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### Authors

Howald, Gregg R.  
Buckelew, Stacey  
Wegmann, Alex  
[et al.](#)

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# **From the Sea of Cortez to the Aleutian Islands, Alaska: General Principles Applied to Eradication Planning, Compliance, and Implementation**

**Gregg R. Howald**

Island Conservation, Vancouver, BC, Canada

**Stacey Buckelew**

Island Conservation, Alaska Maritime National Wildlife Refuge, Homer, Alaska

**Alex Wegmann and Kirsty Swinnerton**

Island Conservation, Santa Cruz, California

**Araceli Samaniego**

Ensenada, Baja California, Mexico

**ABSTRACT:** The removal of introduced rodents from islands can be a highly successful, and thus, important conservation tool for land managers. Non-native rodents have adverse impacts to island ecosystems. Rats alone have been implicated in approximately 40-60% of all bird and reptile extinctions globally. Introduced rodents have been removed from more than 330 islands worldwide using techniques adapted over a ~30-year time period – the use of a bait containing a rodenticide delivered by hand into bait stations or broadcast by hand or helicopter, or a combination of these techniques. Island Conservation has applied this basic approach to remove rodents from islands spanning from the deep tropics to north temperate/sub-Arctic latitudes. Across these regions, the same principle has been applied but the details customized to the local biological and sociopolitical environment. The fundamental considerations during rodent eradication planning have included: 1) delivery of a bait containing a rodenticide into every *potential* rat territory; 2) delivery at a time of year when the rodent population is food stressed and more likely to eat the bait; 3) minimizing or eliminating, wherever possible, risk to non-target species prone to disturbance and/or toxicant exposure; and 4) ensuring appropriate legal or regulatory compliance and acceptance by local communities. In most cases, the balance between the probability of eradication success and these considerations, particularly risk to non-target species and safe workplace seasonal time periods, are not compatible and may conflict. Thus, adjustments to the eradication plans are sometimes necessary, and are done with careful evaluation of counter-risks to eradication efficacy, non-target species, logistics, or workplace safety. We will use our projects as case studies to demonstrate the approach we take to balance the risks and mitigation, with decisions made in conjunction with our project partners. Comprehensive and transparent planning, with the involvement of experts in the eradication field, land managers, local biologists, regulators, and local community are imperative to overall project success.

**KEY WORDS:** bait application, ecosystem restoration, eradication, invasive species, nontarget risk, risk management, rodent control, rodenticides, rodents, secondary poisoning, toxicants

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