



Burrowing Owl diet on Southeast Farallon Island, California

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On the Farallon Islands, 48 km west of the coast of central California, Burrowing Owls (*Athene cunicularia*) are a native migrant and a predator of the nonnative house mouse (*Mus musculus*) and the native Ashy Storm-Petrel (*Oceanodroma homochroa*). The Farallon Islands are believed to support approximately half of the world's breeding population of Ashy Storm-Petrels.

Previous research found that the Burrowing Owl predation is negatively impacting the storm-petrel population, and speculated that the very high abundance of house mice in the fall, might encourage more owls to overwinter than would do so naturally. It was hypothesized that when the mouse population crashes in winter as part of a natural annual cycle, the owls switch to eating the storm-petrels, a species of conservation concern.

To test this hypothesis, we conducted daily Burrowing Owl surveys on Southeast Farallon

Island from September 2010 to May 2011 to quantify and document seasonal changes in Burrowing Owl diet. We did this by collecting and assessing pellets of regurgitated undigestible body parts of the owls' prey. We estimate that 23 owls over-wintered during our study, spending an average of 118 days on the island.

In the 679 pellets that we collected, insects were the most numerous prey item detected, but mice and storm-petrels were by far the most important components, comprising 98.5% of the total prey by mass.

Our results confirmed that mouse consumption was strongly correlated with mouse abundance: Burrowing Owl diet shifted noticeably from primarily mice from October to mid-January to storm-petrels from February to May, when the numbers of mice on the island declined sharply.

These findings suggest that eliminating the mouse population on the islands would

likely reduce the number of Burrowing Owls wintering there, ultimately reducing impacts to the storm-petrel population.

Main Points

Mice and storm-petrels make up most of the diet of Burrowing Owls on the Farallon Islands.

Owls switch from mice to storm-petrels as their main food as mouse numbers naturally decline during winter.

A mouse eradication program on the Farallon Islands could result in fewer owls on the islands and thus reduce impacts to the storm-petrel population.

Chandler, S.L., J.R. Tietz, R.W. Bradley, and L. Trulio. 2016. Burrowing owl diet at a migratory stopover site and wintering ground on Southeast Farallon Island, California. *Journal of Raptor Research* 50:391-403.