the Western Region Climate Center's web site. Idaho NWS web site addresses are:

- <http://www.wrh.noaa.gov/Boise>
- <http://www.wrh.noaa.gov/Spokane>
- <http://www.wrh.noaa.gov/Missoula>
- <http://www.wrh.noaa.gov/Pocatello>
- <http://www.wrh.noaa.gov/SaltLake>

Much of the climatic data can be found at the Western Region Climate Center web site (<http://www.wrcc.dri.edu>). Climate data can also be found for the whole United States at the National Climatic Data Center at Asheville, NC (<http://www.ncdc.noaa.gov>).

Weather forecasts in the short and long range can be obtained from the NWS. Currently, detailed forecasts are made out to seven days and are locally prepared for each region of the state by the closest NWS office. These forecasts are available on the NWS web sites listed in the previous paragraph. Longer term forecasts, the 6- to 10-day and the 30- to 90-day are prepared at the Climate Prediction Center of the NWS. This information and other climatic, long term threat assessments can be accessed at their web site (<http://www.cpc.ncep.noaa.gov/index.htm>).

The local hydrologic forecasts and drought statements are issued by each NWS office for their area. The forecasts and statements are based on forecasts released by the NWS Northwest River Forecast Center (NWRFC) in Portland Oregon. The NWRFC maintains a hydrologic forecast model and provides hydrologic forecast guidance

for all of Idaho excluding the Bear River drainage that is handled by the Colorado Basin River Forecast Center (CBRFC) in Salt Lake City, Utah.

The NWRFC coordinates with the NRCS to prepare and publish water supply forecasts for approximately 75 sites around Idaho. These "Final" forecasts are released during the first week of each month, January through May, and provide volume forecasts for the runoff season. The RFC also provides "Early Bird" and "Midmonth" volume forecasts to update the information given in the "Final" forecasts. The "Early Bird" is generally run around the last or first day of the month before all the data is available for the coordinated "Final" forecast. The "Midmonth" is usually issued around the middle of the month. The RFCs also provide Peak Flow and Crest Stage Forecasts for the spring runoff period. All of these forecasts are all available on the NWS web sites listed above or at the NWRFC's web site (<http://www.nwrhc.noaa.gov>).

The NWS also coordinates with the USGS to provide telemetry on some river gage sites. River gage data can be accessed at the NWS on the web sites or by contacting an office. River data are exchanged and shared daily among a variety of federal organizations that run and maintain a large network of river gages. These organizations are primarily the USGS, NWS, BOR and COE.

U.S. Forest Service

Management of national forests is mandated by numerous federal laws and executive orders. Specific authority with reference to drought does not exist. However, inherent in all Forest Service management is stewardship of the land and resources of the United States. When and if a drought occurs, the Forest Service will change its land management practices to assure that the permanent long-term productivity of the land and the resources produced by it are adequately protected.

The Forest Service perceives that the greatest economic, social, and ecological impact of drought is associated with the increased risk of wildfire. About 53,000 acres of forested land have been lost annually to wildfire. In drought

years the likelihood of large catastrophic fires increases. Fire restrictions are frequently put in place to reduce the risk. Efforts are increased to actively manage areas that are overstocked, where excessive fuel loading and fuel ladders exist, and habitat improvement project work is delayed. Timber mortality increases as a result of reduced plant vigor, which increases the fire risk in future years. There is usually a pronounced increase in insect populations that can lead to epidemic levels during extended drought cycles. The Forest Service monitors these insect population levels and takes action where critical Threatened and Endangered species habitat or watersheds would be significantly impacted. Areas are closed to recreation, hunting, fishing, and fuel wood cutting, as well as numerous other social activities. Millions of dollars are spent not only on fire prevention and suppression efforts, but also on emergency and long-term fire restoration projects.

Besides wildfire, the Forest Service perceives that the next largest impact from drought is to grazing land resources. However, the Forest Service also recognizes that, with proper management, adverse effects of drought can be minimized. Consequently, the Forest Service can develop advance plans with other public land management agencies (U.S. Bureau of Land Management and Idaho Department of Lands) to prevent long-term damage.

Through proper coordination, the Forest Service can expect to prevent overuse of Idaho's rangelands and avoid adverse impacts to fish, wildlife, natural areas, water quality and long-term forage trends. This can be done through a coordinated effort of adjustments to existing allotment plans and their terms and conditions among the agencies in coordination with adjoining landowners.

USDA State Emergency Board

The State Emergency Board is composed of all U.S. Department of Agriculture (USDA) agencies represented in the State. The Board coordinates with state agencies through the Idaho Bureau of Disaster Services. Each county also has an emergency board composed of the USDA agencies represented in the county. These USDA agencies include: Farm Service Agency (FSA), Rural Development (RD), Natural Resource Conservation Service (NRCS), U.S. Forest Service (USFS) and the County Extension Service (CES).

The primary function of this Board is to provide information used in evaluating the need for implementing various federal assistance programs. Generally, these requests are initiated by the local county, which requests an emergency declaration from the Governor's Office. County emergency boards complete disaster-assessment reports when the governor requests disaster assistance from the federal government through the Secretary of Agriculture.

6.3 LOCAL GOVERNMENTS

Counties

The Board of County Commissioners may pass all ordinances and rules and make regulations necessary for carrying into effect or discharging the powers and duties provided by Idaho state law.

In an emergency water shortage situation, a county could register warrants to meet costs of addressing a drought. The 10-mill levy allowed under Article 7, Section 15 of the Idaho Constitution, could be used to repay those warrants. At the end of the fiscal year, any balances in other county funds would be used first to repay the warrants; the emergency levy to be used to pay the outstanding amount.

Idaho Code § 31-820 gives the Board of County Commissioners the power "to make and enforce such rules and regulations...as may be necessary." These powers were supplemented with the specific power to enact ordinances in *Idaho Code §31-714*. Most ordinances must be published in county newspapers, save in three exceptions listed in *Idaho Code § 31-715*.

Cities

The Association of Idaho Cities (AIC) has in its membership 182 incorporated cities representing over 99 percent of Idaho's urban population. The AIC provides technical assistance to its members on a broad range of topics and maintains a library of resource materials, including municipal ordinances.

Water conservation programs within cities have either proclamations or ordinances as their legal basis. Cities have authority to restrict the use of water by their residents in emergency situations. Restrictions such as water rationing may be declared by proclamation in the event of an

emergency water shortage or by ordinance. An ordinance may be preferable because the ordinance can indicate what conditions must be present in order to declare that water use be restricted. The creation of the ordinance and the requirements for publication of the ordinance allow for sufficient public notice of the city's intent to enact policy on water use.

Water rationing ordinances can be constructed so that different stages of water saving can be implemented depending upon the water shortage conditions. For example:

Stage 1 - water conservation procedures could include such things as urging residents to avoid landscape watering except for every other day for a maximum amount of time.

Stage 2 - water rationing procedures would automatically go into effect when a certain amount of water is used in the previous (Stage 1) day. Stage 2 conditions could require public notice of rationing requirements, which could include such things as restricting landscape watering to specific times of day, prohibiting the washing of automobiles with water hoses and prohibiting the filling of swimming pools.

Stage 3 - water rationing procedures could go into effect depending upon the previous day's (Stage 2) consumption of water. If a preset threshold is exceeded, then additional restrictions could be imposed.

Stage 4 - procedures could be even more restrictive. However, the ordinance could require city council review of the water administrator's implementation of the ordinance as a matter of oversight on city policy.

The water conservation or rationing ordinance should include sections relating to public notice and the use of local media in explaining the water shortage situation. The ordinance could also specify that additional information be sent with monthly water billings to residents. Furthermore, the ordinance should provide for penalties to be imposed for violations, as well as other language that would ensure enforcement of the various stages implemented. Finally, the ordinance could include positive reinforcement mechanisms such

as award programs for water conservation. (For further information contact the Association of Idaho Cities, 3314 Grace St., Boise, Idaho, 83703, (208) 344-8594.)

7 Water Administration and Distribution

7.1 WATER DISTRIBUTION AUTHORITY

The constitution and statutes of the State of Idaho declare all waters of the state, when flowing in their natural channels, including waters of all natural springs and lakes within the boundaries of the state, and ground waters of the state, to be public waters. The constitution and statutes of the State of Idaho also guarantee the right to appropriate the public waters of the state. When a private right to the use of public waters is established by appropriation, a water right is established that is a real property right, much like property rights in land.

The constitution and statutes of the state protect private property rights, including water rights. A water right is the right to divert the public waters of the state and put them to beneficial use, in accordance with one's priority date.

The right to divert and use water in Idaho follows the Prior Appropriation Doctrine that essentially provides that "the first in time is the first in right."

During times of shortage, water is distributed by priority wherein the right with the earliest priority date is entitled to receive water first.

Article XV, Section 3, of the Idaho Constitution provides a preference of uses as determined by type of use. Domestic is listed as the highest use, then mining and milling (in mining districts only), agriculture and manufacturing. In order for a "higher" use to take preference over a "lower" use that has an earlier priority, compensation would need to be paid for the taking or partial taking of the prior right.

Other provisions in the Idaho Code insure that water is available to those entitled to its use.

Idaho Code § 42-351 provides authority to prevent the illegal diversion of water. *Idaho Code* § 42-1805(7) provides authority for the declaration of a moratorium in connection with development under pending applications and permits. While not administered by the department, *Idaho Code, Title 18, Chapter 43*, consists of criminal statutes in connection with the interference with ditches, dams, canals, headgates and measuring devices and larceny of water.

IDWR has the authority to require the installation and maintenance of headgates and measuring devices to assist the watermaster in distribution of water. The 1994 Legislature authorized IDWR to require the measurement and reporting of water diversion by water users. The first phase of a statewide measurement and reporting program begins in 1995 in Administrative Basin 36 which includes parts of Gooding, Jerome, Lincoln, Minidoka, Blaine and Butte counties. IDWR will require measurement of water use by both ground water and surface-water users.

Water users may install a measuring device on wells and other diversions to measure flow rates and annual volume diverted and report that information to IDWR. Alternatively, a water user may choose to provide technical information about the well which can then be combined with power consumption records for the well so the annual amount of water withdrawn or diverted can be calculated. Domestic, stockwater and certain other small uses of water will not be included in the measurement program.

An adjudication is a court action for the determination of existing water rights, which results in a decree that confirms and defines each water right. If the water rights on a particular source of water have been adjudicated, the Department of Water Resources is authorized to create a water district.

Water users within a water district meet annually to elect a watermaster and any special deputies needed for the delivery of stored water. If a watermaster is not elected, IDWR has the authority to appoint one. Water districts most commonly operate in connection with the distribution of surface water but can involve ground water.

7.2 IRRIGATION DISTRICTS AND CANAL COMPANIES

Irrigation companies that were organized for profit under the Carey Act played an important role in the development of irrigated lands in Idaho. However, many of these companies failed. Those that survived turned the systems over to the water users who have formed mutual canal companies or irrigation districts. While the organization and management of these conveyance systems vary in form and size, they are generally nonprofit organizations, operating for members' use alone to assure water delivery to each user. They collect funds from members as necessary to operate and maintain the delivery system and meet the financial obligations of the organization. Counting the unincorporated mutual ditch companies, incorporated mutual ditch companies, mutual canal companies and irrigation districts there are over 600 irrigation organizations in Idaho.

Unincorporated Mutual Ditch Groups

The unincorporated mutual ditch groups are the simplest of all these organizations and usually involve a relatively small number of participants. Such groups may or may not be governed by formal rules, regulations or agreements. If there is no agreement to the contrary, the ditch, ditch right-of-way and the physical improvements are held by the users as tenants-in-common. The water rights, however, are held singly and separately by each tenant. Each owner is required to contribute a proportionate share of expense or labor in maintenance of the common ditch or canal.

Incorporated Mutual Ditch or Canal Companies

Individuals owning water rights may unite and incorporate their organization to form a company for construction, maintenance and management of an irrigation delivery system. These nonprofit incorporated organizations are referred to as mutual ditch or canal companies. Their assets are primarily limited to water rights held by members and the ditch system; their purpose is the distribution of water, not profit, to shareholders.

This aspect of mutual ditch companies sets them apart from other types of corporations. Accordingly, special statutory provisions exist dealing exclusively with ditch, canal and reservoir

companies to augment general state corporation law. Management is provided by a board of directors elected by the shareholders in accordance with the provisions of the company's by-laws.

Stock in a mutual ditch company is issued pursuant to the articles of incorporation or as provided for in the by-laws. The stock certificate represents a pro-rata right of ownership to the water supply of the ditch company. Stock is most commonly apportioned among shareholders on the basis of the number of acres of land to be irrigated or shares of water held. Expenses for the operation, maintenance and other costs of the company are assessed on the basis of stock ownership held.

Irrigation Districts

In 1902 Congress passed the National Reclamation Act. In Idaho, under its provisions, large modern irrigation systems governed by irrigation districts were developed. These include Rathdrum Prairie, Palisades, Michaud Flats, Minidoka, Little Wood River, Boise, Owyhee and Lewiston Orchards projects. These represent a large percentage of the acreage of irrigated land in the state.

Irrigation districts are quasi-public organizations formed for the purpose of securing water for irrigation and to provide ways and means of applying that water to the soil for reclamation purposes. State statutes have been enacted to enable those interested in the development and productivity of land to organize irrigation districts. These statutes provide for the irrigation and drainage of lands within the district. They also authorize districts to contract with the United States under the federal reclamation laws to construct irrigation and drainage works necessary to maintain the irrigability of the land, or to acquire, purchase, extend, operate, or maintain constructed irrigation works for the district.

A board of directors elected as prescribed by state statute governs irrigation districts. The board serving an irrigation district has broad powers to carry out the functions and purpose of irrigation districts as specified by state statutes. It can specifically assess the land for the financial needs of the district, as well as construct, acquire, purchase or condemn property, and make and execute all necessary contracts. A board can also employ such agents, attorneys, officers and employees as may be required to meet the needs of

the district. However, some costs to be incurred and some actions proposed by the board of directors must be approved by the electors of the district before action is taken.

The district also owns or controls all irrigation facilities, equipment and water rights used to irrigate the lands within the district. It may also rent water or contract for a water supply with the United States.

Other Management Groups

In order to improve and more efficiently manage them, groups of canal companies have consolidated administrative and management functions and operate under a joint board. In the most complex situations where the watermaster, representatives of the United States and a large number of operating groups are involved, a small committee has been formed to provide overall guidance.

7.3 SPECIAL WATER ADMINISTRATIVE ACTIONS

The Department of Water Resources can take the following actions to provide for full use of the available water supply, in accordance with valid rights for its use, during water shortages:

1. Increase supervision of water distribution from adjudicated sources.
 - a. Create or restore water districts for adjudicated streams as needed to distribute water to rightholders (regional offices and central office staff will be asked to identify streams that have been adjudicated, or which water districts may need to be established, and develop procedures for doing so);
 - b. Finalize and send copies of the *Watermaster Handbook* for use by watermasters and IDWR staff;
 - c. Provide staff training workshops on watermaster supervision for regional personnel; and
 - d. Hold training seminars at each region or one-on-one training as needed for watermasters.

2. Increase water right enforcement for non-adjudicated sources.

In water short years IDWR usually receives a number of reports and complaints concerning unauthorized use of water. As water users and the general public become aware of IDWR's increased authority under *Idaho Code §§ 42-351 and 42-1701B*, IDWR's ability to respond will be enhanced by:

- a. Issuance of a policy memo to guide staff action;
 - b. Staff training sessions; and
 - c. Issuance of letters to local law enforcement officers concerning handling of water right complaints.
1. Define procedures to expedite processing of applications for replacement water supplies.
 - a. Section 42-222A, Idaho Code, authorizes the department to grant expedited temporary change approvals after IDWR and the Governor have declared a drought emergency.
 - b. Section 42-202A, Idaho Code, authorizes the department to give expedited approvals for temporary uses of water up to 5 acre-feet per year.

7.4 WATER SUPPLY BANKS

The first example of water banking in Idaho was a rental pool employed for many years by the water users in eastern Idaho to allow entities with surplus storage to make it available to others that found their water supplies short in a particular year. Many canal companies hold natural flow rights with priorities that are adequate to provide a full supply of water except in years of low streamflow. In the good-to-high runoff years, the company finds itself with surplus water. It then must weigh the benefit to be received from renting the storage to another user against the risk that the storage space may not refill during the following season. If the risk is seen to be reasonable, the surplus is made available for other users.

The first known annual rental pool transfers occurred during the drought period of the 1930's when 14,700 acre-feet of water were rented for \$0.17 per acre-foot in 1932 and 40,000 acre-feet for \$0.25 per acre-foot in 1934. The annual rental

price increased to \$0.75 per acre-foot in 1978 with part of the fee going to the entity supplying water to the rental pool and part going to the water district to cover administrative costs.

In 1979 the Idaho Legislature formalized the program of annual leases of storage water entitlement. This followed a policy recommendation of the state water plan that was adopted by the Idaho Water Resource Board in 1976.

A water supply bank should be established for the purpose of acquiring water rights or water entitlement from willing sellers for reallocation by sale or lease to other new or existing uses. Legislation authorizing the water supply bank should also provide for the bank to be self-financing. . . . (Idaho State Comprehensive Water Plan - Part Two, December 29, 1976, p. 100; Idaho Code §§ 42-1761 through 42-1765).

Holders of existing rights may propose placing their natural flow water rights in the state water bank under the Water Resource Board or placing their storage water rights in rental pools operated by local committees appointed by the Board. The proposal to place the right in the bank is then submitted to the Director of the Idaho Department of Water Resources, who may approve or deny it based on consideration of several criteria.

Rental pool transactions generally result in changes in point of diversion of storage water, or changes in place or purpose of use. Such changes also have to meet several tests before being rented from the pool including:

1. Will the proposed use injure other existing water rights;
2. Is the water supply sufficient for the purpose for which it is sought;
3. Would the rental cause the use of water to be expanded beyond that authorized under the water right;
4. Will the water be put to a beneficial use; and
5. Will it conflict with the local public interest?

Idaho Code § 42-1765 provides that the Board may appoint a local committee to administer the rental pool. If this is done, the

Board approves the procedure of the local committee, which must provide protection to other water rights. The map on the next page shows the existing local rental pools/water supply banks (Figure 6).

In 1979 the Water Board appointed the Committee of Nine, which is the water district advisory committee, as the local committee to administer the program in the Upper Snake River basin (Water District 01). This district covers all of the area of the state served by water from the Snake River from the Wyoming border to the Milner diversion dam near Twin Falls. The river irrigates about 1.2 million acres from natural flows held by private canal companies together with about 4.1 million acre-feet of storage space in federal and private reservoirs. To date, all transactions have involved storage water from federal reservoirs.

The rental price for 2000 is \$2.95 per acre-foot, including the District administrative charge of \$0.75 per acre-foot and the Water Board surcharge of \$0.20 per acre-foot, for water diverted for uses above Milner Dam.

The 2000 rental price for water delivered below Milner Dam is \$10.50 per acre-foot, which includes the District administrative charge of \$0.75 per acre-foot and the Board surcharge of \$0.70 per acre-foot. An additional \$2.05 per acre-foot shall be held by the District for the primary purpose of offsetting costs associated with the Endangered Species Act and Federal claims and for the general improvements of the water district, including stream-gauging, automation, and hydrologic investigations in the District.

Any storage space holder who puts water in the rental pool for lease and then subsequently removes all or part of the water for the rental pool is charged a \$0.75 per acre-foot administrative charge by the District for the water with draw-down.

The rental pool procedures favor use of water for irrigation purposes. The reason for this is that the use of water for irrigation within the original service area of the federal reclamation projects results in return flow, which is available for reuse locally. Any use of water for power purposes downstream from the lowest diversion dam on the system makes the storage space subject to a "last to refill" rule for the following season. This has been one of the more controversial rules but one

that is believed to be essential to protect the water-right priority system.

Figure 7 shows the quantities of water which have been placed into the rental pool and which have been used for power/flow augmentation or irrigation purposes each year since the bank was created in 1979.

Several conclusions can be drawn from the rental pool record of use. First, the major use of water placed into the pool over the years has been for hydropower production and flow augmentation to benefit anadromous fish migration (Figure 7). Water for this purpose is turned out of the upstream reservoirs and passes through a series of 11 hydropower dams operated by the Idaho Power Company before leaving the state at Lewiston. The second conclusion is that the rental pool worked as intended in 1988 (the second year of the current drought) by providing over 136,000 acre-feet of water for irrigation companies which found themselves short that year.

In 1988 a second rental pool was started in the Boise River drainage basin. This system serves about 300,000 acres of irrigated farmland with natural flow and about one million acre-feet of storage in three federal reservoirs. The drought years of 1987-1989 brought about a desire for some flexibility in the management of the available water supplies, particularly the storage water. The price of stored water (including the administrative fee of \$0.32 per acre-foot) assigned to the rental pool shall be set by and approved by the Advisory Board of Water District 63 (Committee) each year. The 2000 rental price is \$6.50 in-basin and \$6.93 out-of-basin per acre-foot, which includes an administrative fee and the 10 percent surcharge in compliance with Idaho Water Resource Board Water Bank Rule 6.2.

