



PRIBILOF ISLANDS ALEUT COMMUNITY OF SAINT PAUL ISLAND
TRIBAL GOVERNMENT OF ST. PAUL ISLAND
ECOSYSTEM CONSERVATION OFFICE



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Effectiveness of current rat stations and defense strategies and recommendations for improvements

Introduction

To prevent the introduction of rats on the Pribilof Islands the communities of St. Paul and St. George, in cooperation with the US Fish and Wildlife Service Alaska National Maritime Wildlife Refuge, established a rat prevention program in 1995 following the construction of commercial harbor facilities on the islands. Bait stations have been placed around the harbor areas and in other areas where rats might get ashore from an infested vessel. These defensive stations are designed to kill the first arriving rats before they can breed and become established. To date rat prevention appears to have been successful. Stations deployed on St. Paul Island have killed nine rats since the program began, and while there is no indication that rats have become established on the island, the risk may be increasing due to increasing vessel traffic and environmental changes. The existing program was developed using assumptions about pathways of invasion and efficiency of devices to capture invading rats. However, these assumptions have not been thoroughly tested on St. Paul or elsewhere. The goal of this project was to evaluate the effectiveness of current rat stations, defense strategies, and control techniques of the rat prevention program on St. Paul Island. After consultation with the National Wildlife Research Center (NWRC) in Hilo, Hawaii we decided to field test our stations instead of lab test as originally proposed.

Methods

Based on the recommendations by the NWRC we tested stations of each type, randomly placed stations around the harbor area; and monitor for 2 weeks to evaluate effectiveness.

We decided to field test our stations in Dutch Harbor during the 2015 Opilio crab season. In March 2015 two Ecosystem Conservation Office staff traveled to Unalaska/ Dutch Harbor to field test four types of bait stations used in the St. Paul rat prevention program:

1. Protecta Bait Station
2. New Zealand Style Wooden Tunnel
3. Plywood Box Station
4. Poly Drum Station

Based on recommendations from NWRC we modified the poly drum station prior to testing to maximize rat entry and to increase the attractiveness of bait scent. The NWRC was concerned that scent from bait would not travel far from an enclosed station, and bait scent is important for attracting rats to the traps. The original poly drum station had one set of 3-4 vertical holes drilled into the barrel and one single hole on the opposite side to minimize snow accumulation inside the station. The NWRC recommended that we drill vertical lines of holes on at least three sides of the barrel. However, due to weather conditions in St. Paul we decided to drill holes on two sides of the barrel stations as shown in the photo below.



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Poly Drum Station with two snap traps (Victor and T-Rex) and an indicator bait.



New Zealand Style Wooden Tunnel with Victor snap trap and indicator bait.

With the help of the Harbor Master for the Port of Dutch Harbor and the Environment Coordinator for the Qawalangin Tribe of Unalaska we identified two areas for testing our stations – the Unisea processing plant campus and the Unalaska Landfill. The Unisea Quality Assurance Manager gave us a tour of the campus and identified areas for testing. The Environmental Coordinator for the Qawalangin Tribe of Unalaska helped us prepare rat stations for deployment.

The ECO Co-Director and Lead Island Sentinel field tested 16 rat stations at the Unalaska Landfill from March 12-18, 2015 and 18 rat stations around Unisea campus from March 13-18, 2015. Protecta bait stations were deployed indoors only and with a single T-Rex snap trap; the New Zealand style wooden tunnels were also deployed indoors only and can be equipped with either a T-Rex or Victor snap trap; we retrofitted 30-gallon poly drums



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All rat stations except for one design, a plywood box station, were effective at capturing rats. Data collected during the field test was used to improve our rat stations and defense strategies. Information and recommendations gathered from Dutch Harbor's Port Director and Harbor Master, Unisea's Quality Assurance Manager, and Unalaska's Landfill Operator were incorporated into our defense strategies.

The data collected during the field test (Rat Station Maintenance Logs) are saved on the ECO server. The lessons learned from the field test were immediately used to improve our rat stations and defense strategies. The following improvements were made: Protecta bait stations were deployed indoors only and with a single T-Rex snap trap; the New Zealand style wooden tunnels were also deployed indoors only and can be equipped with either a T-Rex or Victor snap trap; we retrofitted 30-gallon poly drums with vertical lines of holes on two sides (180 degrees apart) and filled the drums with rocks and rope leading up to a half-moon shaped wooden shelf near the top - the shelf holds two snap traps (T-Rex and Victor). All snap traps are baited with a sponge soaked in fish oil. We opted not to use peanut butter because the peanut butter would get moldy.

Discussion

Since the rat prevention program began here on St. Paul Island in 1995 only nine Norway rats have been found to date, ALL DEAD! These rats were found between December 1995 through December 1996. Of the nine rats found here on St. Paul Island: four were found in snap traps; one was poisoned; one drowned the harbor; two were taken by fox; and one was found dead on a boat. A few other sightings of a rat have been reported by community members, these sightings were never confirmed.



Keep the Pribilof Islands Rat Free