Robles Diversion Fish Passage Facilities Biological Opinion
Ventura River, California

Q: What is a steelhead?

A: Steelhead are a form of rainbow trout that migrate between fresh and saltwater during different phases of their life-cycle. Adult steelhead migrate from the ocean into freshwater rivers and streams to spawn during the winter months when rain events create flow conditions suitable for upstream migration. Juvenile steelhead typically rear for 2 years before undergoing a process (smoltification) which alters the steelhead's physiology to allow adaptation to saltwater. While this transformation is taking place, the juvenile steelhead (smolt) emigrate from upstream rearing habitat down into the brackish estuarine environment where the smoltification process is completed; this emigration often extends into the spring months. Juvenile steelhead, after spending anywhere from two to five years in the food-rich marine environment, return as adults (measuring two to three feet in length) to their natal rivers and streams to lay their eggs. Unlike salmon, adult steelhead do not necessarily die after spawning, but may return to the ocean and live to spawn again.

Q: Why are steelhead in southern California protected under the Endangered Species Act?

A: Since the 1940's, the number of adult steelhead returning to spawn in southern California rivers and streams has plummeted from an estimated 55,000 to less than 500 fish annually, a decline of over 90%. This decline has been attributed in large measure to the numerous dams and diversions that have blocked steelhead access into historic spawning and rearing habitat located in the tributaries of major river systems, such as the Ventura River. Steelhead inhabiting streams between the Santa Maria River (Santa Barbara County) and the Mexican border (San Diego County) represent an important component of the evolutionary legacy of the steelhead species, and thus have been grouped together into a southern California population, or Evolutionarily Significant Unit (ESU). In response to their decline in the southern extent of their range, the National Marine Fisheries Service (NOAA Fisheries) listed steelhead in southern California (including the Ventura River) as endangered in August 1997. Pursuant to the Endangered Species Act of 1973 (ESA), it is illegal to "take"(i.e., harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt in any such activity) steelhead unless authorized by NOAA Fisheries.

Q: How many adult steelhead historically spawned in the Ventura River?

A: The best estimates by the California Department of Fish and Game (CDFG) indicate that a minimum of 4,000 - 5,000 adult steelhead historically spawned in the Ventura River

system in an average year prior to the construction of Matilija Dam on Matilija Creek in 1948. A majority of these fish utilized the headwaters of the Matilija Creek and Coyote Creek watersheds. Since completion of the Matilija Dam, and later the Casitas Dam on Coyote Creek and Robles Diversion Dam on the upper mainstem of the Ventura River in 1958, Ventura River adult steelhead have been restricted to suitable habitat within the lower mainstem of the Ventura River and San Antonio Creek. The present number of adult steelhead returning annually to spawn is difficult to determine, in part because there are so few fish, but the present run of steelhead is probably less than100 fish annually (a decline of 98%).

Q: What is the role of NOAA Fisheries in the Robles Fish Passage Facility?

A: Under section 7 of the ESA, Federal agencies are required to consult with NOAA Fisheries and/or the U.S. Fish and Wildlife Service (FWS) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species, or destroy or adversely modify designated critical habitat. Since the construction and operation of the Robles Diversion Fish Passage Facilities primarily affects steelhead that are under the jurisdiction of NOAA Fisheries, the consultation for the Robles Fish Passage Facility is being conducted by NOAA Fisheries. NOAA Fisheries also served on a Technical Advisory Committee that oversaw the design of the Robles Fish Passage Facility. The issuance of the Biological Opinion for the Robles Fish Passage Facility on March 31, 2003 by NOAA Fisheries concluded the section 7 consultation process with the U.S. Bureau of Reclamation (BOR).

Q: Why is a fish passage facility necessary at the Robles Diversion Dam?