In 1988 the Boise River rental pool took in and leased 26,518 acre-feet of water, which were used for irrigation purposes. In 1989 only 800 acre-feet of water were made available, of which 161 acre-feet were subsequently leased. Part was used to replace the effects of pumping of wells located near the river and part was used directly for irrigation purposes.

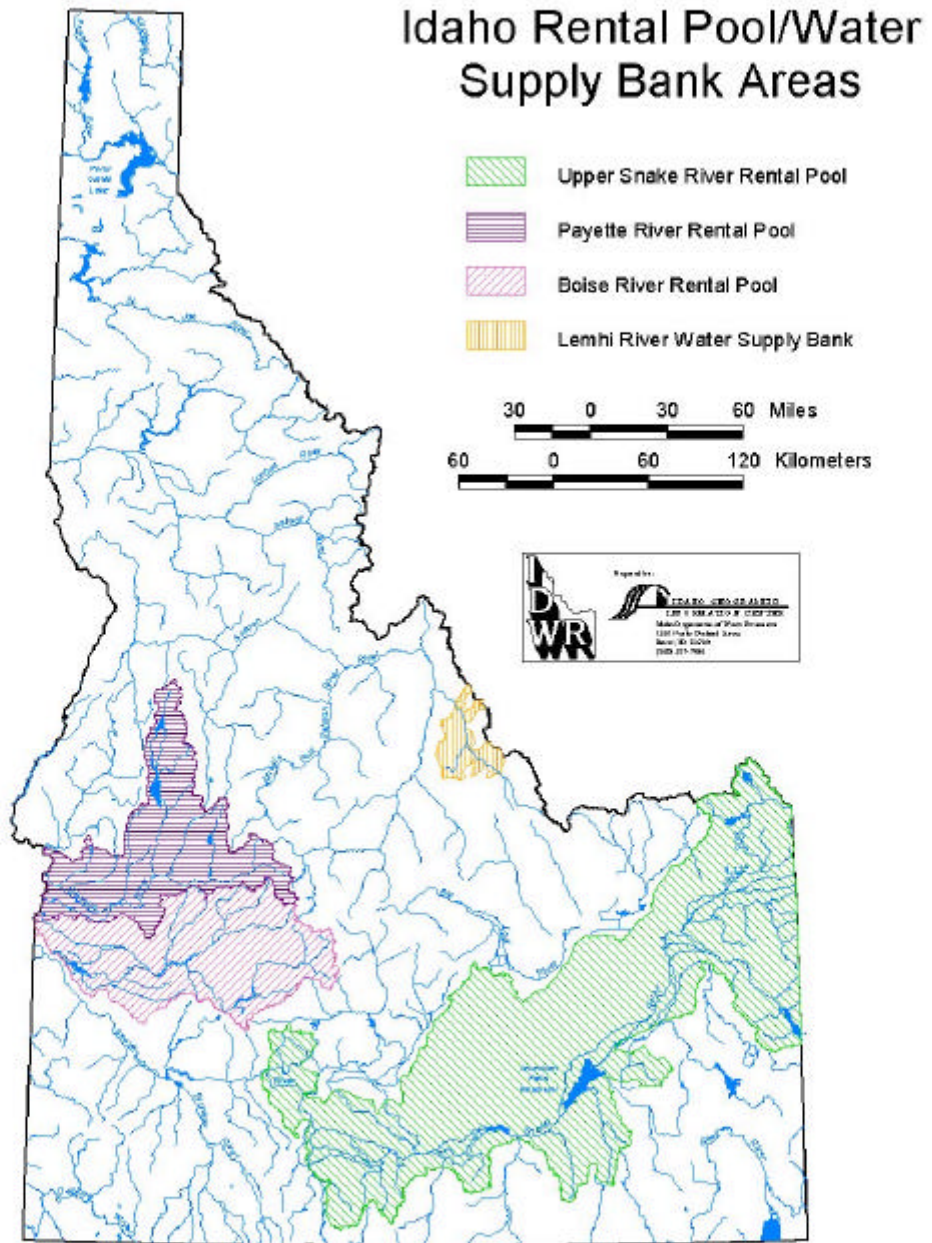


Figure 6. Idaho rental pool/water supply bank areas.

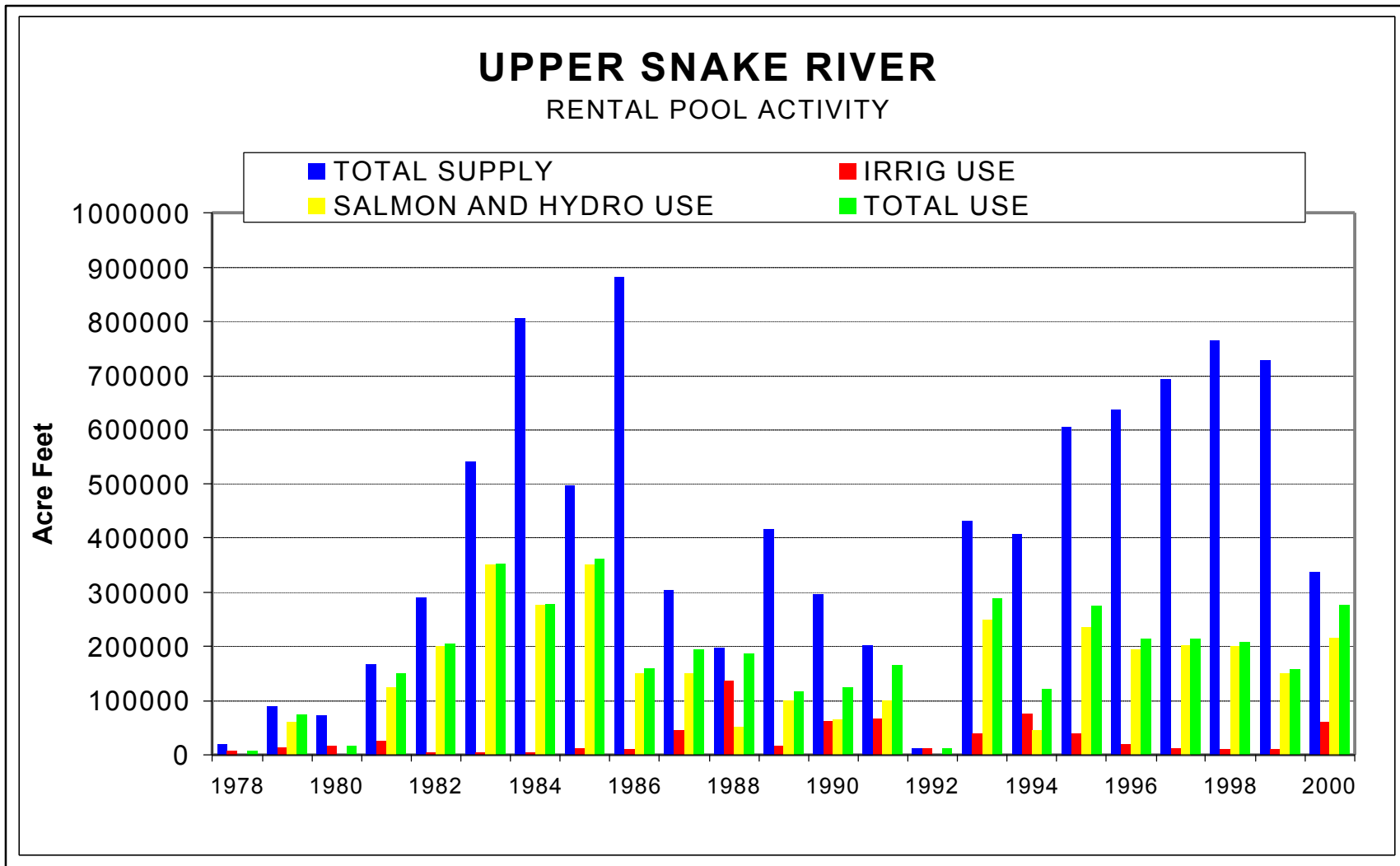


Figure 7. Upper Snake River rental pool supply and use.

In April 1990, the Idaho Water Resource Board approved the appointment of the advisory committee of local Water District 65, Payette River, to serve as the local committee to operate a rental pool in the Payette River Basin. This action facilitates the rental of stored water in the basin. Water District 65 extends from Mile Marker 5 (a point just upstream from the diversion of Washoe Ditch), upstream to the base of Black Canyon Dam. Water from any reservoir storage in the entire Payette River Basin can be placed in the rental pool. The 2000 price of stored water (including the administrative fee of \$1.00 per acre-foot) rented from the rental pool for use upstream from the mouth of the Payette River is \$3.20 per acre-foot plus a \$0.20 surcharge due the Board, under Idaho Water Bank rules and regulations. The price of stored water rented from the pool for use downstream from the mouth of the Payette River is \$5.65 plus \$0.42 surcharge due the Board, and \$1.00 per acre-foot administrative fee paid to the District. From the total price, \$4.23 per acre-foot shall be paid to the lessors, \$2.23 of which is for improvements within the lessor's delivery system. Special emphasis is given to improvements for better water management, water quality, and water use efficiencies. In the case that another pool or space holder should lease water for the purpose of arbitrage and consequently seek to secure replacement water from the rental pool, the price shall be the amount charged by that rental pool or space holder plus an additional \$1.00 per acre-foot administrative charge.

The 51st Idaho Legislature (2001) passed legislation authorizing the Idaho Water Resource Board to appropriate a minimum stream flow water right and to establish a water supply bank on the Lemhi River. The minimum stream flow and water supply bank were created to secure natural flow water to enhance anadromous fish passage. The legislation also provided for the appointment of a local rental committee to facilitate operation of the water supply bank. This is the first natural flow water supply bank operated in Idaho by a local committee.

In addition to these rental pools, there is opportunity for other water to be placed directly with the Board in the statewide program. This statewide bank has seen only very limited activity related to water rights for idle farmland.

The Idaho Legislature has enacted legislation that protects water rights placed in the water supply bank from the operation of state forfeiture statutes, which otherwise provides that water rights not exercised during a five-year period are lost. This will encourage more holders of rights to place them in the bank and make the water available for use for more productive purposes.

8 Water Supply Problems

8.1 AGRICULTURE

The valleys of the Snake River Plain and about 20 tributary streams are the major irrigated agricultural areas in Idaho. Irrigated agriculture accounts for 95 percent of the "consumptively" used water in Idaho; these are generally arid and semi-arid areas that require irrigation to produce crops.

Some irrigated agricultural areas in the state do not have storage reservoirs to bank water for future needs and are at the mercy of natural streamflow conditions. For example, there are small irrigated areas scattered across the Snake River Basin, some are above storage reservoirs and some in valleys of tributary streams to the Snake River.

There are also smaller basins in northern Idaho and some mountain valleys throughout the state that have irrigation. Some of these use ground water, but others rely on surface water. During low water years, the areas relying on surface water suffer from water shortages. They have more land to irrigate than low flows will provide for and no storage to supplement the flows. Under these conditions, farmers normally will forgo irrigating forage crops (hay and pasture) and use what water they have on cash crops (grain, potatoes, corn, etc.).

In some of these areas where ground water is available, wells have been drilled to back up and provide a more stable source of water supply and to protect against low water years. This alternate source, however, has been overdrafted in a number of areas such as those south of the Snake River, resulting in the designation of critical

ground water or ground water management areas (Figure 8).

Other irrigated areas of the state have limited storage available. This storage may carry irrigators through one low water year, but shortages result when two or more successive water-short years occur.

For the Snake River system, all of the surface and ground water that flows from the tributary streams is intercepted by and flows down the Snake River.

Most of the areas that divert from and have storage in the Snake River have an adequate water supply under most runoff conditions. However, a recurrence of extremely dry years such as occurred in 1934, 1935, 1961, 1988 and 1992 can cause shortages throughout the state including the Snake River areas.

Idaho contains one of the largest and most productive ground water reservoirs in the world, the Snake Plain Aquifer. This aquifer discharges as springs into the Snake River between Twin Falls and Hagerman in the region known as Thousand Springs.

The volume of water in this aquifer is large enough that it could provide for all regional needs during short water years if needed exchanges, pumping and distribution could be developed. This would be a major challenge for water administrators and planners, but could be a major benefit to the agricultural industry of the state.

The most extensive development of ground water for irrigation in northern Idaho is north of Coeur d'Alene in the Rathdrum Prairie. This aquifer yields copious amounts of ground water from properly constructed wells. No shortages have been experienced in the use of water from this aquifer.

There are other, smaller basins throughout the state that have ground water supplies that could be used to supplement irrigation needs during short water years. However, this is not always economically feasible since many of these areas grow only forage crops and the return in benefits may not justify drilling and operating wells.

Another alternative for protection against short irrigation water supplies would be to increase storage of surface water in areas that currently do

not have adequate storage supplies. This can be a very difficult alternative to accomplish because of environmental, recreational and other concerns. Also, in many of the smaller basins, the cost of building dams cannot be economically justified. Domestic water supplies in some isolated areas in the state are endangered by short water years. Some are areas where wells have been drilled into shallow aquifers that vary rapidly in depth depending upon surface water supplies. Normally, these areas are recharged from irrigation or high natural runoff, and a short water year will cause the ground water levels to drop below the existing pump levels. Generally, adequate water is available for domestic needs, even through a series of short water years; but with the continued drought cycle of 1987 to 1994, many domestic wells have gone dry. Delivery problems have occurred due to the limitation of the delivery systems or to inadequate well construction.

8.2 RECREATION AND TOURISM

Recreation and tourism can suffer greatly from unfavorable press relating to water shortages. A majority of the people who vacation in Idaho do so to enjoy the scenic beauty and clean, clear water. Many also come to hunt and fish. When word gets out at both the local and national levels that Idaho is in a drought, almost immediate economic impacts can be realized.

By and large, it takes a significant water shortage to limit the recreational potential. A 50 percent reduction in streamflow may not have significant impact or even be noticed by the fisherman or rafter. But the same 50 percent reduction might cause a serious problem for the farmer.

Of more concern during a water shortage is the potential for range and forest fires. An entire section of this report could be dedicated to this subject because fire can have a significant influence on recreation. There seems to be little doubt that when big fires are burning in Idaho or fire danger actually results in the closing of camping areas, an economic impact is felt.

Tourism and recreational groups and agencies must work very hard to overcome drought-related press. The best approach is to work with the water organizations and committees to build a positive information campaign. It is

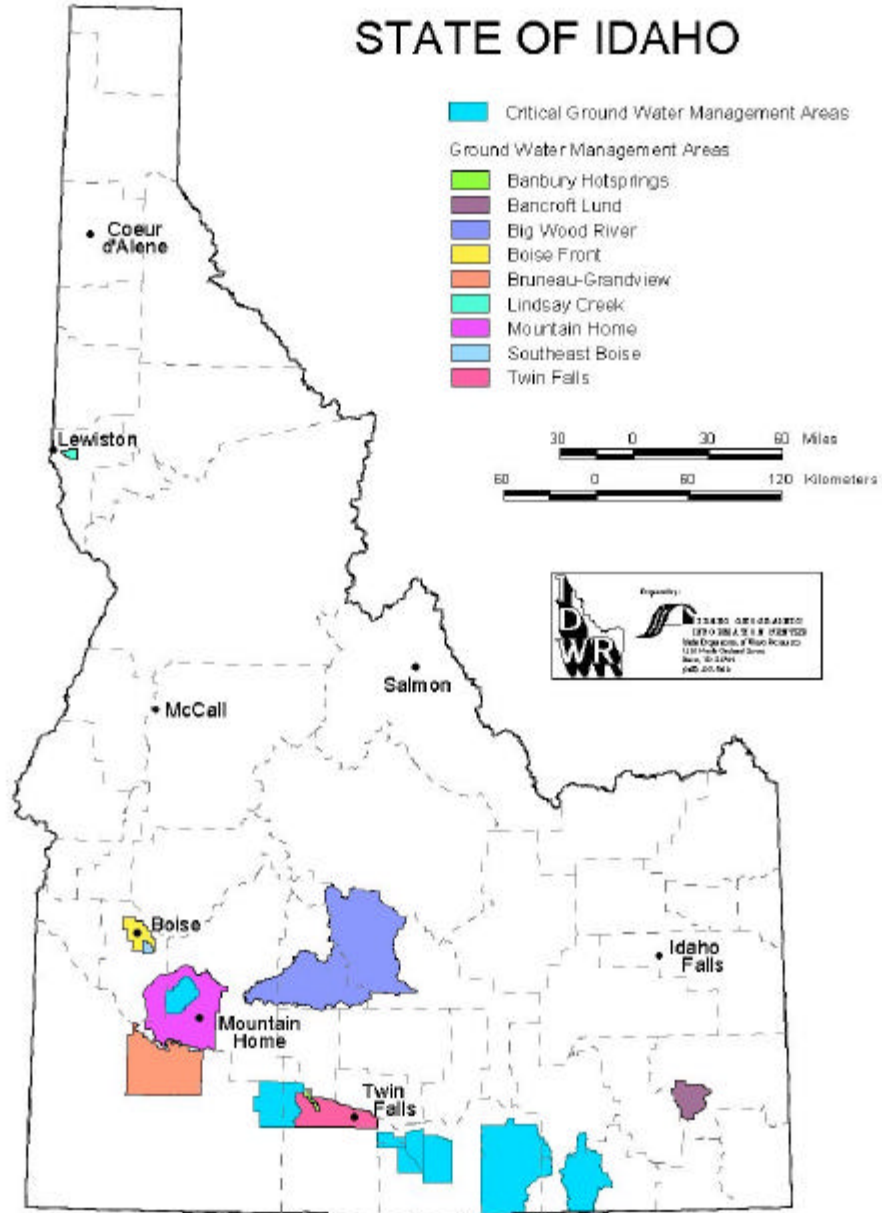


Figure 8. Critical ground water and ground water management areas in Idaho.

very important not to develop an adversarial relationship among various water interests. Serious negative publicity can result from a perceived competition for a scarce water supply.

8.3 MUNICIPAL, DOMESTIC, AND LIVESTOCK WATER

Most of the historic drought-related municipal water supply problems in Idaho were recorded in the communities south of the Snake River in southeastern Idaho. These communities are typified by water systems that rely on a combination of ground water from mountain springs and valley wells. The problems generally occur when the mountain springs flows are reduced due to the drought conditions.

Approximately six communities did implement some type of water conservation program in 1988. That program typically was an odd-address/even-address lawn-watering system. The city of Boise often implements a voluntary odd-even watering system during peak demand periods. This was due to system capacity rather than limited supply.

Due to the severity of the 1987-94 drought and the resulting impacts, it appears, by and large, that most municipal and domestic systems are adequate. This is to be expected since a majority, 90 percent, of the municipal and domestic supplies comes from deeper ground water sources. Major deep ground water aquifers are not as susceptible to rapid fluctuation as shallow aquifers or surface water. Most of the reported self-supplied domestic supply problems occurred in the shallow aquifer systems. Two situations accounted for more than 95 percent of the domestic supply problems in 1988—faulty well construction or deteriorated condition of the well and wells which were not drilled to deep enough levels.

Lack of livestock water was a significant problem in 1988 and was experienced mostly across the southern part of Idaho. Problems occurred when springs either went dry or intermittent streams dried up earlier than usual. Many ranchers were left with difficult decisions relative to the movement of livestock or how to provide emergency water supplies.

The livestock problem was further aggravated by requests from the Bureau of Land Management and the Forest Service that ranchers move off

grazing allotments earlier than normal. The primary reasons were to prevent damage to the resources, especially the riparian areas.

8.4 1988 AND 1992 IRRIGATION SURVEYS

In the fall of 1988 and 1992 a questionnaire relating to water delivery and use during the irrigation season was distributed to USDA-ASCS offices throughout the state (Appendix F). The survey form was completed by either the county NRCS Committee or by individual canal companies or irrigation districts. The objective of the survey was to provide feedback to the Water Supply Committee on the actual water management conditions for both surface and ground water. Since one of the Water Supply Committee's tasks during the 1988 to 1994 drought was to forecast water supply conditions, it was felt that information concerning observed water-management conditions would be valuable in improving future forecasts.

In evaluating the summary information presented here, readers should keep in mind that the responses are composites for entire counties or districts. Conditions for individual farms within the areas may have been considerably different than those reported in the survey. More specific information can be obtained from the Idaho Department of Water Resources.

Responses from over 100 irrigation districts in 42 counties were received in 1988. Total acreage covered in the responses was just over 3 million acres or approximately three-fourths of the estimated 4.1 million acres irrigated in Idaho. Of the 3 million acres included in the response, the amount of land idled or irrigated in 1988 is shown in Table 3.

Table 3. 1988 Irrigation Survey Idled and Irrigated Land Response

Total lands reported	3,030,000 acres
Land idled as a result of drought	296,000 acres
Land idled unrelated to drought	147,800 acres
Total reported land irrigated in 1988	2,585,600 acres

In total, about 15 percent of the land was idled, two-thirds of which, or 10 percent of the total average, was in response to the water supply situation. One-third of the total acreage idled was done so for reasons other than water supply.

