Peer Review: Submitted to USFWS San Francisco Bay National Wildlife Refuge by Holly Gellerman, Staff Environmental Scientist of the CA Dept of Fish and Wildlife for Modeling the Impacts of House Mouse Eradication on Ashy Storm-Petrels on Southeast Farallon Island – PRBO, October 2012.

Thank you for the opportunity to review this well-written and organized report. This study set out to evaluate the ecological relationships among House Mice, Burrowing Owls, and Ashy Storm-petrels on South Farallon Islands using population estimates and modeling for various scenarios - and was successful in doing so. The resulting model clearly demonstrates a relationship among these three species. And further, it demonstrates the urgent need to eradicate the House Mouse from the South Farallon Islands to conserve the Ashy Strom-petrel population.

The methodologies, analyses, assumptions included in the model, and interpretations of the results are well-developed and appropriate for Ashy Storm-petrels, Burrowing Owls, and House Mice, post-eradication. It was unclear if field data was collected and analyzed for the House Mouse population. Without description of House Mouse abundance year to year, and the methods and analyses used to determine abundance, if any, valuable input into the model may be missing. At the California Channel Islands, specifically at Santa Barbara Island and Anacapa Island(s), inter-annual cyclicity has been observed in Island Deer Mouse populations, see: Drost, C. A., and G. M. Fellers. 1991. Density cycles in an island population of deer mice, *Peromyscus maniculatus*. Oikos 60:351-364. This article poses a roughly four year low to high mouse abundance cycle that drives abundance of a wintering Burrowing Owl population at Santa Barbara Island. Pergams et. al used a sine wave in his work modeling Anacapa Deer Mice to account for cyclicity as such, see: Pergams, O. R. W., R. C. Lacy, and M. V. Ashley. 2000. Conservation and management of Anacapa Island deer mice. Conservation Biology 14:819-832. On Anacapa, Santa Barbara, and other Channel Islands, increased precipitation (excepting cold storms) and subsequent increased vegetative growth result in greater abundance of Island Deer Mice, and greater abundance of Burrowing Owls (see Drost, Orrock, Coonan, etc. various articles). This South Farallon Island report notes that it is not clear why Burrowing Owl abundance has increased in recent years. The amount and timing of precipitation may play a role. Including temperature, precipitation, and House Mouse abundance data may add to the robustness of this model.

With or without the above mentioned data, this report demonstrates the urgency for eliminating House Mice from the Southern Farallon Islands to conserve Ashy Storm-petrels. Variation in climate will only exacerbate this need.