



Merced River Wild & Scenic River Fact Sheet #2 Threatening a Wild & Scenic River

September 13, 2012

The Merced River upstream of Lake McClure Reservoir was designated as a National Wild & Scenic River in 1987 and 1992 by the Congress and Presidents Reagan and H.W. Bush, respectively. The latter designation enjoyed the full support of the Merced Irrigation District (Merced ID) Board of Directors, Mariposa County, Federal agencies, and environmental groups.

The Lake McClure Reservoir expansion proposal

Introduction

Merced ID asked Representative Jeff Denham (R-Turlock) to de-designate a portion of the Merced Wild and Scenic River (reversing Merced ID's previous support) in an attempt to enlarge Lake McClure Reservoir a third time, a body of water in Mariposa County currently impounded by the 490-foot-high New Exchequer Dam. This rockfill dam, completed in 1967, was built against the original Exchequer Dam, a 300-foot-high concrete gravity dam completed by Merced ID in 1926.¹ The House of Representatives voted in support of Denham's bill, HR 2578, in June of 2012. It has not been taken up by the U.S. Senate.

The Wild & Scenic River System was created in 1968. If successful, this would be the first time in the history of the System that a permanently protected river was de-designated for the purpose of stilling its free-flowing waters.

Merced ID's proposal is out of step with the Federal dam-licensing process underway

New Exchequer Dam is undergoing relicensing by the Federal Energy Regulatory Commission (FERC), the dam's first relicensing in its 50-year history. The regular study phase will conclude in 2012, with the conclusion of the five-year-long licensing scheduled for 2014. Any reservoir expansion would have to be licensed by FERC, yet no studies have been prepared by Merced ID to inform FERC or others about its proposed expansion of Lake McClure Reservoir. **It is therefore unlikely that the reservoir expansion could (or should) be considered in this relicensing, something the Merced ID believes is the purpose of its proposed legislation.**² Thus any proposed expansion (if wild & scenic river

and other state law protections are repealed) more properly belongs in a license-amendment proceeding.

The Bureau of Land Management, the Wild and Scenic River manager, has informed FERC that the Federal Wild & Scenic Rivers Act precludes federal agencies from developing a reservoir-expansion project alternative in a licensing or relicensing proceeding. However, **Merced ID is free to develop a proposal and have it reviewed by state agencies. Merced ID has not done so.**

Raising the spillway may imperil the dam, yet the safety issues are unanalyzed

Merced ID has said that raising the actual New Exchequer Dam structure would be too costly to undertake. Instead, Merced ID is proposing a cheaper yet more dangerous alternative: (1) making the operable spillway gates taller and, more controversially, (2) raising the 1,080-foot-long ungated emergency-spillway crest of the dam complex by ten feet. The current spillways are the low point of the dam complex and permit the reservoir to safely rise and spill waters eleven feet above the reservoir's normal maximum pool before potential flood flows reach the crest of the main dam, something that could imperil the dam itself. There are two features that characterize design of this and many other emergency spillways: (1) It is passive, not relying on mechanical devices, control systems, nor operators, (2) They are components of sufficient spillway capacity to ensure that a dam can pass standard modeled flows that would otherwise overtop and destroy the dam in extreme floods.³ **However, Merced ID is proposing to all but block this critical fail-safe part of the dam's safety infrastructure.** Perhaps not surprisingly, **Merced ID has not forwarded their proposal to state or federal dam-safety officials.**

Merced ID has not presented for review any structural analysis of the ability of the dam to safely withstand additional pressure from a raised reservoir. It is not uncommon for raised reservoirs to require expensive additional structural work to withstand added water pressure, particularly when modern, more conservative factors of safety are required to be incorporated into the design.⁴

Raising the reservoir may require an expensive raise of the Highway 49 bridge

The metal and more vulnerable footings for a portion of the Highway 49 steel bridge that crosses the reservoir at Bagby would be exposed to water by Merced ID's plan to raise the reservoir ten feet. Much of the bridge would block public navigation in any a new full-pool reservoir. If the dam and emergency spillway were raised concurrently in accordance with standard dam-safety practices, much of the bridge itself would be exposed to damage from floating storm debris within a surcharged reservoir.⁵ In any case, **CalTrans would probably insist on raising the bridge—at Merced ID's expense.** There is no cost estimate for this project; Merced ID has not published an analysis of the effects of its proposed project on the bridge.