Respondents were asked what percentage of a normal water supply was available for acres actually irrigated. Table 4 summarizes the water supply response for 1988 and 1992.

Table 4. Irrigation Survey Water Supply Response

Water Supply (Percent of Normal)	
	1988
Less than 50%	312,600 acres
Between 50% and 75%	466,300 acres
Greater than 75%	1,806,700 acres
	1992
Less than 50	271,792 acres
Between 50% and 75%	543,082 acres
Greater than 75%	302,466 acres

About 1.8 million acres or 70 percent of the total acreage had a 75 percent or greater supply in 1988, compared to only 27 percent in 1992. The location of this acreage is diverse, but includes major tracts irrigated from the Snake River, by ground water and by the Payette River. The next category, those lands having between 50 and 75 percent of normal supply, comprised 18 percent of the total in 1988 and 49 percent of the total in 1992. The smallest category, about 12 percent of the total, had less than 50 percent of a normal supply. These lands were widely distributed across the state and mainly consisted of areas irrigated from smaller tributary streams, often without storage reservoirs. Water-short lands with reservoir systems included North Richfield Tract (Magic Reservoir), Mountain Home Reservoir and Mackay Reservoir.

Nearly every respondent cited the hot, dry weather during the 1988 irrigation season as contributing to reduced yields and crop stress, even where supplies were adequate. Many irrigation systems were not designed with peak application rates high

enough to keep up with crop water use. Eighteen respondents mentioned problems with wells including reduced yields that required deepening wells or lowering pumps.

Several respondents mentioned that canal systems had difficulty operating properly with reduced flows. Users near the upper end of the canal received sufficient water while those at the end of the system received insufficient water.

The results obtained from the survey indicate that the Water Supply Committee's projections made at the beginning of the irrigation season were fairly accurate. Areas served by the major Snake River reservoirs and ground water areas had an adequate supply. Areas of major shortages were correctly identified as the tributary basins and areas served by smaller reservoirs or having no reservoir at all.

9 References

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APPENDIX A

FEDERAL WATER-RELATED DROUGHT
RESPONSE ASSISTANCE PROGRAMS

AND

OTHER RELATED FEDERAL PROGRAMS

(Information from *The Catalog of Federal Domestic Assistance*, Updated
December 2000, General Services Agency, Web site address www.cfda.gov)

CROP DISASTER PROGRAM (CDP) - CFDA # 10.073

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

The Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, Public Law 106- 78; Omnibus Appropriations Act, Public Law 106-113.

OBJECTIVES:

The Acts authorizes the Secretary to provide disaster assistance to producers who suffered crop loss because of adverse weather conditions. Disaster payment provisions apply if the crop could not be planted or production, both in quantity and quality, was adversely affected by: (1) Damaging weather, including drought (except when the crop is irrigated), excessive moisture, hail earthquake, freeze, tornado, hurricane, typhoon, volcano, excessive wind, excessive heat, or a combination thereof; or (2) related conditions of insect infestation, plant disease, or other deterioration of the crop, including aflatoxin, that is accelerated or exacerbated naturally because of damaging weather occurring before or during harvest.

TYPES OF ASSISTANCE:

Direct Payments with Unrestricted Use.

USES AND USE RESTRICTIONS:

Assistance under the Crop Disaster Program will be available for: (1) Crop losses on prevented planted acreage, reduced production of planted acreage, or reduced quality on certain crops; (2) value loss crops, including nursery and aquaculture; and (3) maple trees for syrup and orchard trees grown for commercial production of fruit and nuts. Direct financial compensation will be paid to producers with eligible crop losses greater than 35 percent compared to the historical average county yield or the producers actual production history (APH), whichever is greater. The loss threshold for trees is 20 percent. The payment limitation for 1999 CDP benefits is \$80,000 per person. There are no use restrictions on the benefits received under this program.

APPLICANT ELIGIBILITY REQUIREMENTS:

Any producer that had a financial risk and received or would have received a share of the crop will be eligible for benefits, if all other requirements have been met. Eligible crops for the disaster program include: (1) NAP crops defined in FSA Handbook 1-NAP; (2) crops for which Federal crop insurance is available, regardless of whether insurance was purchased; (3) trees from which a crop is harvested. The producer must be able to show, with verifiable evidence, that the producer had an interest in the commodity produced or had control of the crop acreage on which this commodity was grown at the time of the disaster, which is the basis for the application for payment Highly Erodible Land and Wetland Restrictions apply to CDP benefits.

FINANCIAL INFORMATION:

Funding Provided: FY 1999 \$1,913,181,857; FY 2000 (estimated) \$1,298,824,000; and FY 2001 (estimated) \$0.

Range and Average of Financial Assistance: There is no minimum amount of assistance that may be received by an individual applicant. The national "person" limit (before national factoring) is \$80,000. Payments range from \$100 to \$80,000 before factoring.

INFORMATION CONTACTS:

Applications are filed at the local county office of the Farm Service Agency.
Agency address: <http://www.fsa.usda.gov/edso/>.

DISASTER RESERVE ASSISTANCE (DRAP) - CFDA # 10.452

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Agricultural Act of 1970, as amended, 7 U.S.C. 1427a.

OBJECTIVES:

To provide emergency assistance to eligible livestock owners, in a State, county, or area approved by the Secretary or designee, where because of disease, insect infestation, flood, drought, fire, hurricane, earthquake, hail storm, hot weather, cold weather, freeze, snow, ice, and winterkill, or other natural disaster, a livestock emergency has been determined to exist.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use

USES AND USE RESTRICTIONS:

Direct Payments are for unrestricted use. Feed on which cost-sharing is received: (a) Must be fed to the producer's livestock; (b) may not be resold; and (c) must be utilized during the established feeding period.

APPLICANT ELIGIBILITY REQUIREMENTS:

Applicants must meet all of the following conditions as determined by the approving official: (1) May not have total annual gross revenue in excess of \$2.5 million; (2) be actively engaged in farming with at least 10 percent of gross revenue derived from the production of grain or livestock; (3) must have suffered a 40 percent or greater loss of normal feed production on the farm; and (4) have insufficient feed available for eligible livestock for the duration of the emergency; and (5) applicants eligible to receive program benefits under more than one program administered by the Secretary for the same crop loss must choose whether to receive other program benefits or disaster reserve assistance benefits. Applicants are not eligible for both.

FINANCIAL INFORMATION:

Funding Provided: (Direct Cash Payments) Dairy Production Disaster Assistance Program: FY 1999 \$9,029,508; FY 2000 (estimated) \$40,000,000, and FY2001 (estimated) \$0; American Indian Livestock Assistance Program: FY 1999 \$3,896,452; FY 2000 (estimated) \$7,104,000; and FY 2001 (estimated) \$1,500,000; Disaster Reserve Flood Compensation Program: FY 1999 \$40,914,645; FY 2000 (estimated) \$0; and FY 2001 (estimated) \$24,000,000; Crop Disaster Assistance Program: FY 1999 \$1,913,181,857; FY 2000 (estimated) \$1,298,824,000; and FY 2001 (estimated) \$0; and Livestock Indemnity Program: FY 1999 \$3,997,478; FY 2000 (estimated) \$14,000,000; and FY 2001 (estimated) \$0.

Range and Average of Financial Assistance: Not applicable.

INFORMATION CONTACTS:

Consult the local FSA office.

Agency Address: <http://www.fsa.usda.gov>.

EMERGENCY COMMUNITY WATER ASSISTANCE GRANTS - CFDA 10.763

FEDERAL AGENCY:

RURAL UTILITIES SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Consolidated Farm and Rural Development Act, Section 306A; Food, Agriculture, Conservation, and Trade Act of 1990, Title XXIII, Public Law 101-624.

OBJECTIVES:

Through the Emergency Community Water Assistance Grant Program, the Rural Utilities Service (RUS) is authorized to help rural residents who have experienced a significant decline in quantity or quality of water to obtain adequate quantities of water that meet the standards of the Safe Drinking Water Act.

TYPES OF ASSISTANCE:

Project Grants.

USES AND USE RESTRICTIONS:

Grant funds may be used to extend water lines on existing systems; to construct new water lines; to repair existing systems; to perform significant maintenance on existing systems; to construct new wells, reservoirs, transmission lines, treatment plants, storage tanks, etc.; to replace equipment; to provide connection and/or tap fees; to pay costs incurred within six months of the date an application was filed with USDA to correct an emergency situation that would have been eligible for funding under this program; to provide funds for any other appropriate related purposes, such as, legal fees; engineering fees; recording costs; environmental impact analyses; archaeological surveys; possible salvage or other mitigation measures; planning, establishing, or acquiring rights associated with developing sources of treating, storing, or distributing water; and to assist rural water systems in complying with the requirements of the Federal Water Pollution Control Act or the Safe Drinking Water Act, when failure to comply is directly related to a recent decline in quality of potable water. Grants provided under this program shall not be used to assist a rural area or community with a population in excess of 10,000; to assist a rural area that has a median household income in excess of the statewide nonmetropolitan median household income according to the most recent decennial census of the U.S.; to finance facilities which are not modest in size, design, and cost; to pay loan or grant finder's fees; to pay any annual recurring costs considered to be operational expenses; to pay rental for the use of equipment or machinery owned by the rural community; to purchase existing systems; to refinance existing indebtedness; and to make reimbursement for projects developed with other grant funds. Grants made to alleviate a significant decline in quantity or quality of water available from the water supplies in rural areas that occurred within two years of filing an application with USDA cannot exceed \$500,000. Grants for repairs, partial replacement, or significant maintenance on an established system cannot exceed \$75,000.

APPLICANT ELIGIBILITY REQUIREMENTS:

Rural Utilities Service may make grants to public bodies, private nonprofit corporations, and political subdivisions of a State, as well as Indian tribes.

FINANCIAL INFORMATION:

Funding Provided: (Grants) FY 1999 \$17,500; FY 2000 (estimated) \$17,500; and FY 2001 (estimated) \$0.

(NOTE: Grants are for Presidential declared disasters only.)

Range and Average of Financial Assistance: \$10,000 to \$500,000. \$252,758.

INFORMATION CONTACTS:

Contact Rural Development District Office.

Agency Address: <http://www.rurdev.usda.gov>.

EMERGENCY CONSERVATION PROGRAM (ECP) - CFDA # 10.054

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Agricultural Credit Act of 1978, Title IV, Public Law 95-334, 16 U.S.C. 2201-2205.

OBJECTIVES:

To enable farmers to perform emergency conservation measures to control wind erosion on farmlands, to rehabilitate farmlands damaged by wind erosion, floods, hurricanes, or other natural disasters and to carry out emergency water conservation or water enhancing measures during periods of severe drought.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use.

USES AND USE RESTRICTIONS:

Following a natural disaster, the county FSA committee determines, with concurrence from the State FSA committee, to make the program available in the county. Emergency cost-sharing is limited to new conservation problems created by natural disasters which, if not treated will impair or endanger the land, materially affect the productive capacity of the land, represent damage that is unusual in character and, except for wind erosion, is not the type that would recur frequently in the same area and will be so costly to rehabilitate that Federal assistance is or will be required to return the land to productive agricultural use. Eligible drought situations for water enhancing measures must be determined by the Deputy Administrator for Farm Programs, FSA.

APPLICANT ELIGIBILITY REQUIREMENTS:

Any person who as owner, landlord, tenant, or sharecropper on a farm or ranch, including associated groups, and bears a part of the cost of an approved conservation practice in a disaster area, is eligible to apply for cost-share conservation assistance.

FINANCIAL INFORMATION:

Funding Provided: (Direct payments) FY 1999 \$39,321,098; FY 2000 (estimated) \$90,853,016; and FY2001 (estimated) \$31,921,330.

Range and Average of Financial Assistance: \$50 to \$64,000; \$2,681.

INFORMATION CONTACTS:

Farmers are advised to contact their local county FSA office after a natural disaster has occurred to determine whether the program is available in the county and to determine eligibility for emergency cost-share assistance. Agency Address: <http://www.fsa.usda.gov>.

EMERGENCY LOANS - CFDA # 10.404

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Consolidated Farm and Rural Development Act, as amended, Subtitle C, Sections 321-330, Public Law 92-419, 7 U.S.C. 1961- 1984; Public Law 96-438; Public Law 97-35; Public Law 98-258; Public Law 99-198; Public Law 100-233; Public Law 100-387; Public Law 101-624.

OBJECTIVES:

To assist established (owner or tenant) family farmers, ranchers and aquaculture operators with loans to cover losses resulting from major and/or natural disasters, which can be used for annual farm operating expenses, and for other essential needs necessary to return disaster victims' farming operations to a financially sound basis in order that they will be able to return to private sources of credit as soon as possible.

TYPES OF ASSISTANCE:

Direct Loans.

USES AND USE RESTRICTIONS:

Loan funds may be used to repair, restore, or replace damaged or destroyed farm property (real and chattel) and supplies which were lost or damaged as a direct result of a natural disaster; under certain conditions, refinance secured and unsecured debts made necessary by the disasters; finance adjustments in the farming, ranching or aquaculture operation(s) determined necessary to restore or maintain applicants' operations on a sound financial basis equivalent to their predisaster potential. Loans are made in counties: (1) Named by the Federal Emergency Management Agency as being eligible for Federal assistance under a major disaster or emergency declaration by the President; (2) designated as natural disaster areas by the Secretary of Agriculture; and (3) designated by the FSA Administrator for severe physical losses, only, as a result of a natural disaster.

APPLICANT ELIGIBILITY REQUIREMENTS:

Requires that an applicant: (a) Not have caused a loss to the Agency after April 4, 1996, or received debt forgiveness on no more than 1 occasion prior to April 4, 1996. (b) be an established family farmer, rancher, or aquaculture operator (either tenant-operator or owner-operator), who was conducting a farming operation at the time of occurrence of the; (c) have suffered qualifying crop loss and/or physical property damage caused by a designated natural disaster; (d) be a citizen of the United States or legal resident alien, (e) be unable to obtain suitable credit from any other source(s) to qualify for subsidized loss loans; (f) have sufficient training or farming experience in managing and operating a farm or; (g) be able to realistically project a feasible and sound plan of operation; (h) be a capable manager of the farming, ranching, or aquaculture operations; (i) have legal capacity to contract for the loan; (j) obtain eligibility certification; (k) provide adequate collateral to secure the loan request; (l) have crop insurance if available for affected crops.

FINANCIAL INFORMATION:

Loans Provided: (Direct Loans) FY 1999 \$329,849,000; FY 2000 (estimated) \$572,000,000; and FY 2001 (estimated) \$150,065,000.

Range and Average of Financial Assistance: \$500 to \$500,000; \$58,000.

INFORMATION CONTACTS:

Contact the local FSA office. Agency Address: <http://www.fsa.usda.gov>.

LIVESTOCK ASSISTANCE PROGRAM (LAP) - CFDA # 10.066

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, Public Law 106- 78; Omnibus Appropriations Act, 2000, Public Law 106-113.

OBJECTIVES:

To provide direct payments to eligible livestock producers who suffered grazing losses due to drought, hot weather, disease, insect infestation, fire, hurricane, flood, fire, earthquake, severe storm, or other disasters during the crop year. Benefits will be provided to eligible livestock producers only in those counties where a severe natural disaster occurred, and that were subsequently approved by the Deputy Administrator for Farm Programs.

TYPES OF ASSISTANCE:

Direct Payments with Unrestricted Use.

USES AND USE RESTRICTIONS:

LAP provides direct payments to eligible livestock producers who suffered 40 percent or greater grazing loss due to a natural disaster. There are no use restrictions on the benefits received under this program.

APPLICANT ELIGIBILITY REQUIREMENTS:

Applicants must meet all of the following conditions as determined by the approving official: (1) May not have total annual gross revenue in excess of \$2.5 million; (2) must have grazing land in a county or parish or part of a county or parish approved for LAP; and (3) suffered a 40 percent or greater grazing loss for 3 consecutive months during the LAP payment period approved for the county. Applicants must also be an established livestock producer who is: (1) Actively engaged in farming; (2) a citizen of, or legal resident alien in the United States; (3) a farm cooperative, private domestic corporation, partnership, or joint operation in which a majority interest is held by the members, stockholders, or partners who are citizens of, or legal resident alien of the United States; (4) any Indian tribe or tribal organization of the Indian Self-Determination and Education Assistance Act; (5) any organization under the Indian Reorganization Act or Financing Act; and (6) any economic enterprise under the Indian Financing Act of 1974.

FINANCIAL INFORMATION:

Funding Provided: (Grants) FY 1999 \$269,532,960; FY 2000 (estimated) \$189,214,000; and FY 2001 (estimated) \$0.

Range and Average of Financial Assistance: There is no minimum amount of assistance which may be received by an individual applicant. The national "person" limit (before national factoring) is \$40,000. In 1999: \$10 to \$40,000; \$875.

INFORMATION CONTACTS:

Contact the county FSA office. Agency Address: <http://www.fsa.usda.gov>.

NONINSURED CROP DISASTER ASSISTANCE (NAP) - CFDA # 10.451

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Federal Crop Insurance Reform Act of 1994, (Public Law 103-354; Federal Agriculture Improvement and Reform Act of 1996, 15 U.S.C. 714b and 714c; 7 U.S.C. 7333.

OBJECTIVES:

To provide eligible producers of eligible crops with protection comparable to the catastrophic risk protection plan of crop insurance and to help reduce production risks faced by producers of crops for which catastrophic risk protection plan of crop insurance under the Federal Crop Insurance Act, as amended, is not available. The noninsured crop disaster assistance program reduces financial losses that occur when natural disaster cause a catastrophic loss of production or prevented planting of an eligible crop. Payment eligibility is based on an expected yield for the area and the producer's approved yield based on actual production history, or a transitional yield if sufficient production records are not available. Production for both the applicable area expected yield and the individual producer approved yield for the unit must fall below specified percentages in order to be eligible for payment under this part.

TYPES OF ASSISTANCE:

Direct Payments with Unrestricted Use.

USES AND USE RESTRICTIONS:

Basic program eligibility requirements include: (1) A geographic area within the continental United States that has suffered a greater than 35 percent loss of production of eligible crops because of damaging weather, or related condition, including but not limited to heat, insect infestation, or disease which occurs as a result of an adverse natural occurrence or damaging weather occurring prior to or during harvest that directly causes, accelerates, or exacerbates the destruction or deterioration of an eligible crop; (2) minimum producer requirements are at least 5 producers on separate and distinct farms of crops for which the NAP area has been designated; (3) eligible crops are any commercial agricultural crop (excluding livestock and their by-products), commodity, or acreage of a commodity grown for food or fiber for which catastrophic coverage is not available

APPLICANT ELIGIBILITY REQUIREMENTS:

Applicants must meet all of the following conditions as determined by the approving official: (1) May not have total annual gross revenue in excess of \$2 million for the preceding tax year for which assistance is requested; (2) may not receive payments in excess of \$100,000 per person per crop year; (3) must have suffered a greater than 50 percent loss of production; and (4) must choose whether to receive other program benefits or benefits under more than one program administered by the Secretary for the same crop loss. Applicants are not eligible for both.

FINANCIAL INFORMATION:

Funding Provided: (Direct cash payments) FY 1999 \$53,929,917; FY 2000 (estimated) \$74,629,000; and FY 2001 (estimated) \$85,500,000.

Range and Average of Financial Assistance: Not applicable.

INFORMATION CONTACTS:

Contact local county FSA office. Agency Address: <http://www.fsa.usda.gov>.

CONSERVATION RESERVE PROGRAM (CRP) - CFDA # 10.069

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Food Security Act of 1985, Title XII, Public Law 99-198, as amended; Food, Agriculture, Conservation, and Trade Act of 1990, Public Law 101-624; Federal Agriculture Improvement and Reform Act of 1996, Public Law 104-127.

OBJECTIVES:

To protect the Nation's long-term capability to produce food and fiber; to reduce soil erosion and sedimentation, improve water quality, and create a better habitat for wildlife.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use.

USES AND USE RESTRICTIONS:

Eligible owners or operators may place highly erodible or other environmentally sensitive land into a 10-15 year contract. The participant, in return for annual payments, agrees to implement a conservation plan approved by the local conservation district for converting highly erodible cropland or other environmentally sensitive land to a long-term resource conserving cover, i.e., eligible land must be planted with a vegetative cover, such as, perennial grasses, legumes, fobs, shrubs, or trees. The participant agrees to reduce the aggregate total of allotments and quotas by an amount based on the ratio of the total cropland acreage on each farm, to the total acreage on each farm subject to the CRP contract. Financial and technical assistance are available to participants to assist in the establishment of a long-term resource conserving cover.

APPLICANT ELIGIBILITY REQUIREMENTS:

An individual, partnership, association, Indian Tribal ventures corporation, estate, trust, other business enterprises or other legal entities and, whenever applicable, a State, a political subdivision of a State, or any agency thereof may submit an offer to enroll acreage.

FINANCIAL INFORMATION:

Funding Provided: FY 1999 \$1,513,849,000; FY 2000 (estimated) \$1,630,089,000; and FY 2001 (estimated) \$1,689,893,000.

