

Recovering Ventura River Steelhead

By Paul Jenkin

— Surfrider Foundation —

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These days most people don't associate Southern California with wild trout. Indeed, throughout much of the region the historically rich rivers, floodplains, and estuaries have been replaced with strip malls, housing tracts, and hundreds of miles of famously congested freeways. But for those in the know, small populations of native fish may still be found in the cool mountain streams on the fringes of this concrete jungle. And in many of these watersheds, local stewards are working to protect and restore the once bountiful runs of steelhead.

In many ways, the Ventura River is ground zero for recovery of the endangered southern steelhead. Just 60 miles north of Los Angeles, this small 220 square-mile basin once supported 4,000-5,000 returning steelhead, a run that attracted fishermen from throughout the region. Back in the 'good old days' the local community in Ventura was well attuned to this bounty, and all the hotels were filled during a good steelhead season. Although today the region suffers from many of the ills of the metropolis to the south, these smaller communities have fought hard to protect open space and a unique quality of life. But although suburban development has largely been limited to existing urban boundaries, dams, flood control, water extraction, and runoff are constant threats to the native riparian habitat.

Dam Removal

As with all river systems, dams have the most direct impact on native fish-

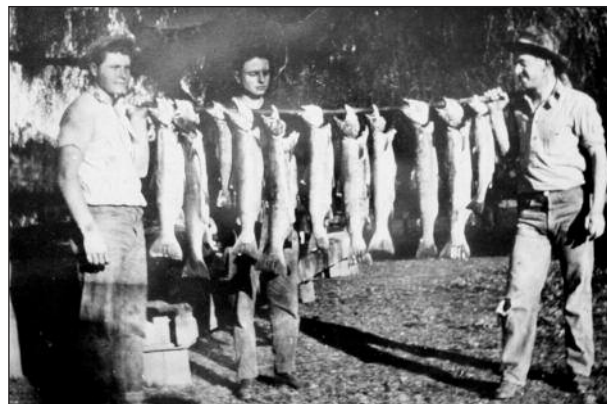
eries. The turning point for the Ventura River was dam construction, which resulted in the rapid decline of anadromous steelhead runs. And we are finding today that undoing past mistakes is more difficult than one might imagine.

There are two large dams on the Ventura River that together block access to the majority of headwater streams. These headwaters are critical, as that is where cool perennial streams flow through relatively pristine public lands. Matilija Dam was constructed in 1948 on Matilija Creek in the Los Padres National Forest, 16 miles from the Pacific Ocean. Then, almost a decade later, Casitas Dam was built in 1956 creating a large reservoir on Coyote Creek, a major tributary to the Ventura River.

While Casitas reservoir still functions as an important water supply, Matilija Dam has long outlived its useful purpose. In 1965, less than two decades after its construction, structural concerns prompted lowering the crest of Matilija Dam from 200 feet to 165 feet. The decreased capacity, combined with the high sediment yield from the steep coastal mountains, has now almost completely filled the remaining reservoir with over six million cubic yards of sand, gravel, cobble, and silt.

Planning for the removal of the obsolete structure has now been underway for almost 15 years. Interestingly, initial support for the ambitious effort did not begin with fisheries in mind, but rather due to a growing need to restore local beaches. Faced with a regional beach erosion problem, local policy makers were considering expensive beach replenishment and other artificial means to widen the beaches. When the Surfrider

Foundation, an organization focused on protecting coastal resources, presented the case that Matilija Dam was trapping sediment destined for the beaches, local governments resolved to investigate the feasibility of dam removal.



The Ventura River system once produced strong steelhead runs. Photo courtesy Surfrider Foundation

The initial planning for the removal of Matilija Dam started out rapidly. An appraisal investigation by the Bureau of Reclamation was completed in 1999, followed by a visit from the Secretary of the Interior, Bruce Babbitt in 2000. Matilija was the largest dam on Babbitt's nationwide 'dam busting' tour, where he had to forgo his ceremonial sledgehammer for a crane that was used to remove a 20-ton concrete block in a demonstration of the outgoing administration's support for dam removal.

With early cost estimates for dam removal ranged from \$20 million up to \$200 million, the US Army Corps of Engineers was selected as lead agency for the next planning phase. This was based largely upon the perception that they were the only agency capable of delivering the federal dollars necessary to undertake a project of this magnitude. With support from a unique multi-agency process, the Corps completed a feasibility study in 2004. The feasibility plan called for a

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complex sediment management scheme and a host of downstream improvements to flood control and water infrastructure. In 2007, Congress approved the \$144.5 million project through the Water Resources and Development Act (WRDA 2007.)