Merced Irrigation District's proposal is inconsistent with state law and federal policy

Merced ID studies show that limestone salamanders are living by the reservoir in the potential expansion zone. The limestone salamander is a rare terrestrial salamander only found on or within steep talus slopes in the lower Merced River Canyon. Any aestivating⁶ salamanders and eggs in the proposed inundation zone are highly likely to be killed by a seasonally rising and expanded reservoir. This species is listed as threatened under the California Endangered Species Act and, in addition, fully protected by the state of California under its Fully Protected Species Act. **Thus, under California state law, expanding Lake McClure Reservoir is impermissible**, and it seems unlikely that Merced ID (a political subdivision of the State of California) can legally contravene its duties under state law to protect a fully protected and threatened species. Therefore, even if the National Wild & Scenic Rivers Act protection is repealed by Congress, Merced ID may be legally obliged to refrain from expanding the reservoir.

The BLM has previously established both a Merced River and Limestone Salamander Area of Critical Environmental Concern (ACEC) to focus management on the protection of river-based recreation and Limestone Salamander habitat in the Merced River canyon affected by the proposed reservoir expansion.

Existing recreation

The proposed reservoir expansion would inundate portions of the existing Bagby campground and nearby trails and historic sites, create more difficult conditions for whitewater boaters floating downstream, and extend the reservoir bathtub ring (zone of destroyed perennial vegetation) upslope and up canyon.

Upholding the purposes of the National Wild & Scenic Rivers Act

The National Wild & Scenic Rivers system was established for the benefit of present and future generations. It was not established to “bank” future reservoir sites, but rather to protect free-flowing rivers in perpetuity. No river in the history of the system has ever been de-designated in an attempt to flood it with a reservoir; this plan is hurtful to the purposes of the national system, and **a precedent-setting Congressional de-designation has implications to other potentially threatened rivers in this national system**. The Department of the Interior does not support the de-designation of the portion of the Merced River that is at risk by Rep. Denham’s legislation (H.R. 2578) and ultimately by Merced ID’s proposal.

Upholding the Federal Land Policy Management Act

The Federal Land Policy Management Act (FLPMA) is the modern organic act of the Bureau of Land Management (BLM). Consistent with its provisions, the BLM has identified wildlands it manages in the Merced River canyon and created a Merced River Wilderness Study Area, which it manages to protect. Among the impermissible uses here are dams and reservoirs.

Why are they doing this?

It is a puzzle. After all, New Exchequer Dam has never filled and spilled.

And using standard storage-to-yield estimates, Merced ID's proposed reservoir expansion could increase average yield by around ten thousand acre feet per year. The *Merced Sun-Star* reports that Merced ID expects an average yield of 12,000 feet per year. Merced ID facilities divert around a half a million acre feet per year. San Joaquin Valley groundwater overdraft to the south of the well-watered Merced Irrigation District is around one or two million acre feet per year. Obviously, **further damming the Merced River does not result in a meaningful amount of new water, either to the District or to anyone else.**

In response, some have argued that what this is really about is to break the National Wild & Scenic River system precedents of practice and intent to protect these special rivers for the benefits of future generations.