Range and Average of Financial Assistance: \$50 to \$50,000; \$4,000.

INFORMATION CONTACTS:

Contact the local FSA office. Agency Address: <http://www.fsa.usda.gov>.

CROP INSURANCE - CFDA # 10.450

FEDERAL AGENCY:

RISK MANAGEMENT AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Federal Crop Insurance Act, as amended, 7 U.S.C. 1501-1520; Agricultural Adjustment Act of 1938, Title V, 52 Stat. 31; Federal Crop Insurance Act of 1980, as amended, Public Law 101-624; Federal Crop Insurance Reform Act of 1994, Public Law 103-354; Federal Agriculture Improvement and Reform Act of 1996; Public Law 104-127; Agricultural Research, Extension, and Education Reform Act of 1998, Public Law 105-185; Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, Public Law 105- 277; Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriation Act, 2000, Public Law 106-78.

OBJECTIVES:

To promote the national welfare by improving the economic stability of agriculture through a sound system of crop insurance and providing the means for the research and experience helpful in devising and establishing such insurance.

TYPES OF ASSISTANCE:

Insurance.

USES AND USE RESTRICTIONS:

The Federal Crop Insurance Corporation (FCIC), a wholly owned government Corporation, provides reinsurance to insurers who insure crop producers against losses resulting from unavoidable causes and/or uncontrollable events. The Federal Crop Insurance Reform Act of 1994 made significant changes in the program to provide more of the nation's producers with an ongoing source of risk protection to reduce the need for ad hoc disaster payment assistance. The Federal Agriculture Improvement and Reform Act of 1996 provided for more changes, including the provision for a more extensive risk management education program to assist and train producers on risk management strategies, including futures and options trading and insurance protection programs. Catastrophic crop insurance protection (CAT) is fully subsidized except for an administrative fee to be paid by the producer. This coverage compensates the producer for yield losses exceeding 50 percent of yield and at a price equal to 55 percent of maximum price (or equivalent amounts for dollar-based programs).

APPLICANT ELIGIBILITY REQUIREMENTS:

Unless otherwise restricted by the insurance policy, owners or operators of farmland, who have an insurable interest in a crop in a county where insurance is offered on that crop are eligible for insurance. Producers will be covered under the Noninsured Assistance Program (NAP) which is available to provide coverage similar to the catastrophic risk protection in areas where catastrophic risk protection is not available, if such crop is produced for food or fiber and the area is authorized.

FINANCIAL INFORMATION:

Insurance Provided: (Total indemnities) FY 1999 \$1,988,532,000; FY 2000 (estimated) \$2,416,772,000; and FY 2001 (estimated) \$2,461,177,000.

Range and Average of Financial Assistance: Level of assistance varies according to policy, crop and indemnities paid.

INFORMATION CONTACTS:

Interested producers should contact their Regional Office or a private industry crop insurance agent. Agency Address: <http://www.fsa.usda.gov>.

**ENVIRONMENTAL QUALITY INCENTIVES PROGRAM (EQIP) -
CFDA # 10.912**

FEDERAL AGENCY:

NATURAL RESOURCES CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Federal Improvement and Reform Act of 1996, Public Law 104-127, as amended; Food Security Act of 1985, Subtitle D, Title XII, 16 U.S.C. 3830 et seq.

OBJECTIVES:

Technical, education, and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. This program provides assistance to farmers and ranchers in complying with Federal, State, and tribal environmental laws, and encourages environmental enhancement. The purpose of this program is achieved through the implementation of structural, vegetative, and land management practices on eligible land. This program is funded through the Commodity Credit Corporation (CCC). NRCS provides overall program management and implementation leadership for conservation planning and implementation. The Farm Service Agency provides leadership for administrative processes and procedures for the program.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use.

USES AND USE RESTRICTIONS:

Technical assistance is provided in conservation planning for eligible participants. Education and financial assistance is provided for implementation of structural, vegetative, and land management practices. Cost-share payments may be made to implement one or more eligible structural or vegetative practices. Incentive payments can be made to implement one or more land management practices. Fifty percent of the funding available for technical, cost-share payments, incentive payments, and education shall be targeted at practices relating to livestock production.

APPLICANT ELIGIBILITY REQUIREMENTS:

Individual/family farmers and ranchers who face serious threats to soil, water, and related natural resources, or who need assistance with complying with Federal and State environment laws. A participant may be an owner, landlord, operator, or tenant of eligible agricultural lands. Limited resource producers, small-scale producers, producers of minority groups, Federally recognized Indian tribal governments, Alaska natives, and Pacific Islanders are encouraged to apply.

FINANCIAL INFORMATION:

Funding Provided: (Grants) FY 1999 \$169,750,616; FY 2000 (estimated) \$136,940,000; and FY 2001 (estimated) \$325,000. (Education Assistance) FY 1999 \$3,919,039; FY 2000 (estimated) \$4,000,000; and FY 2001 (estimated) \$4,000,000.

Range and Average of Financial Assistance: Cost-share and incentive payments are limited to \$10,000 per person per year and to \$50,000 over the length of the contract. Average contract payments are estimated to be \$15,000.

INFORMATION CONTACTS:

For more information on this and other related conservation programs, contact the local USDA service center. NRCS, FSA, and many local conservation districts are located in USDA service centers.

Agency Address: <http://www.nrcs.usda.gov>.

FARM OPERATING LOANS - CFDA # 10.406

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Farm and Rural Development Act, as amended, Subtitle B, Sections 311-317, Public Law 92-419, 7 U.S.C. 1942; Agriculture Act of 1961, Title III, Public Law 87-128.

OBJECTIVES:

To enable operators of not larger than family farms through the extension of credit and supervisory assistance, to make efficient use of their land, labor, and other resources, and to establish and maintain financially viable farming and ranching operations.

TYPES OF ASSISTANCE:

Direct Loans; Guaranteed/Insured Loans.

USES AND USE RESTRICTIONS:

Loan funds may be used to: (1) Purchase livestock, poultry, fur bearing and other farm animals, fish, and bees; (2) purchase farm equipment; (3) provide operating expenses for farm enterprise; (4) meet family subsistence needs and purchase essential home equipment; (5) refinance secured and unsecured debts subject to certain restrictions; (6) pay property taxes; (7) pay insurance premiums on real estate and personal property; and (8) finance youth projects.

Use restrictions are shown under Applicant Eligibility.

APPLICANT ELIGIBILITY REQUIREMENTS:

Except for youth loans, individual applicants must: 1) Not have caused a loss to the Agency after April 4, 1996, or received debt forgiveness on more than 3 occasions prior to April 4, 1996 to receive a guaranteed loan; 2) have the necessary education and/or farm experience or training (1 year's complete production and marketing cycle within the last 5 years); 3) do not exceed the limitation on the number of years that assistance may be received; 4) possess the legal capacity to incur the obligations of the loan; 5) be unable to obtain sufficient credit elsewhere at reasonable rates, and terms; 6) project the ability to repay the loan; 7) be a citizen or permanent resident of the United States; 8) after the loan is closed, be an owner/tenant operator of a family farm; and 9) comply with the highly erodible land and wetland conservation provisions of Public Law 99-198 of the Food Security Act of 1985 (FSA); certain corporations, cooperatives, partnerships and joint operations ("entities") operating family-sized farms are also eligible for farm operating loans. In brief, entity applicants must meet some of the same eligibility requirements as individual applicants. To be eligible to obtain a direct loan, a borrower must agree to abide by any "borrower training" requirements. Applicants/borrowers requesting guaranteed loan assistance must meet all lender requirements.

FINANCIAL INFORMATION:

Funding Provided: (Direct Loans) FY 1999 \$788,535,000; FY 2000 (estimated) \$900,000,000; and FY 2001 (estimated) \$700,000,000. (Unsubsidized Guaranteed Loans) FY 1999 1,250,725,000; FY 2000 (estimated) \$2,000,000,000; and FY 2001 (estimated) \$2,000,000,000.

Range and Average of Financial Assistance: Direct loans up to \$200,000; guaranteed loans up to \$717,000; direct average loan size approximately \$48,477 and guaranteed average loan size approximately \$144,010 for fiscal year 1999.

INFORMATION CONTACTS:

Contact local FSA county office. Agency Address: <http://www.fsa.usda.gov>.

FARM OWNERSHIP LOANS - CFDA # 10.407

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Consolidated Farm and Rural Development Act, as amended, Subtitle A, Sections 302, 310D, Public Laws 100-233, 87-128, 91-620, 95-334, 97-98, 7 U.S.C. 1922; Section 303, Public Laws 87-708, 90-488, 95-113, 96-438, 7 U.S.C. 1923; Section 305, Public Law 92-419, 7 U.S.C. 1925; Section 307, Public Law 97-35, 7 U.S.C. 1927; Section 308, Public Laws, 87-798, 89-240, 92-133, 7 U.S.C. 1928; 7 U.S.C. 1934.

OBJECTIVES:

To assist eligible farmers, ranchers, and aquaculture operators, including farming cooperatives, corporations, partnerships, and joint operations, through the extension of credit and supervisory assistance to: Become owner-operators of not larger than family farms; make efficient use of the land, labor, and other resources; carry on sound and successful farming operations; and enable farm families to have a reasonable standard of living.

TYPES OF ASSISTANCE:

Direct Loans; Guaranteed/Insured Loans.

USES AND USE RESTRICTIONS:

Loan funds may be used to: (1) Enlarge, improve, and buy family farms; (2) provide necessary water and water facilities; (3) provide basic soil treatment and land conservation measures; (4) construct, repair, and improve essential buildings needed in the operation of a family farm; (5) construct or repair farm dwellings; (6) provide facilities to produce fish under controlled conditions.

ELIGIBILITY REQUIREMENTS:

An applicant must: (1) Not have caused a loss to the Agency after April 4, 1996, or received debt forgiveness on more than 3 occasions prior to April 4, 1996 to receive a guaranteed loan; (2) be unable to obtain suitable credit from other sources at reasonable rates and terms; (3) be a U.S. citizen or permanent resident and possess the legal capacity to incur the obligations of the loan; (4) have the necessary education and/or experience, training, and managerial ability to operate a family farm; (5) realistically project the ability to repay the loan; (6) be the owner-operator of a not larger than family farm after the loan is closed; and (7) if an individual, the applicant must not have a combined farm ownership, soil and water, and recreation loan indebtedness to FSA of more than \$200,000, for direct loans; and \$717,000 for a guaranteed loan(s), or a combination of direct and guaranteed indebtedness; or a total indebtedness against the property securing the loan(s) of more than the market value of the security, whichever is the lesser amount; (8) have a minimum of 3 years farming experience. Applicants must also comply with the highly erodible land and wetland conservation provisions of Public Law 99-198 of the Food Security Act of 1985 (FSA).

FINANCIAL INFORMATION:

Funding Provided: (Direct Loans) FY 1999 \$170,526,000; FY 2000 (estimated) \$150,000,000; and FY 2001 (estimated) \$150,000,000. (Guaranteed Loans) FY 1999 \$774,170,000; FY 2000 (estimated) \$1,000,000,000; and FY 2001 (estimated) \$1,000,000,000.

Range and Average of Financial Assistance: Maximum direct \$200,000, maximum guaranteed \$717,000. Average direct \$102,355, guaranteed \$220,373.

INFORMATION CONTACTS:

Contact the local FSA Office. Agency Address: <http://www.fsa.usda.gov>.

FORESTRY INCENTIVES PROGRAM (FIP) - CFDA # 10.064

FEDERAL AGENCY:

NATURAL RESOURCES CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Cooperative Forestry Assistance Act of 1978, Public Law 95-313, 16 U.S.C. 2103.

OBJECTIVES:

To bring private non-industrial forest land under intensified management; to increase timber production; to assure adequate supplies of timber; and to enhance other forest resources through a combination of public and private investments on the most productive sites on eligible individual or consolidated ownership of efficient size and operation.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use.

USES AND USE RESTRICTIONS:

Cost-sharing of up to 65 percent of the total cost is available under the Forestry Incentives Program for tree planting, timber stand improvement, and site preparation for natural regeneration. Special forestry practices may be approved if needed for a significant and unique local condition for which national FIP practices are not adequate. Owners of non-industrial private forest lands of 1,000 acres or less, capable of producing industrial wood crops are eligible for Forestry Incentives Program cost-sharing. In order for an individual within a county to receive Forestry Incentives Program funds, the county or a portion of the county must be designated as eligible for Forestry Incentives Program assistance. This county designation is made by the State Conservationist, in consultation with the State Forester. A forest management plan developed by the State Forester and landowner is required for participation in FIP.

APPLICANT ELIGIBILITY REQUIREMENTS:

A private individual, group, association, Indian Tribe or other native group, corporation (except corporations whose stocks are publicly traded) or other legal entity which owns "non-industrial" private forest lands capable of producing industrial wood crops is eligible to apply for cost-sharing assistance. Cost-share agreements are limited to eligible ownership of land of not more than 1,000 acres of non-industrial private forest land, capable of producing at least 50 cubic feet of wood per acre per year, except by special approval. This program is available to eligible landowners in the United States and Puerto Rico and is also available to eligible leaseholders in Hawaii.

FINANCIAL INFORMATION:

Funding Provided: (Direct payments) FY 1999 \$9,727,413; FY 2000 (estimated) \$10,525,598; and FY 2001 (estimated) \$0.

Range and Average of Financial Assistance: \$50 to \$10,000 per year; \$1,600.

INFORMATION CONTACTS:

Contact the local USDA Service Center where your land is located.

Agency Address: <http://www.nrsc.usda.gov>.

INTEREST ASSISTANCE PROGRAM - CFDA # 10.437

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Consolidated Farm and Rural Development Act, as amended.

OBJECTIVES:

To aid not larger than family sized farms in obtaining credit when they are temporarily unable to project a positive cash flow without a reduction in the interest rate.

TYPES OF ASSISTANCE:

Guaranteed/Insured Loans.

USES AND USE RESTRICTIONS:

Interest Assistance Program can be used on either type of guaranteed loan. The types and loan purposes are as follows: (1) Farm Ownership (FO) Loans - to buy, improve, or enlarge farms. Uses may include construction, improvement, or repair of farm homes and service buildings; improvement of on-farm water supplies; (2) Operating Loans (OL) - to pay for items needed for farm operations, including livestock, farm and home equipment, feed, seed, fertilizer, fuel, chemicals, hail and other crop insurance, family living expenses, water system development, hired labor, and methods of operation to comply with the Occupational Safety and Health Act. The loan limit is \$717,000 for FO and \$717,000 for OL.

APPLICANT ELIGIBILITY REQUIREMENTS:

Individuals, partnerships, or joint operations, legal resident aliens, corporations and cooperatives that meet the eligibility requirements for a guaranteed loan and are able to project the required cash flow margins with the aid of interest assistance.

FINANCIAL INFORMATION:

Funding Provided: (Subsidized Guaranteed Operating Loans) FY 1999 \$525,508,000; FY 2000 (estimated) \$902,558,000; and FY 2001 (estimated) \$477,868,000. There have been no funds authorized for subsidized Farm Ownership loans.

Range and Average of Financial Assistance: \$1 to \$400,000; \$150,000.

INFORMATION CONTACTS:

Contact local Farm Service county office. Agency Address: <http://www.fsa.usda.gov>.

**IRRIGATION OPERATIONS AND MAINTENANCE ON INDIAN LANDS –
CFDA # 15.049**

FEDERAL AGENCY:

BUREAU OF INDIAN AFFAIRS, DEPARTMENT OF THE INTERIOR

AUTHORIZATION:

Indian Self-Determination and Education Assistance Act, Public Law 93-638, as amended, 25 U.S.C. 450; Indian Dams Safety Act of 1994, Public Law 103-1560, 108 Stat. 1560; American Indian Agriculture Resource Management Act, Public Law 103-177, 107 Stat. 2011, 25 U.S.C. 3701; Act of November 4, 1983, Public Law 98-146; Public Law 103-302, 60 Stat. 895, 25 U.S.C. 162a.

OBJECTIVES:

To conserve water and operate and maintain the irrigation water delivery systems on Indian irrigation projects and maintain the dams in a safe, economical, beneficial, and equitable manner.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use; Use of Property, Facilities, and Equipment; Provision of Specialized Services.

USES AND USE RESTRICTIONS:

Funds are for the operation and maintenance of Indian irrigation projects and the Indian Dams Safety Maintenance Program. Funding is restricted to existing projects.

APPLICANT ELIGIBILITY REQUIREMENTS:

Federally Recognized Indian Tribal Governments and Native American Organizations authorized by Indian tribal governments.

FINANCIAL INFORMATION:

Funding Provided: (Total Amount of Awards) FY 1999 \$7,632,467; FY 2000 (estimated) \$7,500,000; and FY 2001 (estimated) \$7,500,000.

Range and Average of Financial Assistance: \$8,000 to \$3,000,000.

INFORMATION CONTACTS:

Applications may be filed with the local Bureau of Indian Affairs agency office.

Agency Address: <http://www.doi.gov/bureau-indian-affairs.html>.

PLANNING ASSISTANCE TO STATES AND TRIBES (Section 22) - CFDA # 12.110

FEDERAL AGENCY:

OFFICE OF THE CHIEF OF ENGINEERS, DEPARTMENT OF THE ARMY, DEPARTMENT OF DEFENSE

AUTHORIZATION:

Water Resources Development Act of 1974, Section 22, Public Law 93-251, as amended, 42 U.S.C. 1962d-16.

OBJECTIVES:

To cooperate with any State in the preparation of comprehensive plans for the development, utilization and conservation of water and related land resources of drainage basins located within the boundaries of such State.

TYPES OF ASSISTANCE:

Provision of Specialized Services.

USES AND USE RESTRICTIONS:

The State must have a planning program for the development, utilization or conservation of the water and related land resources underway or laid out in sufficient detail so that the relationship of a State's request for Corps input for some particular aspect of the program may be appraised. All Corps input must be an integral part of the State program. The input from the Corps is to be on an effort or service sharing basis in lieu of an outright grant basis. Federal program funds are limited to \$10,000,000 annually and not more than \$500,000 in Federal funds shall be expended in any one year in any one State or any one Tribe. Study costs are shared 50/50 between the Corps and the non-federal sponsor. Up to 25% of the total study cost can be provided by the sponsor in the form of in-kind services.

APPLICANT ELIGIBILITY REQUIREMENTS:

The 50 States, the District of Columbia, Guam, American Samoa, the Commonwealth of the Northern Marinas, Palau Island, the Commonwealth of Puerto Rico, the Virgin Islands, and Federally recognized Indian tribes.

FINANCIAL INFORMATION:

Funding Provided: (Salaries and expenses) FY 1999 \$6,300,000; FY 2000 \$5,800,000; and FY 2001 (estimated) \$6,500,000.

Range and Average of Financial Assistance: Not applicable.

INFORMATION CONTACTS:

Contact Local District Engineers. Agency Address: <http://www.usace.army.mil/business.html>.
In Idaho, contact: Walla Walla District, Boise Office, P.O. Box 2780, Boise, ID 83701, (208) 345-2064.

PRODUCTION FLEXIBILITY PAYMENTS FOR CONTRACT COMMODITIES - CFDA # 10.055

FEDERAL AGENCY:

FARM SERVICE AGENCY, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Agricultural Market Transition Act, Public Law 104- 127, as amended; Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriation Act, 2000, Public Law 106-78; Emergency Farm Financial Relief Act, Public Law 105-228; Food Security Act of 1985, as amended, Public Law 99-198; Agricultural Act of 1949, as amended, Public Law 81-439; Commodity Credit Corporation Charter Act, as amended, Public Law 80-806; Agricultural Adjustment Act of 1938, as amended, Public Law 75-430.

OBJECTIVES:

To support farming certainty and flexibility while ensuring continued compliance with farm conservation and wetland protection requirements.

TYPES OF ASSISTANCE:

Direct Payments with Unrestricted Use.

USES AND USE RESTRICTIONS:

Producers enrolled in the 7-year Production Flexibility Contracts during the one-time sign-up held in 1996 are eligible to receive contract payments. All contracts, except those executed after the expiration of Conservation Reserve Program contracts (with an associated crop acreage base reduction), began with the 1996 crop and extend through the 2002 crop. Once the farm is enrolled, the crop acreage base becomes contract acreage. Commodity-specific contract payment rates are determined annually based on the statutory spending levels and the amount of enrolled contract acreage. Farm level commodity payments are equal to the contract payment rate multiplied by 85 percent of the contract acreage multiplied by the farm program payment yield. To be eligible for contract payments producers are required to: (a) comply with the conservation and wetland protection requirements on all of the producer's farms; (b) comply with planting flexibility requirements; (c) use the contract acreage for an agricultural or related activity; and (d) obtain at least the catastrophic level of crop insurance for each crop of economic significance or provide a written statement that waives any eligibility for emergency crop loss assistance; and (e) file annual acreage reports on any fruit or vegetable plantings on contract acreage.

APPLICANT ELIGIBILITY REQUIREMENTS:

Owner, landlord, tenant, or sharecropper on a farm with enrolled contract acreage that meets program requirements as announced by the Secretary.

