

The effects of drought and fire in the extirpation of an abundant semi-aquatic turtle from a lacustrine environment in the southwestern USA



We documented a significant mortality event affecting a southwestern pond turtle (*Actinemys pallida*) population living in a lake in southern California, USA. The area around the lake was impacted by a large wildland fire in 2013 that occurred during a protracted drought. As the mortality event was still unfolding, we collected data in 2014 on water quality, demographic structure, and short-term survivorship of the population. Water quality was poor with low levels of dissolved oxygen and high salinity of up to 45.90 ppt. Many turtles were severely emaciated and coated with a pale mineralized layer on their shells and skin. Estimated survival rate was low leading to a projected 90% decline in 134 days and a high probability of extirpation within a year. The lake was dry in September 2015 with no evidence of live turtles. Necropsies and low volumetric body condition indices suggested death by starvation. Although this semi-aquatic species has the ability to aestivate in upland habitats during periods of low water or move to other nearby water bodies, it is unlikely that many were able to do so because of their extremely poor condition and the severity of

the drought conditions throughout the area.

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