Confused facts in Congressional testimony

During the House Natural Resources Committee subcommittee hearing, Rep. Denham apparently believed that the expansion of the reservoir could prevent flooding in Yosemite Valley, located tens of miles upstream, and in the city of Merced (which is not in the watershed of the Merced River). Obviously, his need for rhetoric is standing in the way of common sense. The chair of the National Parks Subcommittee, the subcommittee of jurisdiction, was unable to distinguish between reservoir inundation and riverine flooding, having apparently never seen a reservoir "bathtub ring" or developed a familiarity with the ecosystem differences between rivers and reservoirs. Lastly, in another odd departure from common sense, Merced ID asserted that one side of its reservoir (the upriver side) was at the time sixty feet higher than another side (the downriver end by the dam), and that its reservoir was then actually flooding the potentially affected reach of river—this while gauge information was reporting considerably lower reservoir elevations than the elevation of the wild & scenic river upstream. Strange. But they were trying to convince the House subcommittee that their reservoir routinely expands into the wild & scenic river when, in fact, it never has.

In addition, the Merced ID and its supporters make much that the FERC project boundary for its project extends into the upstream wild & scenic river corridor, implying that this is somehow unusual and in ordinary circumstances should make it somehow pre-approved to store water there. This implication is untrue. The National Wild & Scenic Rivers Act prohibits dams from storing waters into wild and scenic rivers. It does not prevent FERC from establishing administrative boundaries for projects in wild & scenic river corridors. In fact, since FERC typically establishes project boundaries some distance away from project works and reservoirs, it is common for FERC administrative and wild and scenic river boundaries to overlap.

Conclusion

Merced ID is asking is for the Wild & Scenic River boundary to be moved so the currently protected river could be drowned by a reservoir. Yet Merced ID has not presented its risky design concept to dam-safety officials who could veto the Merced ID plan. Merced ID has not proven that it can afford to raise a major Cal Trans highway bridge, nor has it analyzed adverse impacts to river and nearby recreation. Furthermore, Merced ID should be bound by state law to protect the limestone salamander and, thus, not undertake any reservoir expansion. Project water-supply benefits are not significant, either to Merced ID and certainly to other San Joaquin Valley irrigators.

F.O.R., September 13, 2012

1. *History of the Merced Irrigation District, Merced and Mariposa Counties, California, 1999–1977, Kenneth McSwain, 1977.*
2. Testimony of Brian Kelly, Merced Irrigation District, House National Parks, Forests and Public Lands Subcommittee, June 19, 2011.
3. Standard dam-safety practice is to use an extreme hypothetical modeled flood called a “probable maximum flood” derived from National Weather Service models to size the adequacy of a dam’s spillways to prevent dam failure. Merced ID’s proposal essentially blocks the 1,080 foot long spillway used by the dam’s original designers to pass this type of very large flood without risk of dam failure.
4. Early in its history, New Exchequer Dam has had a history of seepage problems (when the dam was first filling, 300 cubic feet per second were seeping through the dam and state dam safety officials ordered Merced ID to drop the reservoir level 30 feet below its normal maximum pool) to reduce pressure against the dam. *History of the Merced Irrigation District, Merced and Mariposa Counties, California, 1999–1977, Kenneth McSwain, 1977.*
5. Reservoir surcharge occurs when a reservoir exceeds its normal maximum pool because of very large inflows or because of failures of its operator-controlled outlets. At Exchequer Dam, like similarly designed dams such as Oroville and Don Pedro Dams, and even O’Shaughnessey Dam, this occurs when the reservoir rises above the level of an emergency spillway.
6. Aestivating (from Latin *aestas*, summer, but also spelled “estivating” in the USA) is a state of animal dormancy, characterized by inactivity and a lowered metabolic rate that is entered in response to high temperatures and arid conditions. It takes place during times of heat and dryness, the hot dry season, which is often but not necessarily the summer months. Invertebrate and vertebrate animals are known to enter this state to avoid damage from high temperatures and the risk of desiccation. *Definition from Wikipedia*

For the latest version of this fact sheet and other resources, see: www.friendsoftheriver.org/our-work/rivers-under-threat/merced-threat