FINANCIAL INFORMATION:

Funding Provided: (Production Flexibility Contract Payments) FY 1999 \$5,475,570,144; FY 2000 (estimated) \$5,049,271,000; and FY 2001 (estimated) \$4,056,813,000.

Range and Average of Financial Assistance: The production flexibility contract payments for the 2000 crops as of June 30, 2000 consisted of: \$2,331,578,000 for feed grains; \$1,113,732,000 for wheat; \$479,089,000 for upland cotton; and \$405,296,000 for rice Cotton, feed grain, wheat and rice production flexibility contract payments, in total, may not exceed \$40,000 to any one person during any fiscal year.

INFORMATION CONTACTS:

Contact the local FSA county office. Agency Address: <http://www.fsa.usda.gov>.

RECLAMATION AND WATER REUSE PROGRAM - CFDA # 15.504

FEDERAL AGENCY:

BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR

AUTHORIZATION:

Reclamation Wastewater and Groundwater Study and Facilities Act, Title XVI, Public Law 102-575, as amended; The Reclamation Recycling and Water Conservation Act of 1996, Public Law 104-266; The Oregon Public Lands Transfer and Protection Act of 1998, Public Law 105-321.

OBJECTIVES:

This Title gives Reclamation general authority to conduct appraisal and feasibility studies on water reclamation and reuse projects. It also provides general authority for research and demonstration programs to test water reclamation and reuse technologies. Reclamation may also participate in construction of reuse projects after congressional authorization of the project. The original Act provided authority to participate in the design and construction of five specific projects in California and Arizona. The 1996 Act authorized 16 additional recycling projects and 2 desalination demonstration projects, and the 1998 Act authorized one additional recycling project. Examples of potential sources of water for recycling and reuse are agricultural drainage, municipal and industrial wastewater, brackish surface and ground water, and sources that contain toxins and/or other contaminants.

TYPES OF ASSISTANCE:

Formula Grants.

USES AND USE RESTRICTIONS:

The nonfederal sponsor must complete a feasibility study, including NEPA (National Environmental Policy Act) compliance, complete a cost-share agreement with Reclamation, and furnish a statement of financial capability of the project sponsor to fund the nonfederal share to Reclamation prior to requesting construction appropriations from Congress for the Federal cost share. Operation and Maintenance (O&M) costs for the constructed project must be furnished by the nonfederal sponsor. Federal contributions for demonstration projects that exceed 25 percent of the cost cannot be made unless the Secretary (of the Interior) determines that the project is not feasible without such Federal contribution. Although the Act provides that Reclamation may furnish up to 50 percent of O&M costs for demonstration projects, it is Reclamation policy not to provide funds for this purpose. Reclamation is restricted by law to activities in the 17 Western States, unless authorized by Congress.

APPLICANT ELIGIBILITY REQUIREMENTS:

A legally organized nonfederal entity to sponsor the project is required, such as an irrigation district or a municipality. The applicant must be able to furnish the nonfederal cost share and be able to assume the operation and maintenance of the project upon completion of construction. Research projects may also be undertaken by colleges and universities and architectural and engineering firms.

FINANCIAL INFORMATION:

Funding Provided: (Grants) FY 1999 \$39,100,000; FY 2000 (estimated) \$33,360,000; and FY 2001 (estimated) \$22,000,000.

Range and Average of Financial Assistance: Construction funding is limited to 25 percent of the construction cost or \$20 million per project.

INFORMATION CONTACTS:

Contact Regional Director, Bureau of Reclamation.

Agency Address: <http://www.lc.usbr.gov/~scao/>.

RESOURCE CONSERVATION AND DEVELOPMENT - CFDA # 10.901

FEDERAL AGENCY:

NATURAL RESOURCES CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Public Law 97-98, 95 Stat. 1213.

OBJECTIVES:

To encourage and improve the capability of State and local units of government and local nonprofit organizations in rural areas to plan, develop and carry out programs for resource conservation and development.

TYPES OF ASSISTANCE:

Advisory Services and Counseling.

USES AND USE RESTRICTIONS:

Technical assistance is available only to RC&D sponsors within areas authorized by the Secretary of Agriculture for assistance. Technical assistance is available for the planning and installation of approved projects specified in RC&D area plans, for land conservation, water management, community development and environmental enhancement elements.

APPLICANT ELIGIBILITY REQUIREMENTS:

State and local governments and nonprofit organizations with authority to plan or carry out activities relating to resource use and development in multijurisdictional areas.

FINANCIAL INFORMATION:

Funding Provided: (Financial Assistance) FY 1999 \$398,000; FY 2000 (estimated) \$19,971; and FY 2001 (estimated) \$0. (Salaries and Expenses) FY 1999 \$34,710,179; FY 2000 (estimated) \$35,816,353; and FY 2001 (estimated) \$36,205,000.

Range and Average of Financial Assistance: Financial assistance is not available at this time.

INFORMATION CONTACTS:

Contact local NRCS field office. Agency Address: <http://www.nrcs.usda.gov>.

SOIL AND WATER CONSERVATION - CFDA # 10.902

FEDERAL AGENCY:

NATURAL RESOURCES CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Soil Conservation and Domestic Allotment Act of 1936, as amended, Public Law 74-46, 16 U.S.C. 590 a-f.

OBJECTIVES:

To plan and carry out a national natural resource conservation program, and to provide leadership in conservation, development, and productive use of the nation's soil, water, and related natural resources.

TYPES OF ASSISTANCE:

Advisory Services and Counseling.

USES AND USE RESTRICTIONS:

Technical assistance to the general public in planning and applying natural resource conservation practices, systems, and treatment; and furnishing technical natural resource conservation information to State and local governments.

APPLICANT ELIGIBILITY REQUIREMENTS:

Land users, Land owners, Community organizations State governments and local governments. Resource assistance needed is usually reviewed with the conservation district governing body. Individuals and groups may become cooperators with local conservation districts to which application for assistance is directed.

FINANCIAL INFORMATION:

Funding Provided: (Salaries and expenses) FY 1999 \$498,828,389; FY 2000 (estimated) \$581,164,203; and FY 2001 (estimated) \$653,805,000.

Range and Average of Financial Assistance: Not applicable.

INFORMATION CONTACTS:

Contact local NRCS field office. Agency Address: <http://www.nrcs.usda.gov>.

VERY LOW TO MODERATE INCOME HOUSING LOANS - CFDA # 10.410

FEDERAL AGENCY:

RURAL HOUSING SERVICE (RHS), DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Housing Act of 1949, Title V, Section 502, as amended, Public Law 89-117, 42 U.S.C. 1471 et seq.; Public Law 92-310, 42 U.S.C. 1480, 42 U.S.C. 1472; Public Law 98-51; Public Law 100-233; Amendment of Consolidated Farm and Rural Development Act of 1987, Section 601.

OBJECTIVES:

To assist very low and low-income families through direct loans to buy, build, rehabilitate, or improve and to provide the customer with modest, decent, safe, and sanitary dwellings and related facilities as a permanent residence in rural areas. Subsidized funds are available on direct loans only for low and very low-income applicants. Nonsubsidized funds (loan making) are available for very low and low-income applicants who are otherwise eligible for subsidy, but at the present time, the subsidy is not needed

TYPES OF ASSISTANCE:

Direct Loans; Guaranteed/Insured Loans.

USES AND USE RESTRICTIONS:

Direct loans may be used for construction, repair or purchase of housing; to provide adequate sewage disposal facilities and/or safe water supply for the applicant's household; for weatherization; to purchase or install essential equipment if the equipment is normally sold with dwellings in the area; to buy a minimum adequate site on which to place a dwelling for the applicant's own use; and under certain conditions to finance a manufactured home and its site. Debts directly related to the house may under certain circumstances be refinanced with direct loans. Dwellings financed must be modest, decent safe and provide sanitary housing. The property must be located in a place that is rural in character and does not exceed 10,000 population or in certain cases a place whose population exceeds 10,000 but is not in excess of 25,000.

APPLICANT ELIGIBILITY REQUIREMENTS:

Applicants must be without adequate resources to obtain housing, or related facilities. The applicants must be unable to secure the necessary credit from other sources at prevailing terms and conditions for residential type financing; be a natural person (individual) who resides as a citizen in the United States; have adequate and dependable available income to meet family living expenses, including taxes, insurance and maintenance, and repayments on debts including the proposed loan. For direct loans, applicants must be eligible for payment assistance and income may not exceed the low-income limits set forth in RD Instructions. The income limits are according to the size of household as is established by the Department of Housing and Urban Development (HUD) for the county or MSA where the property is or will be located. For a guaranteed loan the applicant's income may not exceed the moderate income limit which is generally 115 percent of the median income for the area.

FINANCIAL INFORMATION:

Loans Provided: (Direct Loans) FY 1999 \$964,587; FY 2000 (estimated) \$1,100,000; and FY 2001 (estimated) \$1,300,000 (Guaranteed loans) FY 1999 \$2,976,993; FY 2000 (estimated) \$3,200,000,000; and FY 2001 (estimated) \$3,700,000,000.

Range and Average of Financial Assistance: From \$1,000 to \$105,000; an average of \$68,168 for new construction, and \$48,692 for existing cost. Loans in high cost areas may be higher.

INFORMATION CONTACTS:

Contact local USDA Rural Development field office. Agency Address: <http://www.rurdev.usda.gov>.

**VERY LOW-INCOME HOUSING REPAIR LOANS AND GRANTS –
CFDA # 10.417**

FEDERAL AGENCY:

RURAL HOUSING SERVICE (RHS), DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Housing Act of 1949, Title V, Section 504, as amended, Public Laws 89-117, 89-754, and 92-310, 42 U.S.C. 1474.

OBJECTIVES:

To give very low-income rural homeowners an opportunity to make essential repairs to their homes to make them safe and to remove health hazards to the family or the community.

TYPES OF ASSISTANCE:

Project Grants; Direct Loans.

USES AND USE RESTRICTIONS:

To assist very low-income owner- occupants in rural areas to repair or improve their dwellings. Grant funds may only be used by senior citizens (age 62 and older) to make such dwellings safe and sanitary and to remove health and safety hazards. This includes repairs to the foundation, roof or basic structure as well as water and waste disposal systems, and weatherization. Loans bear an interest rate of one percent and are repaid over a period of up to 20 years. In addition to the above purpose, loan funds may be used to modernize the dwelling. Maximum loan amount cannot exceed a cumulative total of \$20,000 to any eligible person and maximum lifetime grant assistance is \$7,500 to any eligible person 62 years of age or older for home improvement. The house must be located in a place which is rural in character and does not exceed 10,000 population. Some places with population between 10,000 and 25,000 may be eligible if not within a Metropolitan Statistical Area (MSA).

APPLICANT ELIGIBILITY REQUIREMENTS:

Applicants must own and occupy a home in a rural area; and be a citizen of the United States or reside in the United States after having been legally admitted for permanent residence or on indefinite parole. Loan recipients must have sufficient income to repay the loan. Grant recipients must be 62 years of age or older and be unable to repay a loan for that part of the assistance received as a grant. Applicant's income may not exceed the very low-income limit set forth in RD Instructions. Very low-income limits range from \$6,300 to \$22,650 for a single person household, depending on an area's median income.

FINANCIAL INFORMATION:

Loans Provided: (Loans) FY 1999 \$24,965,000; FY 2000 (estimated) \$32,396,000; and FY 2001 (estimated) \$40,000,000. (Grants) FY 1999 \$20,230,000; FY 2000 (estimated) \$25,651,000; and FY 2001 (estimated) \$30,000,000.

Range and Average of Financial Assistance: Loans to \$5,388; Grants to \$4,547 as of August 10, 1998.

INFORMATION CONTACTS:

Contact your local Rural Development county office. Agency Address: <http://www.rurdev.usda.gov>.

WATER AND WASTE DISPOSAL LOANS AND GRANTS - CFDA # 10.770

FEDERAL AGENCY:

RURAL UTILITIES SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Consolidated Farm and Rural Development Act, Section 306C, 7 U.S.C. 1926(c), as amended; Food, Agriculture, Conservation, and Trade Act of 1990, Title XXIII, Public Law 101-624.

OBJECTIVES:

Provide water and waste disposal facilities and services to low income rural communities whose residents face significant health risks.

TYPES OF ASSISTANCE:

Project Grants; Direct Loans.

USES AND USE RESTRICTIONS:

Funds may be used for 100 percent of costs to: Construct, enlarge, extend, or otherwise improve a community water or waste system; extend service lines and connect individual residences to a system. Allow applicant to make grants directly to individuals to: Extend service lines, connect resident's plumbing to system, pay reasonable charges and fees for connecting to system, installation of plumbing and related fixtures, and construction in dwelling of a bathroom.

APPLICANT ELIGIBILITY REQUIREMENTS:

Local level governments, federally recognized Indian tribes, U.S. Territories and possessions, and nonprofit associations can receive assistance under this program. Except for rural areas known as "Colonia" along the U.S./Mexico border, the projects funded under this program must primarily provide water and/or waste disposal services to residents of a county where the per capita income of the residents is not more than 70 percent of the most recent national average per capita income, as determined by the U.S. Department of Commerce, and unemployment rate of the residents is not less than 125 percent of the most recent national average unemployment rate, as determined by the Bureau of Labor Statistics. Also the residents must face significant health risks due to not having access to an affordable community water and/or waste disposal system.

FINANCIAL INFORMATION:

Funding Provided: (Grants) FY 1999 \$22,284,500; FY 2000 (estimated) \$20,000,000; and FY 2001 (estimated) \$20,104,883. (Loans) FY 1999 \$0; FY 2000 (estimated) \$0; and FY 2001 (estimated) \$0. (Note: Grants are included in program 10.760, Water and Waste Disposal Systems for Rural Communities. Only grant funds for Colonies have been appropriated for this program.)

Range and Average of Financial Assistance: FY 1999: \$586,400.

INFORMATION CONTACTS:

Contact local Rural Development office. Agency Address: <http://www.rurdev.usda.gov>.

**WATER AND WASTE DISPOSAL SYSTEMS FOR RURAL COMMUNITIES -
CFDA # 10.760**

FEDERAL AGENCY:

RURAL UTILITIES SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Consolidated Farm and Rural Development Act, as amended, Section 306, Public Law 92-419, 7 U.S.C. 1926.

OBJECTIVES:

To provide basic human amenities, alleviate health hazards and promote the orderly growth of the rural areas of the nation by meeting the need for new and improved rural water and waste disposal facilities.

TYPES OF ASSISTANCE:

Project Grants; Direct Loans; Guaranteed/Insured Loans.

USES AND USE RESTRICTIONS:

Funds may be used for the installation, repair, improvement, or expansion of a rural water facility including distribution lines, well pumping facilities and costs related thereto, and the installation, repair, improvement, or expansion of a rural waste disposal facility including the collection, and treatment of sanitary, storm, and solid wastes. Grant funds may not be used to pay: Interest on loans, operation and maintenance costs, or to acquire or refinance an existing system. No maximum loan amount is established by statute. The maximum term on all loans is 40 years. However, no repayment period will exceed any statutory limitation or the organization's borrowing authority nor the useful life of the improvement or facility to be financed. The interest rate on guaranteed loans is negotiable between the applicant and the lender.

APPLICANT ELIGIBILITY REQUIREMENTS:

Municipalities, counties, and other political subdivisions of a State, such as districts and authorities, associations, cooperatives, corporations operated on a not-for-profit basis, Indian tribes on Federal and State reservations and other Federally recognized Indian tribes. Facilities shall primarily serve rural residents and rural businesses. The service area shall not include any area in any city or town having a population in excess of 10,000 inhabitants according to the latest decennial census of the United States. The applicant must: (1) Be unable to finance the proposed project from its own resources or through commercial credit at reasonable rates and terms; and (2) have the legal authority necessary for constructing, operating, and maintaining the proposed facility or service, and for obtaining, giving security for, and repaying the proposed loan. Plans and specifications must be developed to comply with State and local health and pollution regulations and other requirements.

FINANCIAL INFORMATION:

Funding Provided: (Direct Loans) FY 1999 \$723,632,000; FY 2000 (estimated) \$779,828,370; and FY 2001 (estimated) \$900,000,000. (Guaranteed Loans) FY 1999 \$6,000,000; FY 2000 (estimated) \$75,000,000; and FY 2001 (estimated) \$75,000,000. (Grants) FY 1999 \$522,763,000; FY 2000 (estimated) \$476,604,000; and FY 2001 (estimated) \$503,000,000.

Range and Average of Financial Assistance: (FY 1999) (Direct Loans) \$5,100 to \$7,000,000; \$819,910; (Grants) \$3,000 to \$4,500,000; \$650,827.

INFORMATION CONTACTS:

Contact local Rural Development office. Agency Address: <http://www.rurdev.usda.gov>.

WATER BANK PROGRAM - CFDA # 10.062

FEDERAL AGENCY:

NATURAL RESOURCES CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Water Bank Act, Public Law 91-559, Public Law 96- 182.

OBJECTIVES:

To conserve surface waters; preserve and improve the Nation's Wetlands; increase migratory waterfowl habitat in nesting, breeding and feeding areas in the U.S.; and secure environmental benefits for the Nation.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use.

USES AND USE RESTRICTIONS:

Agreements are for 10 years with eligible landowners to help preserve important nesting, breeding, and feeding areas of migratory waterfowl. During the agreement, the participants agree in return for annual payments not to drain, burn, fill, or otherwise destroy the wetland character of such areas and not to use areas for agricultural purposes, as determined by the Secretary. The Secretary carries out the program in harmony with wetlands programs administered by the Secretary of the Interior and uses technical and related services of appropriate State, Federal, and private conservation agencies to assure proper coordination.

APPLICANT ELIGIBILITY REQUIREMENTS:

Landowners and operators of specified types of wetlands in designated important migratory waterfowl nesting, breeding and feeding areas.

FINANCIAL INFORMATION:

Funding Provided: FY 1999 \$596,992; FY 2000 (estimated) \$730,383; and FY 2001 (estimated) \$0.

Range and Average of Financial Assistance: \$7 to \$75 per acre; \$13.00.

INFORMATION CONTACTS:

Contact the local field NRCS office where your land is located.

Agency Address: <http://www.nrsc.usda.gov>.

WATER RESOURCES ON INDIAN LANDS - CFDA # 15.037

FEDERAL AGENCY:

BUREAU OF INDIAN AFFAIRS, DEPARTMENT OF THE INTERIOR

AUTHORIZATION:

Indian Self-Determination and Education Assistance Act, Public Law 93-638, as amended, 25 U.S.C. 450; Snyder Act of 1921, 25 U.S.C. 13, Public Law 67-85, 42 Stat. 208.

OBJECTIVES:

To assist Indian tribes in the management, planning, and development of their water and related land resources.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use; Provision of Specialized Services; Advisory Services and Counseling.

USES AND USE RESTRICTIONS:

Funds are used by tribes 1) to collect and analyze baseline data and to facilitate Water Rights Litigation and Negotiation activities; and 2) for Water Management, Planning, and Development which are project specific awards that are made competitively.

APPLICANT ELIGIBILITY REQUIREMENTS:

Federally Recognized Indian Tribal Governments and Native American Organizations authorized by Indian tribal governments.

FINANCIAL INFORMATION:

Funding Provided: (Total Amount of Awards) FY 1999 \$8,917,146; FY 2000 (estimated) \$9,806,000; and FY 2001 (estimated) \$9,100,000.

Range and Average of Financial Assistance: Water Rights awards range from \$50,000 to \$1,000,000. Water Management, Planning, and Development awards are generally from several thousand dollars to several hundred thousand dollars, depending on the scope of the projects; assistance typically averages \$50,000.

INFORMATION CONTACTS:

Applications may be filed with the local Bureau of Indian Affairs' agency office.

Agency Address: <http://www.doi.gov/bia/otrhome.htm>.

WATERSHED SURVEYS AND PLANNING (SMALL WATERSHED PROGRAM, PL-566) - CFDA # 10.906

FEDERAL AGENCY:

NATURAL RESOURCES CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Watershed Protection and Flood Prevention Act, Public Law 83-566, 68 Stat. 666, as amended: Public Law 84-1018, 70 Stat. 1088; Public Law 85-624, 72 Stat. 563; Public Law 85-865, 72 Stat. 1605; Public Law 86-468, 74 Stat. 131, 132; Public Law 86-545, 74 Stat. 254; Public Law 87-170, 75 Stat. 408; Public Law 87-703, 76 Stat. 608; Public Law 89-337, 79 Stat. 1300; Public Law 90-361, 82 Stat. 250; Public Law 97-98, 95 Stat. 1213; Public Law 99-662, 100 Stat. 4196; Public Law 101-624, 104 Stat. 3359.

OBJECTIVES:

To provide planning assistance to Federal, State, and local agencies for the development of coordinated water and related land resources programs in watersheds and river basins. Priority will be given to studies which: (1) Contribute to achieving the National Conservation Program high priority objectives; (2) have a high likelihood of being implemented; (3) will be implemented with no or relatively little Federal assistance; (4) have State and local assistance in the study; and (5) are of short duration (2 to 4 years) and (6) low cost. Special priority is given to the objective of setting priorities in helping to solve problems of upstream rural community flooding, water quality improvement coming from agricultural nonpoint sources, wetland preservation and drought management for agriculture and rural communities. Special emphasis is given to assisting communities which desire to adopt floodplain management regulations to meet the requirements of the National Flood Insurance Program and State agencies in developing a strategic water resource plan.

