

PROTECTION OF FISH AT WATER DIVERSIONS IN THE CENTRAL VALLEY

**INTRODUCTION**

There are more than 2200 diversions with inadequate or no fish protective mechanisms that take water from the Sacramento and San Joaquin Rivers, the Delta, and Suisun Marsh. There are uncounted additional diversions on the tributaries. These diversions are a major source of mortality for fish. The Resources Agency of California reports that there are more than 300 unprotected diversions on the upper Sacramento River alone ( between Redding and the confluence of the Feather River) which entrain up to 10 million juvenile salmonids annually. This translates to an annual loss of 100,000 adult fish. Some of the species being impacted are on State and/or Federal lists as threatened or endangered.

The State has broad powers to install or to require the installation of adequate fish protective devices on water diversions throughout California, and to otherwise regulate the diversion of water and the taking of fish. Generally, this entails the construction of screens at the diversion to prevent the fish from being entrained. The authority to require screens is generally found in the State Fish and Game Code ( Sections 5980-5983 for diversions over 250 cubic feet per second, Sections 6020-6028 for diversions under 250 cubic feet per second, and Section 6100 for proposed new diversions) and is administered by the California Department of Fish and Game. The authority to control diversions, and in particular diversions which unreasonably impact public trust fishery resources, is vested in the California State Water Resources Control Board.

In addition, should a diversion be located in an area where either State or Federally listed threatened or endangered species are found, both State and Federal governments have the authority and responsibility to ensure the complete protection of those species. That may involve requiring the diverter to install state-of-the-art protective devices , such as screens which meet the most rigorous needs of the species, or,if necessary, to limit the diversion of water.

**THE PLANNING PROCESS**

Diversers who are interested in the installation of a fish protection device at their facilities, or in upgrading an existing device, should be aware that assistance is available to help guide the through the planning process. Financial assistance may also be available through various programs.

As with any project, there are certain State and local permits and regulatory requirements that must be met before a project can be constructed or installed. These include local requirements that vary by county and others that apply statewide. The State requirements may include, but are not limited to, compliance with the California Environmental Quality Act (CEQA)and, if appropriate, the California Endangered Species Act; permits as needed from the State Water Resources Control Board, the Regional Water Quality Control Boards, and/or the Reclamation Board; and a

streambed alteration agreement with the California Department of Fish and Game. In addition, certain Federal compliance regulations may apply including compliance with the National Environmental Policy Act, the possible need for a Section 10/404 permit from the Army Corps of Engineers, and, if appropriate, compliance with the Endangered Species Act.

For information about local requirements, county planning departments are the best source of advice and assistance. For compliance with State requirements, the State or Regional Offices of the California Department of Fish and Game, Division of Inland Fisheries, should be contacted first. Their phone numbers can be found in the Government pages of the local telephone book under State Government Offices. Additional assistance may be provided by the California Trade and Commerce Agency-Permit Assistance Office at (916) 322-4245. For information and assistance with regard to Federal requirements contact either the National Marine Fisheries Service at (707) 575-6050, the U.S. Fish and Wildlife Service at (916) 979-2760, or the Regulatory Branch of the U.S. Army Corps of Engineers at (916) 557-5250.

## **EXISTING PROGRAMS**

( See Attached )

## **SCREEN CRITERIA**

In designing any project, certain criteria must be met to insure the project meets the intended purpose. The same applies to fish protective devices at water diversions. Both the State and Federal governments have developed criteria to ensure that adequate protection is provided to the species likely to be found in the area of the diversion. These criteria will vary according to the size and swimming ability of the species and the hydrologic characteristics in the area of the diversion. Basically, these criteria consist of certain requirements for mesh size in a screen to prevent entrainment; for maximum approach velocity at the face of the screen to prevent impingement on the screen and to reduce attraction to the screen; for sweeping velocity across the screen laterally to reduce the time that fish are likely to be exposed to the diversion; and , in some instances, for bypasses that return entrained fish to the stream.

The criteria that must be met for any specific project to meet the requirements of the regulatory agencies will generally be driven by the needs of the smallest or weakest swimming species of concern in the project area. For example, if there are two species of concern in an area, each with different needs (criteria), the most stringent criteria will apply since that will more than likely provide the minimal level of protection to both species. Representatives of any of the regulatory agencies or of any of the existing screen programs can advise on the criteria appropriate for any specific project. A contact list is appended to this document.

The criteria of the various fishery agencies for any given species may differ in some respects but the agencies coordinate and reach agreement on the specific criteria that would be appropriate for any specific project. Most of the existing programs that deal with unscreened or inadequately screened diversions have interagency technical coordinating committees established for just such a purpose.

## EXISTING PROGRAMS

The California Department of Fish and Game has a fish screen program which is intended to contribute to the cost of the screen if the diversion was in place prior to 1972. If the conduit has a maximum flow of 250 cubic feet per second (cfs) the Department is to provide the screen at no cost to the diverter. If the conduit is greater than 250 cfs, and is not involved with power generation, the Department is to pay the owner of the conduit one-half the cost of the construction and installation of the screen. If the diversion was put in place after 1972 and is located in a stream populated by salmon and steelhead the owner of the diversion is required to bear all costs of the fish screen. Until the passage of Proposition 204 the Department did not have adequate funds to provide for these requirements of the Fish and Game Code. Currently the State is in the process of determining how to distribute the funds provided by this legislative proposition. Additional information on this topic may be obtained from the local Regional Office of the Department.

The CALFED Program, is an association of Federal and State agencies, which was convened to address the problems and concerns involving the water coming into and being taken out of the Delta, formed by the joining of the Sacramento and San Joaquin rivers, and any resulting environmental effects. This Program also is a recipient of Proposition 204 funds. Members of this Program are still determining whether it will set up a separate fish screen program or join an existing one. Current information regarding the CALFED Program may be obtained from Ms. Cindy Darling at telephone number (916) 657-2666.

The Natural Resources Conservation Service (formerly the Soil Conservation Service) of the U.S. Department of Agriculture has a fish screen program. Working with the criteria of the regulatory agencies, the Conservation Service will help an agricultural diverter design a fish screen for his/her conduit. Currently, a new program, the Environmental Quality Improvement Program, is out for public review. This program identifies funds for screening of agricultural diversions from waters containing salmonids; however, final rules will have to be in place before funds become available. Current information may be obtained from the local office of the Natural Resources Conservation Service whose telephone number can be found in the Government Pages of the local telephone book under United States Government Offices.

The "Anadromous Fish Screen Program" has been established to fulfill the Department of the Interior's responsibilities pursuant to Section 3406(b)(21) of the Central Valley Project Improvement Act of 1992. The U.S. Fish and Wildlife Service is the lead agency implementing this Program and the Bureau of Reclamation is the cooperating agency. Under this Program the Secretary of the Interior is to assist the State of California avoid losses of juvenile anadromous fish resulting from existing diversions. Interior may provide up to 50 percent of the total cost of projects which will improve existing conditions. More information about this Program may be obtained by calling the Project Manager of the Anadromous Fish Screen Program at (916)979-2760.