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Betty Warne  
Senior Biologist, Recovery Division  
U.S. Fish and Wildlife Service  
2800 Cottage Way, Rm W-2605  
Sacramento, CA 95825

Dear Ms. Warne,

As per your request I have evaluated the Santa Rosa Plain draft recovery plan, with particular attention to California tiger salamanders – I do not have any particular expertise on the plants listed. I noted some errors in the material concerning CTS biology and will note those first. This transitions into some recommendations where I think that specific policies would assist in recovery, and finally addresses the Recovery Program. The last is well-intentioned but very weak.

P. 32: “Larval salamanders hatch and develop in vernal pools and ponds, before going through metamorphosis where external gills for respiration appear along with developing legs.” There are no external gills after metamorphosis.

P. 33 (Diet): Larvae feed heavily on oligochaete worms feeding on cattle feces in stockponds. Prey identity and abundance strongly influences growth, and the phenology of prey species’ abundance can be critically important. In SB Co larval populations have far higher growth rates and survivorship if they are physically large enough to eat *Pseudacris*, *Anaxyrus* and small *Spea* tadpoles, vs. larvae from eggs laid after anurans have bred. The latter often cannibalize or feed on dangerous prey such as backswimmers (*Notonectidae*). In some years there may be as many as three larval cohorts of CTS, and cannibalism is common.

P. 37 ff. I am disappointed that thre reserves system and mitigation banks are not mapped with this Plan. In fact, the lack of geographic detail seems deliberate, and makes much of the Plan a joke to try to analyze. “Assiduously impact the interface beneficently” doesn’t tell me a damn thing about what is going to happen. Lack of geographic detail is a VERY serious flaw throughout the Plan.

P. 52: I agree that there are insufficient lands set aside for CTS now.

P. 53: reference to vineyards as “less compatible” is misleading. Vineyards are incompatible at near 100% level because they eliminate all burrowing rodents. An expanse of vineyard is a death trap to salamanders trying to traverse it, because they will find no daytime refuges.

P. 57: “Within a population of the Santa Barbara DPS of the California tigersalamander, hybrid tiger salamanders were observed preying on native California tiger salamanders and all cannibalism observed was unidirectional, with hybrid always preying on native California tiger salamanders (Ryan *et al.* 2009).” This did not take place in Santa Barbara County.

P. 55 ff: Raccoon populations supported by nearby suburban developments are a severe problem, because they will rapidly learn about migration nights and systematically intercept animals by patrolling pond edges. All reserves should have continuously-active raccoon removal programs, with opossums captured incidentally also being euthanized. It does no good to have reserves if all of the adults are bitten in half an hour before they breed, having survived 6+ years only to feed raccoons.

P. 59: Road mortality is a severe problem at some sites. As with raccoons, it does no good for a female to survive larval development, metamorphosis and 6+ years in upland habitat only to be run over a half hour before she breeds. It is not that difficult to anticipate when the main pulses of breeding migrations will occur, and state and municipal authorities should be required to temporarily close high-impact roads for the 2-3 hours twice or three times a year when most of the salamanders cross. In my view the Service should enforce this as a take issue and require HCPs of road agencies. The alternative is to close roads permanently.

P. 59: Various jurisdictions have advocated poisoned grain for rodent control in CTS habitat. This is a bad practice for two reasons: first, rodents tend to bring the grain into their burrow systems, where it remains uneaten after they die. The grain is hygroscopic, and will have beads of water on it when the dewpoint is reached. This leaches out poison, that is in and on the soil where salamanders move and rest. Secondly, the grain is eaten as it decays by various invertebrates resident in the burrows, and secondary poisoning of CTS is likely.

#### Comments on Recovery Program

P. 85, A/2: 50% alienation is far too high if it includes anything but low-intensity land use such as dry farming or orchards. Salamanders do not appear to avoid residential and light industrial areas, and one needs to assume that virtually all animals entering such areas will not come back out. You cannot lose 50% of a population annually. I would recommend a maximum of 20% alienation, ideally half that.

I repeat that there is insufficient detail provided to reach any decision about the viability of this recovery plan. The plan is full of assurances and platitudes, but it lacks any demonstrated ability to meet its goals. There is no plan yet in SB Co, and as far as I can see no coherent strategy to prevent incremental habitat loss. For example, all but one of the breeding ponds in one of the 6 Critical Habitat units have been destroyed, one at a time, by agricultural interests in full view of the Ventura Field Office, and no consequences have ensued. Nothing remotely close to adequate upland habitat gets considered here before projects are signed off on, and the DPS is at real risk of extinction. Nobody is responsible, because the plans all say “assiduously do good” with absolutely no detail nor any accountability.

Without firm plans to acquire properties a, b, c, d ... this plan is just words. Ideally it will be a catalyst to action, but it can also serve as an obstacle, another way to kick the can down the road. The text here shows that the Service knows in a general way what needs to be done, but to count it has to be implemented.

My overall suggestion is that the Plan be withdrawn until such time as it can have honest content about what lands will be acquired where, when and how.

Sincerely,

A handwritten signature in blue ink that reads "Samuel Sweet". The signature is written in a cursive style with a long horizontal stroke extending to the right from the end of the name.

Samuel S. Sweet  
Professor, Ecology and Evolution