TYPES OF ASSISTANCE:

Provision of Specialized Services; Advisory Services and Counseling.

USES AND USE RESTRICTIONS:

Technical assistance is provided to sponsoring organizations for planning activities to help solve water and related land resources problems. It is available through disciplines such as engineering, economics, social sciences, agronomy, range management, forestry, biology, hydrology, archaeology, landscape architecture, waste management, recreation, etc.

APPLICANT ELIGIBILITY REQUIREMENTS:

Any local or State water resource agency or other Federal agency concerned with water and related land resource development, counties, municipalities, town or township, soil and water conservation district, flood prevention or flood control district, Indian tribe or tribal organization or nonprofit organization. USDA participation is based on a cooperative effort with a sponsoring organization(s). State and local agencies are expected to participate in the studies and to fund their own activities.

FINANCIAL INFORMATION:

Funding Provided: (Salaries and expenses) FY 1999 \$10,346,724; FY 2000 (estimated) \$10,368,000; and FY 2001 (estimated) \$10,368,000.

Range and Average of Financial Assistance: Not applicable.

INFORMATION CONTACTS:

Contact local NRCS Field Office. Agency Address: <http://www.id.nrcs.usda.gov>.

WETLANDS RESERVE PROGRAM (WRP) - CFDA # 10.072

FEDERAL AGENCY:

NATURAL RESOURCES CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Food Security Act of 1985, Title XII, Public Law 99-198, as amended; Food, Agriculture, Conservation, and Trade Act of 1990, Title XIV, Section 1237, Public Law 101-624, 104 Stat. 3584, 7 U.S.C. 3837, as amended; Omnibus Budget Reconciliation Act of 1993; Federal Agriculture Improvement and Reform Act of 1996; Agriculture Appropriations Act of 1998.

OBJECTIVES:

To restore and protect farmed wetlands, prior converted wetlands, wetlands farmed under natural condition, riparian areas, and eligible buffer areas for landowners who have eligible land on which they agree to enter into a permanent or long-term easement or restoration agreement contract with the Secretary. The goal of WRP is to have 975,000 acres enrolled by the year 2002 with one-third as permanent easements, one-third as 30-year easements and one-third as restoration agreement acres.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use.

USES AND USE RESTRICTIONS:

Eligible landowners may offer farmed wetlands, prior converted wetlands, wetlands farmed under natural condition, intensively managed pasture and hayland riparian areas, along with eligible buffer areas to be placed under a permanent or 30-year easement or restoration agreement. A deed restriction covering the land approved under easement must be recorded in the local land deeds office. The landowner will receive financial and technical assistance to install necessary restoration practices on the land under easement or the practice will be installed by the Secretary. Subject to the acceptance of an offer by the Federal Government, the landowner will receive in cash an amount specified in the WRP contract but not to exceed the fair agricultural market value of the land "as is" condition less the fair market value of such land encumbered by the permanent easement or 75% for a 30-year easement. The landowner shall ensure that the easement granted to Natural Resources Conservation Service (NRCS) is superior to the rights of all others and shall agree to implement a wetland restoration plan designed to restore and maintain the easement area. The plan will include a designated access route to be used as necessary for easement management and monitoring. The landowner shall agree to a permanent retirement of crop acreage bases, allotments, and quotas to the extent that the sum of the crop acreage bases and allotments will not exceed the remaining cropland of the present farm or subsequently reconstituted farm.

APPLICANT ELIGIBILITY REQUIREMENTS:

An individual landowner, partnership, association, corporation, estate, trust, other business or other legal entities and, whenever applicable, a State, a political subdivision of a State, or any agency thereof owning private croplands.

FINANCIAL INFORMATION:

Funding Provided: (Includes Appropriated and CCC transfer funds) FY 1999 \$214,610,151; FY 2000 (estimated) \$179,654,327; and FY 2001 (estimated) \$286,142,000.

Range and Average of Financial Assistance: Not applicable.

INFORMATION CONTACTS:

Contact local NRCS field office. Agency Address: <http://www.nrcs.usda.gov>.

WILDLIFE HABITAT INCENTIVE PROGRAM (WHIP) - CFDA # 10.914

FEDERAL AGENCY:

NATURAL RESOURCES CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

AUTHORIZATION:

Federal Improvement and Reform Act of 1996, Public Law 104-127; Food Security Act of 1985, as amended, 16 U.S.C. 3830 et seq.

OBJECTIVES:

This program was created to develop upland wildlife habitat, wetland wildlife habitat, threatened and endangered species habitat, fish habitat and other types of wildlife habitat.

TYPES OF ASSISTANCE:

Direct Payments for Specified Use.

USES AND USE RESTRICTIONS:

Technical assistance is provided to develop a Wildlife Habitat Development Plan for eligible participants. Cost-share payments may be made to implement wildlife habitat practices. Up to seventy-five percent cost-share is available from NRCS to reimburse participants for installing practices beneficial to wildlife.

APPLICANT ELIGIBILITY REQUIREMENTS:

A participant may be an owner, landlord, operator, or tenant of eligible lands. Limited resource producers, small-scale producers, producers of minority groups, Federally Recognized Indian Tribal Governments, Alaska natives, and Pacific Islanders are encouraged to apply.

FINANCIAL INFORMATION:

Funding Provided: (Cost-Share Agreements) FY 1999 \$17,841,003; FY 2000 (estimated) \$1,507,728; and FY 2001 (estimated) \$0. (Salaries and expenses) FY 1999 \$4,535,802; FY 2000 (estimated) \$2,789; and FY 2001 (estimated) \$0.

Range and Average of Financial Assistance: Cost-share payments are generally limited to \$10,000 per contract. Average contract payments are estimated to be \$4,600.

INFORMATION CONTACTS:

Contact the local NRCS field office. Agency Address: <http://www.nrcs.usda.gov>.

TRIBAL PARTNERSHIP PROGRAM

FEDERAL AGENCY:

OFFICE OF THE CHIEF OF ENGINEERS, DEPARTMENT OF THE ARMY, DEPARTMENT OF DEFENSE

AUTHORIZATION:

Water Resources Development Act of 2000, Section 203.

OBJECTIVES:

The US Army Corps of Engineers will cooperate with Indian Tribes and the heads of other federal agencies to study and determine the feasibility of carrying out water resources projects primarily within Indian country that will substantially benefit Indian Tribes.

TYPES OF ASSISTANCE:

Cost sharing where the Secretary of the Army determines the tribe's ability to pay. Ability-to-pay regulations are currently being drafted. Potential sponsor cost-share could range from minimal to fifty percent.

USES AND USE RESTRICTIONS:

A study under this authority is limited to projects related to flood control, environmental or cultural preservation, and other projects that the Secretary of the Army and the sponsor tribe determine to be appropriate. Federal program funds are limited to \$5,000,000 annually and not more than \$1,000,000 in Federal funds shall be expended in any one year in any one Tribe.

APPLICANT ELIGIBILITY REQUIREMENTS:

Federally recognized Indian tribes.

FINANCIAL INFORMATION:

Funding Provided: FY 2002 (estimated) \$1,000,000; FY 2003 (estimated) \$1,000,000; FY 2004 (estimated) \$1,000,000; FY 2005 (estimated) \$1,000,000; FY 2006 (estimated) \$1,000,000;

Range and Average of Financial Assistance: Not yet determined

INFORMATION CONTACTS:

Contact Local District Engineer. Agency Address: <http://www.usace.army.mil/business.html>.

In Idaho, contact: Walla Walla District, Boise Office, P.O. Box 2780, Boise, ID 83701, (208) 345-2064.

AQUATIC ECOSYSTEM RESTORATION

FEDERAL AGENCY:

OFFICE OF THE CHIEF OF ENGINEERS, DEPARTMENT OF THE ARMY, DEPARTMENT OF DEFENSE

AUTHORIZATION:

Section 206 of the Water Resources Development Act of 1996, as amended.

OBJECTIVES:

To assist with the restoration of aquatic ecosystems. The Corps does restoration projects in areas that affect water, such as rivers, lakes, and wetlands that benefit the environment through restoring, improving, or protecting aquatic habitat for plants, fish and wildlife.

TYPES OF ASSISTANCE:

Provision of Specialized Services

USES AND USE RESTRICTIONS:

The Corps of Engineers designs and constructs the projects. A project is accepted for construction after a detailed investigation shows it is technically feasible, environmentally acceptable, and provides cost effective environmental benefits. Each project must be complete within itself, not a part of a larger project. The maximum federal expenditure per project is \$5 million, which includes both planning and construction costs. Project costs are shared 65% federal, 35% non-federal. Costs of lands, easements, and rights-of-way are non-federal and are creditable towards the 35% non-federal cost share. Section 206 also allows credit for certain works in-kind, including design work, provision of materials, and construction activities. Contributions, such as volunteer labor, can also be accepted to reduce the overall project cost. The non-federal sponsor must assume responsibility for operation and maintenance of the project upon completion.

APPLICANT ELIGIBILITY REQUIREMENTS:

State or local Non-federal agency or Indian Tribe

FINANCIAL INFORMATION:

Funding Provided: FY 2000 \$6,260,000; FY 2001 (estimated) \$10,000,000; FY 2002 (estimated) \$15,000,000.

INFORMATION CONTACTS:

Contact Local District Engineer. Agency Address: <http://www.usace.army.mil/business.html>.
In Idaho, contact: Walla Walla District, Boise Office, P.O. Box 2780, Boise, ID 83701, (208) 345-2064.

2000 Idaho State Crop Insurance Profile

Insurable Crops	Total Acres	% Insured	Insured Acres
** All Insurance Plans Available in Idaho State (selected counties)			
Apples	5,400	62%	3,344
Barley	750,000	36%	268,661
Canola	*		27,321
Corn	185,000	13%	24,951
Dry Beans	108,000	29%	30,813
Dry Peas	140,000	36%	50,211
Grapes	656	64%	421
Green Peas	*		7,744
Oats	80,000	3%	2,646
Onions	7,600	21%	1,562
Potatoes	415,000	68%	282,429
Processing Beans	*		0
Processing Sweet Corn	20,200	93%	18,716
Safflower	6,200	51%	3,164
Sugar Beets	212,000	33%	70,212
Wheat	1,370,000	45%	615,850
AGR		Liability	\$1,035,975
Nursery		Liability	\$1,353,260

* State level National AG Statistics Service (NASS) data not published or available.

** Crop Pilot Programs

Spokane Regional Office
 Contact: Dave P. Paul, Director
 Address: 112 N. University #205
 Spokane, WA 99206
 Phone: (509) 353-2147
 Fax: (509) 353-3149
 E-Mail:
 Dave_Paul@rm.fcic.usda.gov

Income Protection (IP) – Barley	All Barley Counties
Income Protection (IP) – Wheat	Idaho, Latah, Lewis and Nez Perce Counties
Adjusted Gross Revenue	Canyon, Payette & Washington County
Coverage Enhancement Option (CEO) – Potatoes	All Potato Counties
Dairy Options Pilot Program (DOPP)	<u>Rounds II & III</u> : Bingham, Canyon, Franklin, Gooding, Jerome, and Twin Falls, Counties

Western Regional Compliance Office

Contact: Susan Choy, Director
 Address: 430 G Street, #4167
 Davis, CA 95616-4167
 Phone: (530) 792-5850
 Fax: (530) 792-5865
 E-Mail:
 Susan_Choi@rm.fcic.usda.gov

◆ Companies selling in State	10		
◆ Agents selling in State	464		
◆ Top insurance issues to be resolved in this state are:	<ul style="list-style-type: none"> ▪ Income Protection Malting Barley Price and Quality Endorsement improvements ▪ Dry Pea and Lentil program improvements ▪ Implement new Small Grains Crop Provisions ▪ Continue development of Adjusted Gross Revenue Insurance Pilot Program ▪ Risk Management Education for Pacific Northwest Orchard Families Project ▪ Alfalfa Seed Pilot Program Implementation ▪ Evaluate, improve and expand current programs 		





**RISK MANAGEMENT
AGENCY - IDAHO**



Spokane Regional Office
112 North University, Suite 205
Spokane, WA 99206

Telephone: (509)353-2147
FAX: (509)353-3149
www.act.fcic.usda.gov

! USDA's Risk Management Agency (RMA)

A division of the Farm and Foreign AG Services Division of USDA is continuing its efforts to creating more awareness throughout the agriculture community about managing risks on the farm.

! RMA's Mission Provide and support a cost effective means of managing risk for Agriculture producers in order to improve the economic stability of agriculture.

! AG Areas of Risk USDA has identified 5 primary areas of risk, some may include:

Production - partial or total loss of production or quality.

Marketing - receiving a fair market price for the crop(s).

Financial - balancing farm records or meeting financial obligations.

Legal - possibly harming a neighbor's crop when applying herbicides or not obtaining adequate farm property and liability insurance coverage.

Human Resources - not having an estate plan in order, that in the event of something happening, the farm can continue with the least amount of disruption.

The U.S. Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact Dave P. Paul, Director, USDA/Risk Management Agency, Spokane Regional Office, at (509) 353-2147. To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th & Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

! Multi-Peril (MPCI)

Federally subsidized, against many weather-related losses on 130 + crops, nationally. Choose from 50-75% (85% in some areas) of yield, and 55-100% of price. The 2000 Act mandates changes to administrative fees paid by eligible producers. For Catastrophic Risk Protection (CAT), a producer must pay \$100 for each eligible crop insurance contract in each county.; and the administrative fee will be billed on the date contained in the Special Provisions. For coverage at levels in excess of CAT, the administrative fee is \$30 per crop per county. **Administrative fees for CAT and additional levels can be waived for Small-Limited Resource Farmers.**

Price Election:

Choice of Various Percentage levels of Price established for the 2001 crop year (55% to 100% of FCIC established or projected market price).

**The following crops are insured in
IDAHO STATE:**

Apples, Barley, Dry Beans, Canola, Processing Beans, Corn, Dry Peas, Green Peas, Grapes, Nursery, Oats, Onions, Potatoes, Safflower, Sugar Beets, Processing Sweet Corn and Wheat

Causes of Loss:

Varies by crop. In general, MPCI covers unavoidable loss of production. Examples are: drought, excess moisture, frost, freeze, other adverse weather conditions, insects, disease, wildlife, etc.

! Pilot Coverage Enhancement Option (CEO)

attaches to an MPCI policy and, if a loss is payable, this option retroactively reduces the MPCI deductible. Not available to insureds who elect the CAT Endorsement or choose price elections less than 100%. CEO is available for **potato** policies in Idaho for crop year 2001.

! Revenue Products

Two revenue programs are based on dollar revenue guarantees instead of Multi-Peril Crop yield guarantees. Revenue policies protect a grower's loss of revenue resulting from fluctuating low prices, low yields, or a combination of both. They use an Actual Production History (APH) same as other MPCI policies and use commodity board of trade prices to calculate a dollar guarantee. **Some of those programs include:**

Income Protection (IP) pilot policy pays when the harvested and appraised production to count, multiplied by the harvest price, is below the IP guarantee. The harvest price is an average of daily futures market closing prices for the crop during the designated month of harvest. An IP policy indemnity payment will be made when the harvested and appraised production to count, multiplied by the harvest price, is below the IP guarantee. The insurance unit is the grower's share of all acres of the insured crop in the county. **For the 2001 crop year, IP is available on Wheat in Idaho, Latah, Lewis, and Nez Perce counties, ID and for Barley in all counties except Shoshone.**

2 USDA/RISK MANAGEMENT AGENCY - IDAHO

☞ Crop Revenue Coverage (CRC)

{Developed by Redland Insurance, is reinsured by FCIC} Loss will result if the calculated revenue is less than the final guarantee. The difference between these two figures will determine the indemnity to be paid. Losses are based on the minimum or harvest guarantee (whichever is higher) and the calculated revenue. Additional CRC features include: Basic, Optional or Enterprise Units Prevented Planting High value replacement protection (insurance guarantee can increase if the Harvest Price exceeds the Base Price) and Winter Wheat Coverage Endorsements Options A& B. ***CRC is available in all Idaho Corn Grain and Wheat counties.***

! Adjusted Gross Revenue (AGR) Insurance Product

pilot program providing an insurance safety net for producers growing insurable and non-insurable crops. The pilot AGR program : provides insurance coverage for multiple AG commodities in one insurance product; uses a producer's historic Schedule F tax information as a base to provide a level of guaranteed revenue for the insurance period; uses commodity production-cash receipts as the methods of measurement; reinforces program creditability by using IRS tax forms and regulations to alleviate compliance concerns; provides protection against low revenue due to unavoidable causes. **Limited Availability:** For the 2001 crop year, AGR is available in **Idaho; Canyon, Payette, and Washington counties.** ***Sales Closing Date: 1/31/2001.***

! Revenue Assurance (RA)

Developed by Farm Bureau Mutual, RA is re-insured by FCIC, and protects a producer's revenue when declining prices or yields cause revenue to fall below the guaranteed level. For 2001, RA products cover winter wheat, spring wheat, spring feed barley and spring canola / rapeseed in Idaho counties where MPCl wheat, barley, and canola insurance is available.

! Non-insured Crop Disaster Assistance Program (NAP)

Protection program for growers producing crops for which there is currently no insurance program available. For crop year 2001, NAP assistance is provided to individual producers without any requirement for an area loss. Crop payments are determined on an individual unit basis. Units with qualifying losses in excess of 35% will be considered for payment. Payments are only paid on losses over 50%. For specific NAP details, contact your local USDA Farm Service Agency.

! Key Dates

2001 Idaho Sales Closing Dates

Fall and Spring Canola/Rapeseed (All Canola counties **EXCEPT** Blaine, Bonneville, Fremont, Jefferson, Madison & Teton Counties) - 8/31/00; Wheat - 10/2/00 Nursery - 10/02/00; Apples & Grapes - 11/20/00; Onions - 2/1/01; Spring MPCl Canola (Blaine, Bonneville, Fremont, Jefferson, Madison & Teton Counties), and Other Spring Crops - 3/15/01.

(Producers who want to make changes in their choice of policy options must notify their insurance provider by this date (including CAT insureds who wish to buy higher levels). Producers not insured during the previous year who desire to be insured for the coming year must sign an application for insurance by this date.)

MPCl cancellation date. ALL crop insurance policies (including CAT level coverage) will automatically renew each crop year unless insureds cancel their insurance by this date.

√ 2001 Idaho Production Reporting Dates

Earlier of Acreage Reporting Date or 45 days after cancellation date. All insureds must have reported or updated their APH to their insurance provider. If reports are not received timely, yields will be assigned which will result in lower approved yields. For certain crops, late reporting may void insurability.

√ Insurance Effective Date

At time of planting for annual crops or for perennial crops on Nov. 21. UNLESS acreage is not timely reported. Can vary by crop, type, variety being grown.

√ 2001 Idaho Acreage Reporting Dates

Fall Canola & Wheat (winter coverage endorsement) - 12/15/00; Apples & Grapes - 1/16/01; Onions, Spring Canola, Processing Beans (Canyon County **Only**); and Other Spring Crops (including Spring & Winter/Basic Wheat) - 7/02/01; Processing Beans (Franklin County **Only**) - 7/16/01

(Insureds must have reported their acres (both insurable and uninsurable) by this date. Acreage not reported timely, may only be insured with special approval.)

! Advantages as Risk Management Tools

Protects crop investment, borrowed capital and current savings. Provides a favorable credit rating, collateral and guaranteed production. Stabilizes income, transfers risk and provides an ADDED PEACE OF MIND.

! Detailed Information

This summary is for general illustration purposes only. Producers should consult their crop insurance agent to obtain specific information (e.g., insurable types, practices, options, and appropriate deadlines).

! Where to Purchase

All MPCl, including CAT coverage and Revenue insurance policies are available from private insurance agents. A list of crop insurance agents is available at all USDA Service Centers throughout the United States.

APPENDIX B

LOCAL EMERGENCIES AND DISASTER DECLARATIONS

A local emergency disaster may be proclaimed by the local governing body or a duly authorized local official, as specified by the appropriate local emergency ordinance. Proclamations will normally be made when there is an actual or threatened existence or condition of disaster or of extreme peril to the safety of persons and property within the territorial limits of a county, city and county, or city, caused by such conditions as air pollution, fire, insect infestation, flood, storm, epidemic, riot, or earthquake, or other conditions, including conditions resulting from war or imminent threat of war, but other than conditions resulting from a labor controversy.

The proclamation of a local emergency/disaster provides legal authority to:

- if necessary, request that the Governor proclaim a state of emergency;
- promulgate orders and regulations necessary to provide for the protection of life and property, including orders or regulations imposing a curfew within designated boundaries;
- exercise full power to provide mutual aid to any affected area in accordance with local ordinance, resolutions, emergency plans, or agreements;
- request that county, state and federal agencies provide mutual aid;
- require the emergency services of any local official or employee;
- requisition necessary personnel and material of any department or agency;
- obtain vital supplies and equipment and, if required immediately, to commandeer the same for public use.
- impose penalties for violation of lawful orders;
- conduct emergency operations without facing liabilities for performance, or failure of performance.