A: The Robles Diversion Dam was built on the Ventura River in 1958 as part of the Ventura River Project (including the Robles Diversion Canal and Casitas Dam on Coyote Creek). These facilities were constructed without provisions for passing adult steelhead upstream of the diversion or preventing downstream emigrating juveniles from being diverted in the Robles Diversion Canal (and ultimately into Casitas Reservoir), and without sufficient bypass flows to maintain downstream steelhead habitat in the mainstem of the lower Ventura River. The Robles Diversion Dam, which has a series of four 7-foot high concrete by-pass gates, has effectively cut off approximately 8 miles of prime steelhead spawning and rearing habitat, as well as substantially reduced flows in the 14 miles of the lower Ventura River necessary to facilitate upstream migration and sustain spawning and rearing in the lower mainstem of the Ventura River.

Q: How will steelhead benefit from a fish passage facility at the Robles Diversion Dam?

A: The Robles Fish Passage Facility will re-establish access to approximately eight miles of prime upstream steelhead spawning and rearing habitat by providing an accessible route over the Robles Diversion Dam, and by restoring a portion of the flows necessary for fish

to reach the Robles Fish Passage Facility. Of the 44 days of annual passable flows that on average were historically available to steelhead, 22 days would be available with the proposed operation of the Robles Fish Passage Facility. The fish passage facilities will also prevent juvenile downstream migrant steelhead from being inducted into the Robles Diversion Canal and Casitas Reservoir, and thus allow these fish to pass to the ocean where they can mature into adults and return to spawn in subsequent years. Additionally, steelhead spawning and rearing habitat in the lower mainstem of the Ventura River will be improved through regulated water bypasses at the Robles Diversion Dam, both during storm events and between storm events, extending through the steelhead spawning and migratory season (January through June). Monitoring facilities and activities associated with the Robles Fish Passage Facility will also assist in gathering information about the steelhead population in the Ventura River system.

Q: Will there be any other benefits to the Ventura River besides steelhead migration?

A: Downstream flows bypassed for steelhead will benefit other aquatic organisms in the lower Ventura River, including a number of other federally endangered species such as the California red-legged frog, Least Bell's vireo, Tidewater goby, and the California least tern. Additionally, a partially restored flow regime in the lower river will help sustain riparian vegetation which many riparian birds and mammals depend upon for survival. The life-cycle of many plant and animal species require naturally variable flood flows. By gradually tapering off storm flows, the proposed operation of the Robles Fish Passage Facility will more closely mimic the natural flow pattern than does the present diversion operation which results in sharp, unnatural drops in flow levels following storm events. Also, a portion of the water which is bypassed through the Robles Fish Passage Facility will help recharge the lower groundwater basin, which is essential to maintain base summer flows that sustain rearing steelhead in the lower mainstem of the Ventura River.

Q: What is included in the Robles Diversion Fish Passage Facility?

A: The Robles Fish Passage Facility is a state-of-the-art facility designed specifically for the particular hydrologic conditions present within the Ventura River watershed. Principle components include: (1) a 360-foot long vertical slot fishway which will create numerous "step pools" by which upstream (and downstream) migrating fish can traverse the 7-foot high Robles Diversion Dam; (2) an auxiliary water supply pipeline, which would allow the ladder to operate over river-flows ranging from 50 to 1,500 cubic feet per second; (3) a flow control structure for metering water through the fishway; (4) a fish guidance device and upstream outlet designed to prevent "fallback" of fish successfully migrating through the facility; (5) a self-cleaning fish screen to prevent adult and juvenile downstream migrating steelhead from being inducted into the Robles Diversion Canal and Casitas Reservoir; (6) a series of grade stabilizers downstream to ensure adequate pool depth at the entrance to the fishway; and (7) fish monitoring and counting technology to determine how well the fish ladder is operating, and the number of fish utilizing the facility.

Q: Who will pay for the construction of the Robles Fish Passage Facility?