The complexity of the project was largely driven by water supply concerns. Any sediment released with the removal of the dam could potentially impact the Casitas Municipal Water District (CMWD) surface water diversion downstream. The Robles diversion dam diverts up to 500 cubic feet per second (cfs) from the main stem of the Ventura River into Casitas Reservoir whenever adequate flows are present. With the ever-present threat of drought, CMWD is sensitive to any lost diversion opportunity. Therefore, plans for the removal of Matilija Dam included dredging the fine silt accumulated in the reservoir and transporting it downstream of the Robles diversion using a slurry pipeline. This large volume of material, amounting to two million cubic yards or about a third of the total sediment accumulation, was to be stored within the floodplain so that future floods could carry it out to the Pacific Ocean. Ultimately, it was the cost of this slurry scheme, along with disputes over where and how to place this huge mass of silt, which stalled the project.

Now, in 2012, a Technical Advisory Committee has been appointed to develop a scope of work for additional studies to examine the feasibility of alternative approaches to sediment management to reduce the overall project cost. This may include incremental notching of the dam to allow natural transport, as well as modification of the Corps' plan so as to provide for fine sediment to be incorporated in upstream sediment management. Of course, any analysis will have to include quantification and mitigation of potential downstream impacts. And all of this has to take into account the highly unpredictable flood-and-drought climate of southern California, where any year could bring record floods, or mark the beginning of a long-term drought!

With the recent large dam removals in the Pacific Northwest, there is hope

for the eventual removal of Matilija Dam. But the difference in climate and politics combined with the current fiscal crisis creates an uncertain future. It is clear that this would be the single most effective action for the restoration of the Ventura River steelhead population, but there are also other issues that could make or break the overall recovery of the river.

Water for Fish?

The Ventura River is setting precedence for more than its dams. The fight over water for fish has been brewing for years, and the battle is steadily making its way ever higher through the courts. At issue is whether the federal government can require adequate instream flows for fish migration, and the case has been elevated to the higher courts in an era where, unfortunately, short-term human interests usually prevail.

Since 1956, slightly less than half the water storage in the Lake Casitas reservoir has been diverted from the main stem of the Ventura River through the Robles diversion dam and a 5-mile long canal. This diversion has not only blocked upstream migration of adult fish, but also diverted outmigrating steelhead smolts into Lake Casitas. In 1999, CalTrout sued Casitas Water District to provide for fish passage at Robles.

As a result, a complex fish passage facility was completed in December of 2004. The facility included a fish ladder and diversion screen. Migrating fish can now swim upstream as far as [Matilija Dam](#) and the [Ojai Quarry](#), and all downstream migrants are directed back into the river. The region has since experienced several wet years, and a camera installed in the fish ladder has documented several adult ocean-run steelhead.

The operations of this fish passage are the subject of a potentially precedent-setting case against the federal government (*Casitas Municipal Water District v. United States.*) At issue is the NOAA Fisheries 'Biological Opinion' on the operations of the fish ladder. This regulatory action (much more than just an opinion, as the title suggests) requires adequate releases of water to allow fish migration through the mainstem Ventura River

downstream of the diversion. Historically, CMWD was only required to release 50 cfs downstream, while diversions could be as high as 500 cfs. The new NOAA requirement calls for additional water to be released following storms, to ensure that downstream flows are adequate for steelhead migration and more closely mimic the natural hydrograph to prevent stranding. The water district, however, contends that this water belonged to them, and is suing for 'taking' of property worth up to \$60 million, the retail value of the potential water not diverted into the reservoir in the future. The case has been appealed to higher courts, the most recent ruling that the case is not 'ripe' because CMWD has not yet suffered financial loss for released water. However, if the water district ultimately prevails, this case could set a precedent that the federal government would be required to compensate property owners for any enforcement under the Endangered Species Act.

How Many Fish are There?

Until the past decade, any estimates of steelhead populations on the Ventura River system, and indeed anywhere in Southern California, have been little more than a guess. But with the potential for dam removal, and an increased focus on the now-endangered Southern steelhead, resources became available for field studies.

Initial studies were conducted in 2002 as part of the Matilija Dam Ecosystem Restoration project. There was a need to assess the habitat potential above the dam for the federal feasibility study to evaluate baseline conditions for steelhead habitat and predict the benefits from opening up over 16 miles of good-to-excellent perennial creeks to anadromous steelhead trout. These studies are a critical part of the Ecosystem Restoration project, since a dam of this scale has not yet been removed in the 'drought and flood' climate of southern California.