In general terms the proclamation:

- is the jurisdiction's formal acknowledgment to the federal government, the Congressional delegation, state legislature, state of Idaho, and the public that the jurisdiction has a severe crisis at hand;
- formally mobilizes all of the jurisdiction's agencies to support the response effort, within their capabilities; examine the problem of how their services will be affected, look for ways to mitigate the impact on their agencies and the local clientele and use their personnel and resources in the response at the sacrifice of normal program activity, if deemed appropriate;
- lays the ground work for obtaining further federal and legislative financial support and quickens other state and federal agencies' support and assistance.

APPENDIX C

RECLAMATION STATES EMERGENCY DROUGHT
RELIEF ACT OF 1991

Public Law 102-250, March 5, 1992

SECTION 1. SHORT TITLE

This Act may be cited as the “Reclamation States Emergency Drought Relief Act of 1991.”

SECTION 2. DEFINITIONS

As used in this act:

- (1) The term “Secretary” means the Secretary of the Interior.
- (2) The term “Federal Reclamation laws” means the Act of June 17, 1902 (32 Stat. 388) and the acts supplementary thereof.
- (3) The Term “Federal Reclamation project” means any project constructed or funded under Federal Reclamation Law. Such term includes projects having approved loans under the Small Reclamation Projects Act of 1956 (70 Stat. 1044).

TITLE I—DROUGHT PROGRAM

SEC 101. ASSISTANCE DURING DROUGHT: WATER PURCHASES

(a) CONSTRUCTION, MANAGEMENT, AND CONSERVATION.—Consistent with existing contractual arrangements and applicable State and applicable Federal law, and without further authorization, the Secretary is authorized to undertake construction, management, and conservation activities that will minimize, or can be expected to have an effect in minimizing, losses and damages resulting from drought conditions. Any construction activities undertaken pursuant to the authority of this subsection shall be limited to temporary facilities designed to minimize losses and damages from drought conditions, except that wells drilled to minimize losses and damages from drought conditions may be permanent facilities.

(b) ASSISTANCE TO WILLING BUYERS AND SELLERS.—In order to minimize losses and damages resulting from drought conditions, the Secretary may provide nonfinancial assistance to willing buyers in their purchase of available water supplies from willing sellers.

© WATER PURCHASES BY BUREAU.—In order to minimize losses and damages resulting from drought conditions, the Secretary may purchase water from willing sellers, including, but not limited to, water made available by Federal Reclamation project contractors through conservation or other means with respect to which the seller has reduced the consumption of water. Except with respect to water stored, conveyed, or delivered to Federal and State wildlife habitat, the Secretary shall deliver such water pursuant to temporary contracts under section 102; **Provided**, That any such contract shall require recovery of any costs, including interest if applicable, incurred by the Secretary in acquiring such water.

(d) WATER BANKS.—In order to respond to a drought, the Secretary is authorized to participate in water banks established by a State.

SEC 102. AVAILABILITY OF WATER ON A TEMPORARY BASIS

(a) GENERAL AUTHORITY.—In order to mitigate losses and damages resulting from drought conditions, the Secretary may make available, by temporary contract, project and nonproject water, and may permit the use of facilities at Federal Reclamation projects for the storage or conveyance of project or nonproject water, for use both within and outside an authorized project service area.

(b) SPECIAL PROVISIONS APPLICABLE TO TEMPORARY WATER SUPPLIES PROVIDED UNDER THIS SECTION.—

- (1) TEMPORARY SUPPLIES.—Each temporary contract for the supply of water entered into pursuant to this section shall terminate no later than two years from the date of execution or upon a determination by the Secretary that water supply conditions no longer warrant that such contracts remain in effect, whichever occurs first. The costs associated with any such contract shall be repaid within the term of the contract.

(2) OWNERSHIP AND ACREAGE LIMITATIONS.—Lands not subject to Reclamation law that receive temporary irrigation water supplies under temporary contracts under this section shall not become subject to the ownership and acreage limitations or pricing provisions of Federal Reclamation law because of the delivery of such temporary water supplies. Lands that are subject to the ownership and acreage limitations of Federal Reclamation law shall not be exempted from those limitations because of the delivery of such temporary water supplies.

(3) TREATMENT UNDER RECLAMATION FREEFORM ACT OF 1982.—No temporary contract entered into by the Secretary under this section shall be treated as a “contract” as that term is used in sections 203(a) and 220 of the Reclamation Reform Act of 1982 (Public Law 97-293).

(4) AMENDMENTS OF EXISTING CONTRACTS.—Any amendment to an existing contract to allow a contractor to carry out the provisions of this title shall not be considered a new and supplemental benefit for purposes of the Reclamation Reform Act of 1982 (Public Law 97-293).

(c) CONTRACT PRICE.—The price for project water, other than water purchased pursuant to section 101(c), delivered under a temporary contract entered into by the Secretary under this section shall be at least sufficient to recover all Federal operation and maintenance costs and administrative costs, and an appropriate share of capital costs, including interest on such capital costs allocated to municipal and industrial water, except that, for project water delivered to nonproject landholdings, the price shall include full cost (as defined in section 202(3) of the Reclamation Reform Act of 1982 (Public Law 97-293; 96 Stat. 1263; 43 U.S.C. 390bb). For all contracts entered into by the Secretary under the authority of this title,

(1) the interest rate used for computing interest during construction and interest on the unpaid balance of the capital costs extended pursuant to this Act shall be at a rate to be determined by the Secretary of the Treasury based on average market yields on outstanding marketable obligations of the United States with remaining periods to maturity of one year occurring during the last month of the fiscal year preceding the date of execution of the temporary contract or,

(2) in the case of existing facilities the rate as authorized for that Federal Reclamation project or,

(3) in the absence of such authorized rate, the interest rate as determined by the Secretary of the Treasury as of the beginning of the fiscal year in which construction was initiated on the basis of the computed average interest rate payable by the Treasury upon its outstanding marketable public obligations which were neither due nor callable for redemption for fifteen years from date of issue: **Provided**, That for all deliveries of water for municipal or industrial purposes for existing facilities to nonproject contractors, the rate shall be as set forth in paragraph (1) of this subsection.

(d) FISH AND WILDLIFE.—The Secretary may make water from Federal Reclamation projects and nonproject water available on a nonreimbursable basis for the purposes of protecting or restoring fish or wildlife resources, including mitigation losses, that occur as a result of drought conditions or the operation of a Federal Reclamation project during drought conditions. The Secretary may store and convey project and nonproject water for fish and wildlife purposes, and may provide conveyance of any such water for both State and Federal wildlife habitat and for habitat held in private ownership. The Secretary may make available water for these purpose outside the authorized project service area. Use of the Federal storage and conveyance facilities for these purposes shall be on a nonreimbursable basis. Water made available by the Secretary in 1991 from the Central Valley Project, California, to the Grasslands Water District for the purpose of fish and wildlife shall be nonreimbursable.

(e) NONPROJECT WATER.—The Secretary is authorized to store and convey nonproject water utilizing Federal Reclamation project facilities for use outside and inside the authorized project service area for municipal and industrial uses, fish and wildlife, and agricultural uses. Except in the case of water supplied for fish and wildlife which shall be nonreimbursable, the Secretary shall charge recipients of such water for such use of Federal Reclamation project facilities at a rate established pursuant to section 102© of this Act.

(f) RECLAMATION FUND.—The payment of capital costs attributable to the sale of project or nonproject water or the use of Federal Reclamation project facilities shall be covered into the Reclamation Fund and be placed to the credit of the project from which such water or use of such facilities is supplied.

SEC. 103 LOANS

The Secretary of the Interior is authorized to make loans to water users for the purposes of undertaking construction, management, conservation activities, or the acquisition and transportation of water consistent

with State law, that can be expected to have an effect in mitigating losses and damages, including those suffered by fish and wildlife, resulting from drought conditions. Such loans shall be made available under such terms and conditions as the Secretary deems appropriate: **Provided**, That the Secretary shall not approve any loan unless the applicant can demonstrate an ability to repay such loan within the term of the loan:

Provided further, that for all loans approved by the Secretary under ta authority of this section, the interest rate shall be the rate determined by the Secretary of the Treasury based on average market yields on outstanding marketable obligations of the United States with periods of maturity comparable to the repayment period of the loan. The repayment period for loans issued under this section shall not exceed fifteen years. The repayment period for such loans shall begin when the loan is executed. Sections 203(a) and 220 of the Reclamation Reform Act of 1982 and sections 105 and 106 of Public Law 99-546 shall not apply to any contract to repay such loan. The Secretary shall notify the Committee on Energy and Natural Resources of the Senate and the Committee on Interior and Insular Affairs of the House of Representatives in writing of any loan which the Secretary intends to approve not less than thirty days prior to granting final approval.

SEC 104. APPLICABLE PERIOD OF DROUGHT PROGRAM

(a) IN GENERAL.—The programs and authorities established under this title shall become operative in any Reclamation State only after the Governor or Governors of the affected State or States, or on a reservation, when the governing body of the affected Tribe has made a request for temporary drought assistance and the Secretary has determined that such temporary assistance is merited, or upon the approval of a drought contingency plan as provided in title II of this Act.

(b) COORDINATION WITH BPA.—If a Governor referred to in subsection (a) is the Governor of the State of Washington, Oregon, Idaho, or Montana, the Governor shall coordinate with the Administrator of the Bonneville Power Administration before making a request under subsection (a).

© TERMINATION OF AUTHORITY.—The authorities established under this title shall terminate ten years after the date of enactment of this Act.

TITLE II—DROUGHT CONTINGENCY PLANNING

SEC. 201. IDENTIFICATION OF OPPORTUNITIES FOR WATER SUPPLY CONVERSATION, AUGMENTATION AND USE.

The Secretary is authorized to conduct studies to identify opportunities to conserve, augment, and make more efficient use of water supplies available to Federal Reclamation projects and Indian water resource developments in order to be prepared for and better respond to drought conditions. The Secretary is authorized to provide technical assistance to States and to local and Tribal government entities to assist in the development, construction, and operation of water desalinization projects, including technical assistance for purposes of assessing the technical and economic feasibility of such projects.

SEC. 202 DROUGHT CONTINGENCY PLANS.

The Secretary, acting pursuant to the Federal Reclamation laws, utilizing the resources of the Department of the Interior, and in consultation with other appropriate Federal and State officials, Indian tribes, public, private, and local entities, is authorized to prepare or participate in preparation of cooperative drought contingency plans (hereafter in this title referred to as “contingency plans”) for the prevention or mitigation of adverse effects of drought conditions.

SEC. 203. PLAN ELEMENTS

(a) PLAN PROVISIONS.—Elements of the contingency plans prepared pursuant to section 202 may include, but are not limited to, any or all of the following:

- (1) Water Banks.
- (2) Appropriate water conservation actions.
- (3) Water transfers to serve users inside or outside authorized Federal Reclamation project service areas in order to mitigate the effects of drought.
- (4) Use of Federal Reclamation project facilities to store and convey nonproject water for

agricultural, municipal and industrial, fish and wildlife, or other uses both inside and outside an authorized Federal Reclamation project service area.

- (5) Use of water from dead or inactive reservoir storage or increased use of ground water resources for temporary water supplies.
- (6) Water supplies for fish and wildlife resources.
- (7) Minor structural actions.

(b) FEDERAL RECLAMATION PROJECTS.—Each contingency plan shall identify the following two types of plan elements related to Federal Reclamation projects:

- (1) those plan elements which pertain exclusively to the responsibilities and obligations of the Secretary pursuant to Federal Reclamation law and the responsibilities and obligations of the Secretary for a specific Federal Reclamation project; and
- (2) those plan elements that pertain to projects, purposes, or activities not constructed, financed, or otherwise governed by the Federal Reclamation law.

(c) DROUGHT LEVELS.—The Secretary is authorized to work with other Federal and State agencies to improve hydrologic data collection systems and water supply forecasting techniques to provide more accurate and timely warning of potential drought conditions and drought levels that would trigger the implementation of contingency plans.

(d) COMPLIANCE WITH LAW.—The contingency plans and plan elements shall comply with all requirements of applicable Federal law, including the National Environmental Policy Act of 1969 (42 U.S.C. 4321), section 715(a) of the Water Resource Development Act of 1985 (33 U.S.C. 2265(a)), and the Fish and Wildlife Coordination Act, and shall be in accordance with applicable State law.

(e) REVIEW.—The contingency plans shall include provisions for periodic review to assure the adequacy of the contingency plan to respond to current conditions, and such plans may be modified accordingly.

SEC. 204. RECOMMENDATIONS.

(a) APPROVAL.—The Secretary shall submit each plan prepared pursuant to section 202 to the Congress, together with the Secretary's recommendations, including recommendations for authorizing legislation, if needed.

(b) PACIFIC NORTHWEST REGION.—A contingency plan under subsection (a) for the State of Washington, Oregon, Idaho or Montana may be approved by the Secretary only a request of the Governor of the affected State in coordination with the other States in the region and the Administrator of the Bonneville Power Administration.

SEC. 205. RECLAMATION DROUGHT RESPONSE FUND.

The Secretary shall undertake a study of the need, if any, to establish a Reclamation Drought Response Fund to be available for defraying those expenses which the Secretary determines necessary to implement plans prepared under section 202 and to make loans for nonstructural and minor structural activities for the prevention or mitigation of the adverse effects of drought.

SEC. 206. TECHNICAL ASSISTANCE AND TRANSFER OF PRECIPITATION MANAGEMENT TECHNOLOGY.

(a) TECHNICAL ASSISTANCE.—The Secretary is authorized to provide technical assistance for drought contingency planning in any of the States not identified in section 1 of the Reclamation Act (Act of June 17, 1902, 32 Stat. 388), and the District of Columbia, Puerto Rico, the Republic of the Marshall Islands, the Federated States of Micronesia, the Trust Territory of the Pacific Islands, and upon termination of the Trusteeship, the Republic of Palau, the United States Virgin Islands, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

(b) TECHNOLOGY TRANSFER PROGRAM.—The Secretary is authorized to conduct a Precipitation Management Technology Transfer Program to help alleviate the problems caused by precipitation variability and droughts in the West as part of a balanced long-term water resources development and management program. In consultation with State, Tribal, and local water, hydropower, water quality and instream flow interests, areas shall be selected for conducting field studies cost-shared on a 50-50 basis to validate and quantify the potential for appropriate precipitation management technology to augment stream flows.

Validated technologies shall be transferred to non-Federal interests for operational implementation.

TITLE III—GENERAL AND MISCELLANEOUS PROVISIONS

SEC. 301. AUTHORIZATION OF APPROPRIATIONS.

Except as otherwise provided in section 303 of this Act (relating to temperature control devices at Shasta Dam, California), there is authorized to be appropriated not more than \$90,000,000 in total for fiscal years 1992, 1993, 1994, 1995, and 1996.

SEC. 302. AUTHORITY OF SECRETARY

The Secretary is authorized to perform any and all acts and to promulgate such regulations as may be necessary and appropriate for the purposes of implementing this Act. In carrying out the authorities under this Act, the Secretary shall give specific consideration to the needs of fish and wildlife, together with other project purposes, and shall consider temporary operational changes which will mitigate or can be expected to have an effect in mitigating, fish and wildlife losses and damages resulting from drought conditions, consistent with the Secretary's other obligations.

SEC. 303. TEMPERATURE CONTROL AT SHASTA DAM, CENTRAL VALLEY PROJECT.

The Secretary is authorized to complete the design and specifications of a device to control the temperature of water releases from Shasta Dam, Central Valley Project, California, and to construct facilities needed to attach such device to the dam. There is authorized to be appropriated to carry out the authority of this section not more than \$12,000,000.

SEC. 304. EFFECT OF ACT ON OTHER LAWS.

- (a) CONFORMITY WITH STATE AND FEDERAL LAW.—All actions taken pursuant to this Act pertaining to the diversion, storage, use, or transfer of water shall be in conformity with applicable State and applicable Federal law.
- (b) EFFECT ON JURISDICTION, AUTHORITY, AND WATER RIGHTS.—Nothing in this Act shall be construed as expanding or diminishing State, Federal, or Tribal jurisdiction or authority over water resources development, control, or water rights.

SEC. 305. EXCESS STORAGE AND CARRYING CAPACITY

The Secretary is authorized to enter into contracts with municipalities, public water districts and agencies, other Federal agencies, State agencies, and private entities pursuant to the Act of February 31, 1911 (43 U.S.C. 523) for the impounding, storage, and carriage of nonproject water for domestic, municipal, fish and wildlife, industrial, and other beneficial purposes using any facilities associated with the Central Valley Project, Cachuma Project, and the Ventura River Project, California, and the Truckee Storage Project, and the Washoe Project, California and Nevada. The Secretary is further authorized to enter into contracts for the exchange of water for the aforementioned purposes using facilities associated with the Cachuma Project, California.

SEC. 306. REPORT

There shall be included as part of the President's annual budget submittal to the Congress a detailed report on past and proposed expenditures and accomplishments under this Act.

SEC. 307. FEDERAL RECLAMATION LAWS.

This Act shall constitute a supplement to the Federal Reclamation laws.

APPENDIX D

TIPS FOR STRETCHING SHORT WATER SUPPLIES

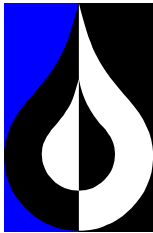
NRCS Idaho State Office

March 2001

Available at: http://www.id.nrcs.usda.gov/drought_tips2.pdf

Tips for stretching short water supplies

Crops and Soils...Irrigation...Pasture and Range...Wildlife...Yards and Gardens



Crops and Soils

The threat of water shortages means that many irrigators will have to make some difficult pre-planting decisions.

The acreage you normally plant and the type of crops you plant may need to be adjusted. Some crops use more water than others do. Some crops need water later in the growing season when water may no longer be available.

Research has proven that fertile soils make more efficient use of irrigation water. So if you cut back on the acreage you normally plant, make certain you plant your most fertile acres. Concentrate available water on those acres rather than trying to stretch it over your entire farm.

Knowing your soil type is important—it's your guide to rate and frequency of irrigation.

Here's a checklist of things to consider during this year's cropping season:

- √ Know precisely how fast your soil can accept water and its total water-holding capacity. This will allow you to decide how much water to apply at any given time.
- √ Know how much water is being delivered to the field. This will give you an indication of how long to irrigate.
- √ Determine the need for irrigation by shovel, auger, moisture meter, or the feel methods.

When irrigation is needed, soil will feel and act this way

<u>Soil Texture</u>	<u>A handful of soil will:</u>
Coarse	Tend to stick together slightly but will not form a ball
Medium	Be crumbly but will form a ball
Fine	Be pliable and will form a ball

Plant drought-tolerant cover crops on unplanted fields to protect them from wind erosion.

Consider conservation tillage methods. Every trip over the field with equipment results in moisture loss. Leaving some residue on the surface will reduce this loss.

Use chemicals rather than tillage to control water using weeds.

Alfalfa and some cool-season grasses can survive with minimal water. But the stand will suffer, particularly if grazed heavily.

Decide whether you will have a little water all season or more in the spring and none later on. Vary crops accordingly. For instance, alfalfa, cool-season grasses, corn, and sugar beets need water all season. Wheat, barley or rye need water early in the season.

All plants have critical water need times. Make sure you can provide your crops with water during their critical growth stages.

Examples of critical water need periods

<u>Crop</u>	<u>Critical water need</u>
Alfalfa	Just after cutting for hay At the start of flowering for seed production
Corn	Early ear formation From tasseling to silking stage
Potatoes	Need high soil moisture levels until potatoes are well formed
Small grains	Boot to heading stage
Sorghum	From boot to grain formation
Soybeans	Flowering and fruiting stage
Sugarbeets	First month after emergence



Irrigation water

Soil can absorb irrigation water only at a given rate that varies for each soil type.

Water requirements vary for different crops.

Make sure you apply water to your crops only when needed. Check soil moisture by spade, probe or soil moisture meter and make careful visual checks of your crops.

If you have a conservation plan for your farm or ranch, or if the soil in your area has been mapped, the Natural Resources Conservation Service can cross-check soil type and irrigation data and provide you with the water holding capacity of your soil for a given crop.

Don't know if your soil has been mapped? Check with your local NRCS office. Even if it hasn't been mapped, NRCS can give you general information.

Analyze your irrigation system so you can use your available water in the most productive way possible:

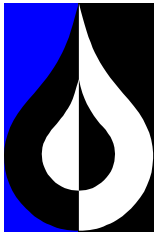
- Inspect your system **before** water starts to flow.
- Make sure ditches are clean and free from weeds; sediment or other debris that can slow water velocity, affect delivery rate and increase evaporation.
- Consider lining ditches with concrete or plastic. This could avoid the 10 to 90 percent losses that often occur in ditches.
- Make sure ditch structures like headgates, drop structures and pipe inlets are strong and functional. A washed-out ditch could mean a lot of water lost.
- Make sure ditchbanks are firm and not burrowed into by rodents. Rodent holes could cause leakage or failure.
- Make sure your pump is operating at peak efficiency. Regular maintenance will improve efficiency, guard against water loss and avoid shutdowns.