A: The construction of the Robles Fish Passage Facility will be paid for by a variety of public agencies using local, state and federal monies. The total cost of the fish passage facilities is projected at 6 million dollars. The local share is approximately $2 million, with the balance of $4 million coming from state and federal grants. The following commitments toward construction have been made to date: Casitas Municipal Water District - $2 million; California Coastal Conservancy - $1.75 million; CDFG - $1.5 million; and NOAA Fisheries - $0.75 million.

Q: Who is responsible for operating the Robles Fish Passage Facility?

A: The Robles Diversion Dam is part of the Ventura River Project, which is owned by BOR and operated by the Casitas Municipal Water District (CMWD). The BOR is responsible for the over-all operations of the fish passage facility, but the day to day operations will be under the auspices of the CMWD. Criteria for operating the Robles Fish Passage Facility, and any changes to the operation of the Robles Diversion Dam and Fish Passage Facility which affect steelhead, are the responsibility of NOAA Fisheries

Q: When and how often will the Robles Fish Passage Facility be operated?

A: The Robles Fish Passage Facility will be operated during the steelhead's natural upstream migration and downstream emigration period (January through June). Furthermore, the fish passage facilities will be operated only when there is sufficient natural flow in the river to allow migration of fish from the river's mouth at the ocean upstream to the Robles Diversion Dam, and downstream to the Ventura River estuary. The number of times each year and the number of days each year that the facilities will operate will depend upon the timing and duration of winter storms.

Q: How will flows be regulated through the Robles Fish Passage Facility?

A: The water bypass pattern developed for the Robles Fish Passage Facility is designed to provide a suitable depth of water (particularly over critical riffle areas) for a sufficient length of time so that steelhead will have an adequate opportunity to migrate upstream to the Robles Diversion Dam. The initial operating criteria for the Robles Diversion Facility generally provides for a minimum flow of 50 cubic feet per second for 10 consecutive days for each storm event, with between storm flows of 30 cfs, during the migratory season (January through June). Steelhead (like other anadromous salmonids) have adapted their migrational behavior to the river flows produced by heavy rain events. Peak storm flows typically break the estuary sand bar and entice adult steelhead into the river system. As storm flows naturally recede and sediment levels decrease, steelhead begin to migrate upstream. However, if flows are suddenly truncated (such as from the onset of diversion activities), steelhead will likely stop and wait for another storm event. Since the mainstem

Ventura River contains little adult holding habitat for much of its reach, any steelhead forced to hold over in this area of the river would likely perish as the flow in the river suddenly recedes. Therefore, NOAA Fisheries, in conjunction with BOR and CDFG, developed a release schedule that mimics the natural recession rate of a Ventura River storm event and thus eliminates sudden, unnatural reductions in downstream flow.

Q: Where does the water come from to operate the Robles Fish Passage Facility?

A: The water used to operate the Robles Fish Passage Facility naturally occurs as surface flow in the upper Ventura River, originating from the various tributaries of Matilija Creek. The operation of the fish passage facilities is not dependent upon the release of previously stored water from either Matilija Dam, Robles Diversion Dam, or Casitas Dam.

Q: How much water will be required to operate the Robles Fish Passage Facility?

A: Because the actual operation of the Robles Fish Passage Facility is tied directly to the natural occurrence of winter storms, which vary greatly in number and intensity from year to year, the amount of water which will be run through the fishway will change from year to year. In very dry years, the fish passage facilities may not be operated at all, while in very wet years they may operate two or three times a month from January through June. The amount of water required to operate the fish passage facilities, based upon historic flows in the river, has been calculated by CMWD's consultant to be 1,731 acre-feet per year. (An acre-foot is the amount of water needed to cover one square acre to a depth of one foot, and is equivalent to 325,000 gallons.) This amount could be considerably less in dry years, or more in the less frequent wet years where rainfall volumes are above average. For example, if the facilities had been operated in the very dry yeas of 1977 or 2002, there would have been little or no water required; however, during exceptional wet years such as 1969 or 1978, there could have been as much as several thousand acre-feet of water required for fish ladder operation. Actual water usage each year will be calculated through an on-going monitoring program.

