

[Commented via e-mail on 1/8/14]

Dear Mr. Gonzales,

I attended the Redding SWAP public presentation/scoping meeting and recall that you did not attend because your wife had been in a bike accident that day. I hope that her recovery is going well, and am sorry for the pain she and your whole family must have suffered.

I would like to submit the following comments for the 2015 SWAP Update:

1) *California Fish and Game Journal*, a major peer-reviewed scientific publication, last year published two papers that contradict current CDFW policy regarding beavers, as shown on their website wherein beavers are named as "non-native and nuisance" species for many areas of the state.

The first paper (James and Lanman 2012) addresses buried beaver dam wood that was dug up in Sierra's in the late 80's and carbon dated to 580, 1730 and 1850 A.D. This is significant because it serves as scientific proof that beaver occurred in the Sierras before European settlers arrived, thus refuting California Fish and Wildlife's long held belief that beaver are not native to the Sierras above 1000 feet in elevation. This erroneous belief was based on a reports issued in 1937 and 1942, back when there were few beaver left and no modern means to verify their historic presence.

The second paper (Lanman, et al. 2012) lists several forms of historic evidence (including the buried dam wood) that further prove that beaver were in fact native to the Sierra.

So, at a bare minimum, there should be a policy of non-lethal management strategies for managing beaver in the Sierras. An even better policy would be to relocate beavers to foothill and mountain areas, where appropriate habitat exists, to help restore wetlands and high mountain meadows, and to reduce drought impacts on stream flows thereby ensuring greater summer water supply in this era of decreasing Sierra snow pack.

Another reason to change policies on beaver is their immeasurable value to anadromous fisheries. Beavers are now used in Washington and Oregon to create the rearing conditions needed by these fish, who co-evolved with beaver dams and generally seem to have no issue with getting through or over them.

As stated in the 2005 State Wildlife Action Plan under the section titled **Conservation Actions to Restore and Conserve Wildlife** in the N. Coast/Klamath Region:

For regional river systems where insufficient or altered flow regimes limit populations of salmon, steelhead, and other sensitive aquatic species, federal and state agencies and other stakeholders *should work to increase instream flows and to replicate natural seasonal flow regimes.*

Of course, beavers do this, and the cost to us is almost nothing.

also from the 2005 SWAP:

“Beavers are well-known dam builders, creating small wetlands used by a host of other animals.”

The ecological value of beavers is well-known by the scientists who study them, as well as lots of observant people who have witnessed the benefits beavers provide. These benefits are numerous and well-documented. Here are just a few:

- Reduced stream sedimentation and erosion
- Stream temperature moderation
- Higher dissolved oxygen levels
- Overall improved water quality
- Increased natural water storage capabilities within watersheds, including recharge of ground water aquifers
- Reduced stream velocities, which means a decreased number of extreme floods
- Removal of many pollutants from surface and ground water
- Drought protection through increased year-round stream flow
- Improved food/habitat for fish and other animals, including 43% of the endangered species that the US Department of Fish and Wildlife is mandated to protect

Beaver is now being considered for the list of surrogate species by USFWS. With federal level leadership, all of the improved local hydrological effects provided by beavers, applied across much of this continent, would add up to a significant factor in curbing the droughts and weather extremes of climate change, as California and most of the arid west are experiencing right now.

In 2002, when University of Alberta biologist Glynnis Hood was in the middle of getting her PhD, the Prairies experienced the worst drought on record. She watched the wetland dry up “right before her eyes.” But where beaver dams existed, the pond water remained. Poring through 54 years of historic aerial photos, records of beaver populations and climate data, she discovered that the ponds with active beaver lodges had nine times more water during droughts than ponds without dams. In dry summers, the beavers kept water from trickling out and built channels to guide the water in; they had more impact than any rainfall or drought. Dr. Hood says this wasn’t a surprise to some of the older farmers, who often kept well-placed beavers on their land. Yet she would go to conferences where engineers would give presentations on river flow (with beaver dams in

their photos) and never mention the animal. In wetland and river restoration, which in the U.S. has cost billions of dollars, the very creature responsible for shaping the landscape was largely absent from the discussion. (from the [Globe and Mail](#))

Thanks to a high density of plant matter and a low rate of decomposition, wetlands are among the world's best ecosystems for capturing and storing the carbon from CO₂. Their destruction, on the other hand, releases lots of CO₂ into the atmosphere as their soils dry out and oxidize. Of course beavers make wetlands, at no charge.

Since beavers provide many of the environmental services that we need, we ought to encourage their proliferation, especially since they provide these services for free. In these drought-ridden and economically strained times, why wouldn't we think of partnering with beavers?

Given the written records of beaver abundance in every locale suited to them (most of California was), it is clear that beavers formerly experienced, a serious (noncyclical) population decline and range retractions that, if continued or resumed, would qualify the species for State threatened or endangered status. Common sense tells me that any species whose numbers are less than 10% of what they were just a century ago is a threatened species.

So the best policy of all would be a ban on killing beavers in California accompanied by public education and facilitation of the use of the simple devices that eliminate the nuisances caused by beavers without removing the beavers. If such a thing is politically impossible right now, can we start with a ban in all regions except the Mojave, Sonoran and Colorado Deserts and Southern California Mountains, Valley and Coast? Can the SWAP play a significant role in this? Can the SWAP help create stewardship incentives for landowners with regards to beaver?

2) This comment is in regards to the following language taken from the SWAP website, which reads:

For example, the plan will be direct about how growth and development are replacing and fragmenting wildlife habitats. The directness of the description of threats should not be interpreted as a lack of appreciation for the legitimacy and benefits of activities and projects that also affect wildlife. Residential and commercial development, agricultural operations, diversions of state waters, and recreational activities are all necessary and important. However, the plan will recommend changes in human activities, such as improving conservation planning, to reduce the impact of development on important habitats.

I appreciate the intent to be direct about the threats to life, but find the language used (apparently as a way to assuage mainstream views) to be offensive: I have yet to see a single modern-day approach to development, agriculture, water diversion or recreation that fully assesses the impacts on biological integrity of a locale. As done, none are necessary or important. So long as the economy remains the bottom line of land management decisions, instead of biological integrity, we are doomed to undermine the very life that sustains us. We are in a crisis state, and

the language of the SWAP should reflect that, not cede to the social norms of a culture out of touch with physical reality.

I hope the authors of the 2015 SWAP agree and will be bold enough to speak the truth. We need to plan for the reduction of the human population and implement a rationing approach to all "resources."

Sincerely,

Brien Brennan

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