Sprinkler systems

- Make sure nozzles aren't worn and leaky.
- Check pipe connections and valves to prevent leaks.
- Operate sprinklers at recommended pressure. Use application rate, efficiency factor and time of application to figure how much to apply.
- Consider trickle and drip systems for orchards, vineyards, etc. Operate at recommended design values and maintain the filter system.

Irrigation management

- Measure the amount of water applied to the field. This can indicate when and how much to irrigate.
- Consider alternate row irrigation for crops planted in furrows. But remember to alternate the “alternate” row in later irrigations.
- Consider shorter runs if you furrow irrigate. Match stream size and velocity to soil intake rate and capacity.
- Consider catching and re-using tail water by pumping it back to the head of the system or re-using elsewhere.
- Irrigate most crops when soil moisture reaches about 50 percent of capacity.



Pasture and range

Roots transport moisture and nutrients to growing plants. When plants are overgrazed, root growth stops. When root growth stops, leaf growth stops too.

Irrigated pasture

Irrigated pasture management practices that encourage root and leaf growth are the same practices that allow plants to make the best use of soil moisture. They include:

- Rotation grazing with adequate rest and regrowth periods
- Leave 4 to 6 inches of top growth at the end of each grazing period
- Fertilize properly
- Apply irrigation water in the right amount at the right time

Range and dry pasture

Range and dry pasture forage production depends entirely on natural moisture. Overgrazing during a drought does more damage to perennial plants than during a season of normal moisture. Overgrazing can:

- * Reduce plant vigor
- * Stop root and leaf growth
- * Reduce ground cover
- * Invite accelerated erosion

Once erosion begins, it tends to get worse each year, further reducing plant vigor and forage production. This process is difficult to reverse

Rather than risk permanent damage to grazing resources, follow these tips:

Reduce livestock numbers to balance with forage supply and cull herds more than normal. Sell calves and lambs early.

Determine forage needs and buy needed supplements early.

Grow small grains or sorghums for hay or pasture. These need less water than conventional forage crops.

Defer planting perennial pasture, hay or range seedings until a year with more favorable water supplies.

Keep spring developments, stock tanks, float valves and pipelines in good working order so water isn't wasted.

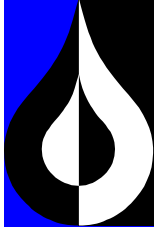
Prepare to haul stock water.

Give spring development high priority. Even a mediocre spring will be helpful.

Don't overgraze or otherwise disturb streambank vegetation. It will be needed to prevent erosion, reduce sediment and provide food and cover for wildlife.

Consider late season use in rest pastures.

Remember: If a pasture unit must be abused, well-established seedings can tolerate overgrazing better than native range.

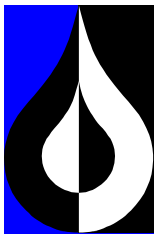


Wildlife

Wildlife will suffer during a drought as much or more than domestic livestock. The wildlife that shares your land is a valuable natural resource.

To help wildlife:

- Include additional features at stock water developments that will allow small animals and birds safe access to water. These are usually not expensive and are easily installed.
- Fence ponds and springs and install collector pipes to deliver water to a tank or trough. This will save the water source from damage by livestock trampling, as well as allow access by small animals and birds to lush vegetation that grows close to wet areas.



Yards and gardens

Soils differ in how fast they absorb moisture, how they store, and how long they retain it.

A rule of thumb says 1 inch of moisture will penetrate 12 inches deep in sandy soil, 7 inches in loam, and 4 to 5 inches in clay.

Don't apply water faster than the soil can absorb it.

Water early in the day to reduce evaporation loss.

Apply deep and less often. Shallow, frequent watering encourages shallow roots and more evaporation loss and reduces the moisture reservoir in the soil.

Don't let water run off into street or driveway.

Many perennials can do without water better than annuals can. Don't plant annuals when a water shortage is imminent.

Mulch around trees and shrubs and between garden rows to hold in moisture and discourage weeds that will compete for moisture.

Aerate your lawn to permit better water penetration.

Set your lawn mower blade to leave 2 or more inches of grass after mowing. Food is manufactured in the leaves and stored in the roots. Cutting grass too short keeps it from manufacturing food.

Fertilize adequately but not excessively. A sick-looking lawn or garden may need more fertilizer, not more water. Apply fertilizer before regular watering.

Hold up on new landscaping or consider using desert or native plants.

If you were planning to remove any lawn, trees, or shrubs in the future, this would be the year to do the work before you start watering.

Save water for plants that can't survive without it. Reduce watering of other plants and lawns to subsistence level.

Improve your lawn and garden watering system. Try automatic, drip or different sprinkler heads for better efficiency.

If it rains, reduce watering time accordingly. Measure how much rain has fallen and adjust your watering schedule and duration accordingly.

For more information

For more information or assistance with water conservation, contact your local NRCS office, your local USDA Service Center, and County Extension Office.

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USDA is an equal opportunity provider and employer.

March 2001

APPENDIX E

WATER CONSERVATION INFORMATION

Idaho Department of Environmental Quality

*Water Conservation Makes Sense for Idaho's Systems
(includes Water Conservation Tips for Residents)*

Available at:

http://www2.state.id.us/deq/water/dwnnewsletter/H20_Bulletin_SpecialED.pdf

Reducing Water Use at Home

Available at: http://www2.state.id.us/deq/assistance/fact_water.pdf

Governor Kempthorne: state must deal with its "energy and water challenges"

Water conservation makes sense for Idaho's systems

In a late February press release, Governor Dirk Kempthorne stated "that high wholesale power prices and low snow-pack and reservoir levels have set the stage for an energy and water supply shortage in Idaho." Kempthorne urged businesses and consumers to take conservation steps "to deal with the energy and water challenges we face here in Idaho."











This special issue of the **Idaho Drinking Water Newsletter** offers suggestions to public water systems about conserving water and energy. Water conservation measures make environmental and financial sense. Conserving water not only helps save Idaho's water resources but also can reduce operating costs, decrease energy use, and help extend the life of your water supply facilities.

Water utilities should encourage residents to voluntarily conserve water and explain that excessive use of water indoors and outdoors can jeopardize drinking water supplies. (See insert "Water Conservation Tips for Residents" for suggestions. The insert can be copied and used as a handout.)

If the level of demand is inflated by wasteful use, people pay more in both capital and operating costs than is necessary to provide safe and adequate water supply and wastewater services. Moreover, when the cost of supplying drinking water and processing wastewater is reduced, your system's financial resources can be used to meet other needs.

As a public water system, you may want to consider these recommendations regarding water conservation. For systems serving 10,000 or fewer people, DEQ suggests **metering, water accounting and loss prevention, water rates based on cost of service, and public education and information.**

Metering. The American Water Works Association (AWWA) recommends that every water utility meter all water taken into its system and water distributed from its system to its users. Metering is one of the most important parts of water conservation. In fact, unless a utility is 100 percent metered, it is difficult to enforce any conservation program. According to a U. S. Housing and Urban Development document, metered customers use an average of 13-45 percent less water than unmetered customers because they know they must pay for any misuse or negligence.

Leak This Size	Water Loss in Gallons		Annual Loss in Dollars @ \$5.00 per 1000 Gal. Rate
	Per Day	Per Month	
	185	5,550	333
	735	22,050	1,323
	1,655	49,650	2,979
	2,945	88,350	5,301
	6,620	198,600	11,916
	11,770	353,100	21,186
	18,395	551,850	33,111
	26,485	794,550	47,673
	36,050	1,081,500	64,890
	47,090	1,412,700	84,762
			Source: Drapar Aden Associates

Leakage estimates based on 50psi pressure

Metering can also help in managing the overall water system since it can help to

- locate service line leaks by identifying blocks of water that are not being charged to any customers,
- Identify high-use customers, who can be given literature on opportunities for conserving,

continued

Water Conservation, continued

- Identify areas where use is increasing, which is helpful in planning additions to the distribution system.

Water Accounting and Loss Prevention. Water that is lost through leakages and other means produces no revenues for your water system. DEQ recommends that all water systems implement a basic method of water accounting. Water accounting is less accurate when a system lacks source and connection metering, but there are ways that unmetered source water can be estimated.

Old and poorly constructed pipelines, inadequate corrosion protection, poorly maintained valves and mechanical damage are major factors contributing to leaks. In addition to loss of water, water leaks reduce pressure in the supply system. Raising the pressure to compensate for such losses only increases energy consumption and can make leaking worse.

Systems should consider instituting a loss-prevention program, which may include pipe inspection, cleaning, lining, and other maintenance efforts, to improve the distribution system and prevent leaks and ruptures.

Water Rates Based on Cost of Service. Water rates should reflect the real cost of water. Most water rates are only based on a portion of what it costs to obtain, develop, transport, treat, and deliver water to the consumer. DEQ suggests that systems consider whether their current rate structures actually promote excessive water usage rather than conservation. Only when rates include all costs can water users understand the real cost of water service and consequently, the need to conserve.

An added bonus to an information and education program is that consumers are much more supportive of a utility if they know how it operates. Public acceptance of

necessary rate increases is often enhanced if customers understand the needs of the water system and the costs involved in protecting public health.

Public Education and Information. The AWWA recommends that water systems have a public information and education program to promote water conservation. Systems can include inserts in their customers' water bills that provide information on water use and costs or tips for home water conservation, such as repairing leaky faucets and installing low-flow showerheads. ■

Environmental workshops for small northwest communities

The Northwest Small Cities Services, sponsored by the Idaho DEQ, U.S. EPA, the Association of Idaho Cities, and the Idaho Rural Water Association, is providing "*Environmental Workshops for Small Northwest Communities*" in March in Idaho.

The *free* workshops, aimed at small communities and special districts, will enhance the ability of participants "to address water, wastewater, and other environmental problems and to meet public health and environmental requirements."

The Idaho locations for the one-day, 9:00am-4:00pm workshops are **St. Maries**, March 26; **Blackfoot**, March 28; and **Glenns Ferry**, March 30. Required logistical information and registration must be completed on-line through the "Workshops" tab at <http://nwscs.org>.

Costs associated with this publication are available from the Department of Environmental Quality. Cost per unit: \$0.21 Printed on recycled paper.



DEPARTMENT OF ENVIRONMENTAL QUALITY

1410 North Hilton
Boise, Idaho 83706-1290

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ENVIRONMENTAL
QUALITY**

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Water Conservation Tips for Residents

Kitchen and Laundry:

- Keep drinking water in the refrigerator instead of letting the faucet run until the water is cool.
- Wash fruits and vegetables in a basin. Use a vegetable brush.
- Do not use water to defrost frozen foods, thaw in the refrigerator overnight.
- If washing dishes by hand, use a dishpan for rinsing dishes.
- Scrape, rather than rinse, dishes before loading into the dishwasher.
- Operate the dishwasher only when completely full.
- Add food wastes to your compost pile instead of using the garbage disposal.
- Use the appropriate water level or load size selection on the washing machine.

Bathrooms:

- Never use your toilet as a wastebasket.
- Do not let the water run while shaving or brushing teeth.
- Take short showers instead of tub baths. Turn off the water flow while soaping or shampooing.
- If you use a tub, fill the tub only half full.
- Never pour water down the drain when there may be another use for it - such as watering plants or a garden.

Outside:

- Sweep driveways, sidewalks, and steps rather than hosing off.
- Wash the car with water from a bucket, or consider using a commercial carwash that recycles water.
- When using a hose, control the flow with an automatic shut-off nozzle.
- Avoid purchasing recreational water toys that require a constant stream of water.
- If you have a swimming pool, consider a new water-saving pool filter.
- Lower pool water level to reduce amount of water splashed out.
- Use a pool cover to reduce evaporation when pool is not being used.

Equipment:

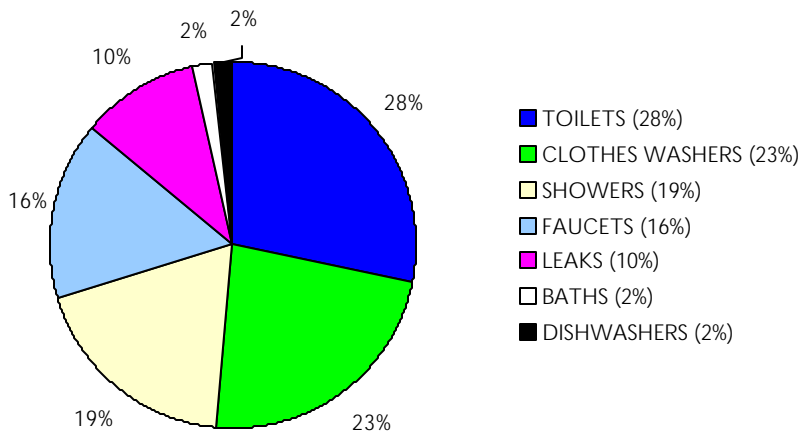
- Repair all leaks. A leaky toilet can waste 200 gallons per day. To detect leaks in the toilet, add food coloring to the tank water. If the colored water appears in the bowl, the toilet is leaking.
- Install ultra-low flow toilets, or place a plastic container filled with water or gravel in the tank of your conventional toilet. Be sure it does not interfere with operation of the toilet's flush mechanisms.
- Install low-flow aerators and showerheads.
- Consider purchasing a high efficiency washing machine that can save over 50% in water and energy use.

REDUCING WATER USE AT HOME

The average person uses more than 60 gallons of water each day inside the home. Most of the water is used in toilets, washing machines and showers. On average, leaks comprise 10% of water use. Add outdoor activities such as watering your lawn, washing your car and gardening, and you use considerably more water – approximately 180 gallons per day.

INDOOR RESIDENTIAL WATER USE, 1997

SOURCE: EPA



HOW TO CONSERVE WATER AT HOME

Indoors

- Your local water provider may offer residential water audits to help you reduce water use.
- Take showers instead of baths; they use less water.
- Repair leaks. Leaks make up 10% of water usage in the average household.
- Install low-flow showerheads and low-flow toilets. You can also place a plastic container filled with water into your tank to reduce water use in your toilet.

Outdoors

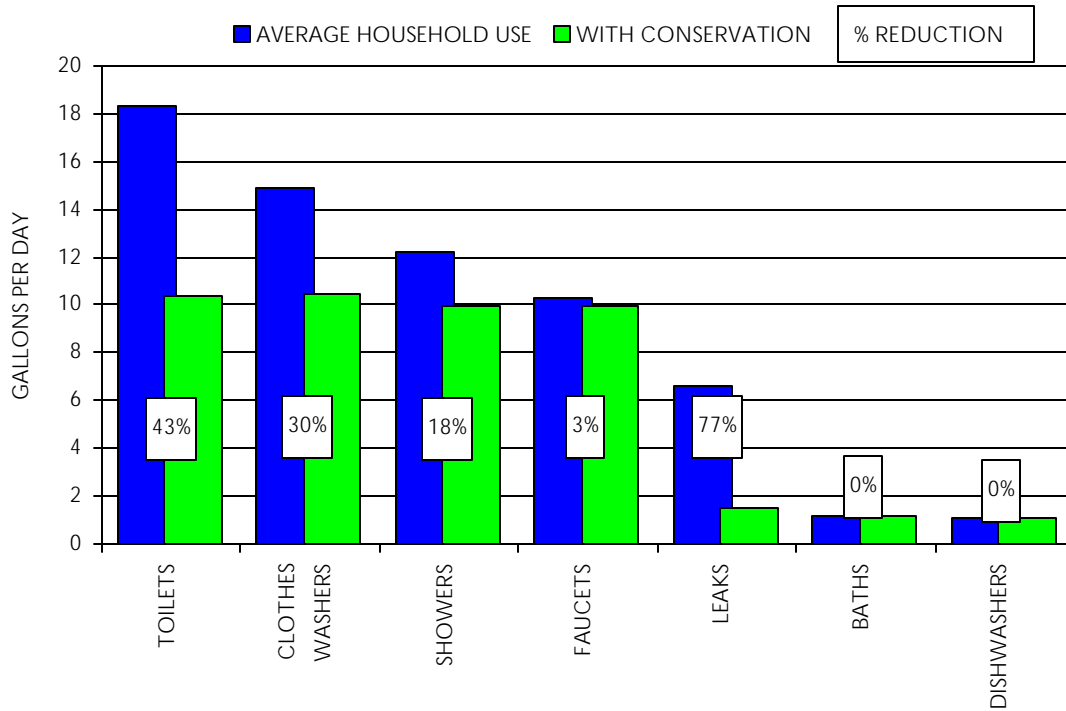
- Visit your local garden shop for native plants and tips on low-water-use landscaping.
- Use mulch to reduce moisture evaporation from the soil surface.
- Water during the coolest part of the day.



HOW MUCH WATER CAN THE AVERAGE HOUSEHOLD SAVE?

Simple water-conservation methods can reduce residential water use significantly. The average household can reduce water wasted through leaks by 77%. You can also reduce your usage by washing full loads of clothes and dishes, taking shorter showers or installing a low-flow showerhead. Reducing water use can also save energy and money.

INDOOR RESIDENTIAL WATER USE, 1997
SOURCE: EPA



MORE INFORMATION

The following web sites and organizations offer more water-saving tips for the home.

GROUP	PHONE	WEB SITE
ID DEPARTMENT OF ENVIRONMENTAL QUALITY	(208) 373-0502	WWW.STATE.ID.US/DEQ
IDAHO DEPARTMENT OF WATER RESOURCES	(208) 327-7900	WWW.IDWR.STATE.ID.US
UNITED WATER IDAHO		WWW.UNITEDWATER.COM
ENVIRONMENTAL PROTECTION AGENCY		WWW.EPA.GOV
EPA OFFICE OF WASTE WATER MANAGEMENT		WWW.EPA.GOV.OWM



APPENDIX F

IRRIGATION SURVEY OF WATER DELIVERY AND
USE
1988 Form

**IRRIGATION SURVEY
OF
1988 WATER DELIVERY AND USE
(Managers)**

Name _____ Representing _____
Position _____

1. Location:

- a. Watershed or stream? (name) _____
- b. Canal Co. or Irrigation District?
(name) _____
- c. Reservoir? _____
- d. Aquifer? _____
- e. County or Conservation District? (name) _____

2. Size of irrigated area _____ acres.

3. What portion of the irrigated area was set aside in 1988 due to expected water shortages? _____ %

4. What portion of the land set aside was put in a government set-aside program?
_____ %

5. What portion of the irrigated area is served by wells? _____ %, by surface water? _____ %

6. If irrigation well were used, were there any well problems that occurred in 1988 due to the short surface water supply?

Yes _____ No _____

Comment _____

7. For the acres irrigated in 1988 what portion of a normal water supply was available?
_____ %

8. Were there other problems associated with the short water year that reduced the supply to farms, i.e., delivery system, water rights, excessive seepage?

Comments

9. For acres irrigated in 1988, what is your estimate of the impact on crop production due to water shortage?

Alfalfa	_____	% of normal yield
Small Grains	_____	% of normal yield
Potatoes	_____	% of normal yield
Corn (Silage)	_____	% of normal yield
Corn (Grain)	_____	% of normal yield
Sugar Beets	_____	% of normal yield
Beans	_____	% of normal yield
Mint	_____	% of normal yield
Other	_____	% of normal yield
_____	_____	% of normal yield
_____	_____	% of normal yield

APPENDIX G

WEB SITE ADDRESSES FOR STATE AND
FEDERAL AGENCIES

AGENCY**ADDRESS**

STATE

Access Idaho (Official State of Idaho)	www.accessidaho.org
Association of Idaho Cities	www.idahocities.org
Idaho Bureau of Disaster Services	www2.state.id.us/bds/default.htm
Idaho Department of Agriculture	www.agri.state.id.us
Idaho Department of Commerce	www.idoc.state.id.us
Idaho Department of Environmental Quality	www2.state.id.us/deq
Idaho Department of Fish and Game	www2.state.id.us/fishgame/fishgame.html
Idaho Department of Water Resources	www.idwr.state.id.us
Idaho Soil Conservation Commission	www.scc.state.id.us
University of Idaho Extension Service	www.uidaho.edu/extension

FEDERAL

Army Corps of Engineers	www.nwd.usace.army.mil
Bureau of Reclamation	www.pn.usbr.gov
Farm Service Agency	www.fsa.usda.gov/idaho
Forest Service	www.fs.fed.us/r4
Geological Survey	www.idaho.wr.usgs.gov
National Weather Service	www.wrh.noaa.gov/wrhq
Natural Resources Conservation Service	www.id.nrcs.usda.gov
Risk Management Agency	www.rma.usda.gov/aboutrma/fields/wa_rso
USDA State Emergency Board	www.fsa.usda.gov/id/idahoseb.htm

OTHER

National Drought Mitigation Center	enso.unl.edu/ndmc
Idaho Power	www.idahopower.com
United Water Idaho	www.unitedwater.com/idaho