This initial work was expanded to include population estimates in the Ventura River and Matilija Creek basin. Fish counts were conducted through snorkel surveys of pools in the lower, middle, and upper reaches of the main stem Ventura River, as well

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as the main stem Matilija Creek. With funding from the California Department of Fish and Game (DFG) Fisheries Restoration Grant Program through the NOAA Pacific Coastal Salmon Recovery Fund, these studies were expanded to include more comprehensive surveys in 2006-2007, and have been continued on an annual basis. These annual surveys have begun to reveal the dynamic nature of this fish population, which is constantly adapting to the extreme variability in rainfall from year to year. The Matilija Coalition has served as the local sponsor for this program since 2009, and has secured additional local support from Patagonia and local fly-fishing groups. All of these studies are on the [Matilija Coalition website](#).

In addition to the population studies, NOAA Fisheries has been conducting bimonthly spawning surveys for the past three migration seasons. Although this data has not yet been published, it represents a huge step forward in documenting spawning activity of both anadromous and resident trout. Furthermore, it has allowed NOAA biologists to become intimately familiar with the system, which will add value and credibility to future regulatory and policy actions.

Watershed Restoration

Increased attention and funding have been directed at restoration within the watershed. This is largely due to the 1997 listing of the southern Steelhead under the Endangered Species Act, and subsequent funding through the PCFFA and California Department of Fish and Game. The California Coastal Conservancy has also invested over \$15 million in watershed projects, including the Matilija Dam Ecosystem Restoration Project, habitat acquisitions, fish passage improvements, and invasive plant removal.

Because the upper watershed area has been largely cut off to fish passage, considerable investment has been made on San Antonio Creek, the major tributary to the Ventura River that runs through the Ojai Valley. Recently several bridges have been constructed to eliminate so-called 'Arizona Crossings.' Although these are expensive investments, the politi-

cal winds have aligned to raise over \$6 million for these bridges, the most recent completed in March 2012.

In 2011, the Ojai Valley Land Conservancy (OVLC) completed acquisition of a historic ranch property near the San Antonio Creek confluence to create the new 'Steelhead Preserve.' This compliments the 'Confluence Preserve' to protect what has been termed the 'live reach' of the Ventura River. This 3-mile reach has year-round flows due to rising groundwater from subsurface bedrock layers, and provides some of the best spawning and rearing habitat in the Ventura River.

The land conservancy also protects over 1,600 acres and two miles of the river below the Robles Diversion dam. This 'Ventura River Preserve' has provided much needed access to open space, and the network of trails and seasonal swimming pools provide much enjoyment for the community. All told, over five miles of the mainstem Ventura River in the Ojai Valley have been set aside for conservation, habitat restoration, and recreation.

The younger counterpart in the lower watershed, the Ventura Hillside Conservancy (VHC), complements the work of the Ojai Valley Land Conservancy. VHC recently acquired several floodplain parcels below Foster Park, and another parcel just above the Ventura River estuary. Both of these organizations have built community support for their ongoing acquisition and restoration efforts that benefit the recovery of native steelhead.

As with most rivers today, the Ventura River has suffered from invasive species. Most prominent has been the giant reed, *Arundo donax*, with Ventura County government taking the lead on grant-funded programs to eradicate the invasive plant. Much of this was funded as a first step in the Matilija Dam ecosystem restoration project, which identified significant arundo growth above and below the dam that was deemed to impair riparian habitat value important to the steelhead. Work began in 2007, with significant progress made in removing the nonnative plant from the riparian areas in the upper reaches of the Ventura River and Matilija Creek. A similar effort has begun on upper San

Antonio Creek, as well as recent work by private landowners in the lower river above the estuary.

Water and Watershed Management

Beginning in 2007, the Ventura County developed an Integrated Regional Water Management Plan (IRWMP), which has attracted funding for watershed studies and projects. These studies have advanced the knowledge of the watershed, but there is still a need for a truly integrated water management plan that can balance existing and future human needs with the need to enhance riverine conditions for the steelhead and other threatened species. The Ventura River Watershed Council recently hired a watershed coordinator with state grants and contributions from member organizations with the goal of developing a coordinated watershed plan.

There is also a growing awareness of water and watershed issues within the community. Although few understand the extent of the changes over the past century, there is increasing concern for sustainable water use given the potential stressors of climate change and increasing population. The Surfrider Foundation has developed programs with creative titles like "Ocean Friendly Gardens" and "Know Your H2O" aimed at enhancing community awareness and stewardship. A short film titled "Watershed Revolution" featuring community activities in the Ventura River watershed aired nationwide on PBS in the fall 2011.

Hope for the Future

Although water management remains a contentious issue, there is reason for hope for the Ventura River and its steelhead population. Growing community awareness and support for land acquisitions and restoration projects has led to incremental progress within the Ventura River. With two large dams, water diversions and groundwater pumping, urban, agriculture, and industrial interests, the Ventura River may be seen as a microcosm of the threats to native steelhead trout as well as the potential for recovery in Southern California.

