

20 February 2014

Environmental Review Board  
Unincorporated Coastal Zone  
Santa Monica Mountains  
Los Angeles County

To the Environmental Review Board:

For the past 23 years my students and I have been studying the ecology of Trancas Creek, Malibu, California. Our two decades of stream surveys have demonstrated that invasive predators, non-native predatory fish and crayfish, have dramatically and negatively impacted the biology of native amphibians and other native aquatic organisms. We recently published a paper (Journal of Arid Environments, 2013) suggesting that only periodic natural flooding and manual trapping of invasive predators are sustaining native amphibians. Without these events to reduce invasive predators, it is likely that native amphibians will gradually be extirpated by invasive predators. The negative impacts on amphibians are indicative of the negative impacts invasive predators have on virtually all native aquatic organisms including: two striped garter snakes, native aquatic insects, native aquatic crustaceans, native aquatic plants and others.

For the past year I have been working with the Malibu Institute and advising them on its plan to eradicate invasive aquatic predators from the ponds and waterways on Malibu Golf Club property. There is little doubt that the ponds on the Institute property are the source of invasive crayfish and fish that find their way downstream to the rest of the Trancas watershed. If the plan to remove invasive predators is successful this will be the single most important restoration event to restore aquatic biodiversity to Trancas Creek.

In addition to advising the Institute on invasive species removal I have also suggested that the Institute support a plan to restore native California newts to the upper watershed. Currently the stream stretches on the golf course contain invasive crayfish and fish. Much of the open channel of the stream is also currently bordered by golf fairways on both sides. With the removal of the invasives and the rerouting of the stream channel against the natural chaparral vegetation the habitat will become considerably more suitable for native amphibians and in particular native California newts. Newt egg masses could be transported from small downstream populations or could be brought in from locally genetically similar populations. The stream channel (void of invasives) will be perfectly suitable habitat for newt larvae and transforming newts (from larval to juveniles) will be able to migrate easily into upland natural habitat without being forced to cross golf fairways. Newts like many

aquatic organisms are not only dependent on good aquatic habitat, but also on high quality upland habitat as well. The Institute supports this plan to restore California newts to upper Trancas.

We have little data on what the upper Trancas stream channel was like prior to the creation of the golf course. Forty years ago massive amounts of fill were used to cover the natural streambed to produce long, broad, flat golf fairways. This situation normally could produce enormous erosion events as a result of heavy rainfall. In two decades plus of studying Trancas creek I have seen little sedimentary fallout from large rain events. My conclusion is that the culvert and channel control mechanisms used by the golf club prevent the erosion of the fill during high rainfall events. A massive erosion event could be catastrophic for wildlife below. Many native aquatic organisms are dependent on deep stream pools for survival and a heavy siltation event would fill those pools and eliminate habitat. Further daylighting of the stream could result in erosion events. Further, many of our natural streams in the Santa Monica Mountains only have above surface water flow for parts of the year or during periods of high discharge. It is common for many natural waterways in the mountains to have subterranean flow and little or no flow at the surface.

If you have any questions please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Lee B. Kats". The signature is written in a cursive, flowing style.

Lee B. Kats, Ph.D.  
Professor of Biology  
Frank R. Seaver Chair in Natural Science  
Pepperdine University

cc: Sam Dea