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**Attachments:** [ASSP BUOW Model 7 24 13 final.pdf](#)  
[WEGU PVA Final 6 12 13.pdf](#)

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Hi all:

There was a lot of misinformation given during Susan Kegley's talk yesterday and while I am not going to argue them point by point, I wanted to make sure you have access to the reports we put together for USFWS (these are included as appendices in the DEIS).

**The first report examines the ecological relationship between House Mouse, Burrowing Owl and Ashy Storm-Petrel** and provides quantitative estimates of the anticipated benefit to Ashy Storm-Petrels from proposed house mouse eradication on the South Farallon Islands.

Owls arrive at the island in the fall when mice are abundant as prey. The mouse population then crashes in mid-winter and owls switch to preying upon storm-petrels which are then arriving to the island to breed. As a result, owl predation on storm-petrels is highest in late winter, when storm-petrels are at the colony and the mouse population is at its lowest. **Removing house mice as a food source is expected to result in fewer owls overwintering on the island and thereby reducing predation pressure on storm-petrels.**

In order to assess the benefit to storm-petrels, we used a population-dynamic model to estimate the change in population trends resulting from reductions in owl predation. Under current conditions (owl predation as in recent years) the storm-petrel population is expected to decrease by >25% over a 10 year period. However, a 50% reduction in Burrowing Owl abundance (and related predation) would result in a stable population; whereas a reduction greater than 70% would result in an increasing population trend.

These results indicate that reducing Burrowing Owl abundance, through elimination of their house mouse prey, will have a long term, substantial and significant effect in reducing overall Ashy Storm-Petrel mortality and promoting stable or increasing future population trends.

**The second report examines the potential population-level impacts to Western Gulls** which are the main species at risk of non-target mortality if the proposed mouse eradication moves forward.

Using PRBO's long term datasets, we conducted a population viability analysis (PVA) to model future trends for this population prior to any eradication effort. We first classified future environmental

conditions as: “optimistic”, “realistic” and “pessimistic” based on long-term average productivity and differing frequencies of breeding failure associated with environmental conditions. We determined trends under each scenario.

Under “optimistic” environmental conditions, the population would grow by 10.6% after 20 years; decline by 8.7% under “realistic” conditions; and decline by 27% under the “pessimistic” scenario.

We then assessed the potential impacts of the proposed eradication project by re-running the PVA with varying levels of project-related gull mortality. This was done in order to determine the maximum level of mortality which would result in population trends that are ecologically indistinguishable from trends in the absence of the eradication project ( $\geq 95\%$  overlap in expected outcomes after 20 years).

We concluded from these modeling efforts that **a mortality event of less than 1700 Western Gulls would be unlikely to alter projected population trends.** We acknowledge uncertainty associated with this modeling exercise and the high variability of the model parameters. We recommend against using the results as an absolute threshold but suggest rather, that the results be used to help inform an ecologically responsible eradication effort.

The **gull hazing report written by Island Conservation is included as Appendix E in the full DEIS** document online. In short, a team of up to 10 personnel deployed a range of hazing techniques including lasers, pyrotechnics, bioacoustics, etc. to haze gulls off the islands. The hazing methods were 90% effective for the majority of the trial which lasted for about 5 days. **The lower success mentioned by Susan Kegley for the Columbia river study was because the authors were trying to keep gulls away from salmon using simple hazing techniques.**

Please feel free to ask questions about the science at any time!

Happy Thanksgiving!

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