Q: How will the Robles Fish Passage Facility affect the water supply of the CMWD?

A: It is estimated that the operation of the Robles Fish Passage Facilities will require on average 1,731 acre feet of water per year. This represents about 8% of the current annual safe-yield of Casitas Reservoir (21,500 acre-feet). Safe yield is the average amount of water that can be withdrawn annually from the reservoir without the reservoir drying up during the worst projected 20-year drought. Recent reports suggesting that water bypasses for fish passage would drain Casitas Reservoir do not reflect actual customer demand, or the water savings derived from the CMWD's Water Efficiency and Allocation Program (WEAP). If actual customer demand and anticipated water savings resulting from the WEAP are factored into the water budget, Casitas Reservoir would not have gone dry during the last two extended droughts on record, even with the operation of the Robles Fish

Passage Facilities. In the 44 years since the construction of the Casitas Dam, the average water demand from the system has been approximately 17,000 acre-feet per year, while the safe-yield has been exceeded only three times (1984, 1988, and 1989). Reservoir records indicate that since Casitas Reservoir filled initially in 1978, the reservoir has never been lower than approximately half-full, even during the drought of the late 1980's and early 1990's. Casitas Reservoir has been full (254,000 acre-feet) or near full for much of its history, as evidenced by the fact that Casitas Dam has overflowed eight times since the lake originally filled. Operation of the Robles Fish Passage Facilities will reduce this periodic uncontrolled spillage into lower Coyote Creek, which has averaged approximately 2,600 acre-feet per year since the construction of Casitas Dam, without affecting the amount of water available from the safe-yield of the reservoir.

Q: What measures are being taken to minimize impacts on the local water supply?

A: The Robles Fish Passage Facility is governed by a number of drought protection provisions. These include: (1) tying the operation of the fishway to naturally occurring river flows, rather than stored water; (2) providing a mechanism for further limiting operation of the fishway when Casitas Reservoir reaches 100,000 acre-feet of storage (approximately half of the reservoir's maximum storage); and (3) temporarily suspending operation of the fishway when the Casitas Reservoir reaches 17,000 acre-feet, and not resuming fishway operations until the level of Casitas Reservoir reaches 65,000 acre-feet. Furthermore, the Biological Opinion for the Robles Fish Passage Facility will be re-evaluated in five years to determine how well the facility is functioning and whether any operational changes are necessary.

Q: What is the relationship between the Robles Fish Passage Facility and the Matilija Dam removal project?

A: The Robles Fish Passage Facility is located two miles downstream of Matilija Dam (owned by the County of Ventura) and is essential to provide steelhead access to upper Matilija Canyon. Matilija Dam currently completely blocks access to approximately 13 miles of prime steelhead spawning and rearing habitat. CDFG has estimated that of the 4,000 to 5,000 adult steelhead which historically entered the Ventura River system, approximately half of these fish entered the upper Matilija Creek and tributaries to spawn. The removal of Matilija Dam would therefore open up one of the most important steelhead spawning and rearing habitats in the Ventura River watershed. However, effective fish passage must be provided at the Robles Diversion Dam if the habitat in Matilija Canyon is to be accessed by steelhead in the future.

References

National Marine Fisheries Service. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum NMFS-NWFSC-27, August 1996.

U.S. Bureau of Reclamation. 2003. Revised Biological Assessment for Diversion Operation and Fish Passage Facilities at the Robles Diversion, Ventura River, CA. South-Central California Area Office, February 21, 2003.

National Marine Fisheries Service. 2003. Biological Opinion. Robles Diversion Fish Passage Facility, Ventura River, CA. Protected Resource Division, Southwest Region, March 31, 2003.

For Further Information contact: Jim Milbury, Public Information Officer (562) 980-4006