



Open Ocean Draft Restoration Plan 3

Restoration Techniques

The Trustees' Programmatic Restoration Plan identified a suite of Restoration Approaches and techniques that could be implemented to restore for injuries to birds. The Draft Restoration Plan 3 and Environmental Assessment (RP/EA) would implement a subset of those restoration techniques to target seabird conservation needs, as described below.



RODENT REMOVAL

Rodents introduced to island ecosystems prey on seabird eggs and chicks, negatively impacting local populations, and in severe cases, leading to nesting colony failure. The rapid reproduction cycles of rodents allow even just a few individuals to quickly populate large areas. Therefore, full eradications are needed to prevent rodent populations from repopulating sensitive island ecosystems.

Some projects proposed in the RP/EA would eradicate local rat populations using U.S. Environmental Protection Agency-approved rodenticide. Bait pellets containing rodenticide would be broadcast aerially or manually or placed in secure bait boxes. As a poison, rodenticide can negatively impact non-target species that consume the bait. Mitigation measures would be employed to reduce bait availability for non-target species, such as captive holding, veterinary services, and avoiding broadcast when non-targets are present. The long-term benefits to seabirds and the islands' ecosystems would outweigh the short-term impacts of using rodenticide.



PREDATOR MANAGEMENT

A variety of predators consume seabirds at all life stages (adults, chicks, eggs). Seabird nesting colonies can be subject to high predation pressure when located near urban centers or on remote islands with introduced predators. Unmanaged predation pressure in nesting locations can cause seabird colonies to decline or even fail.

Some projects proposed in this RP/EA would employ lethal (hunting or trapping) and non-lethal (hazing or deterrents) forms of predator management. Invasive predators such as feral cats, pigs, or coyotes would be lethally eradicated using humane methods. Native predators such as foxes, mink, or other birds would primarily be managed using non-lethal methods. Lethal removal would only occur if an individual animal does not respond to non-lethal methods. This adaptive management would help avoid population-level impacts to native predators.

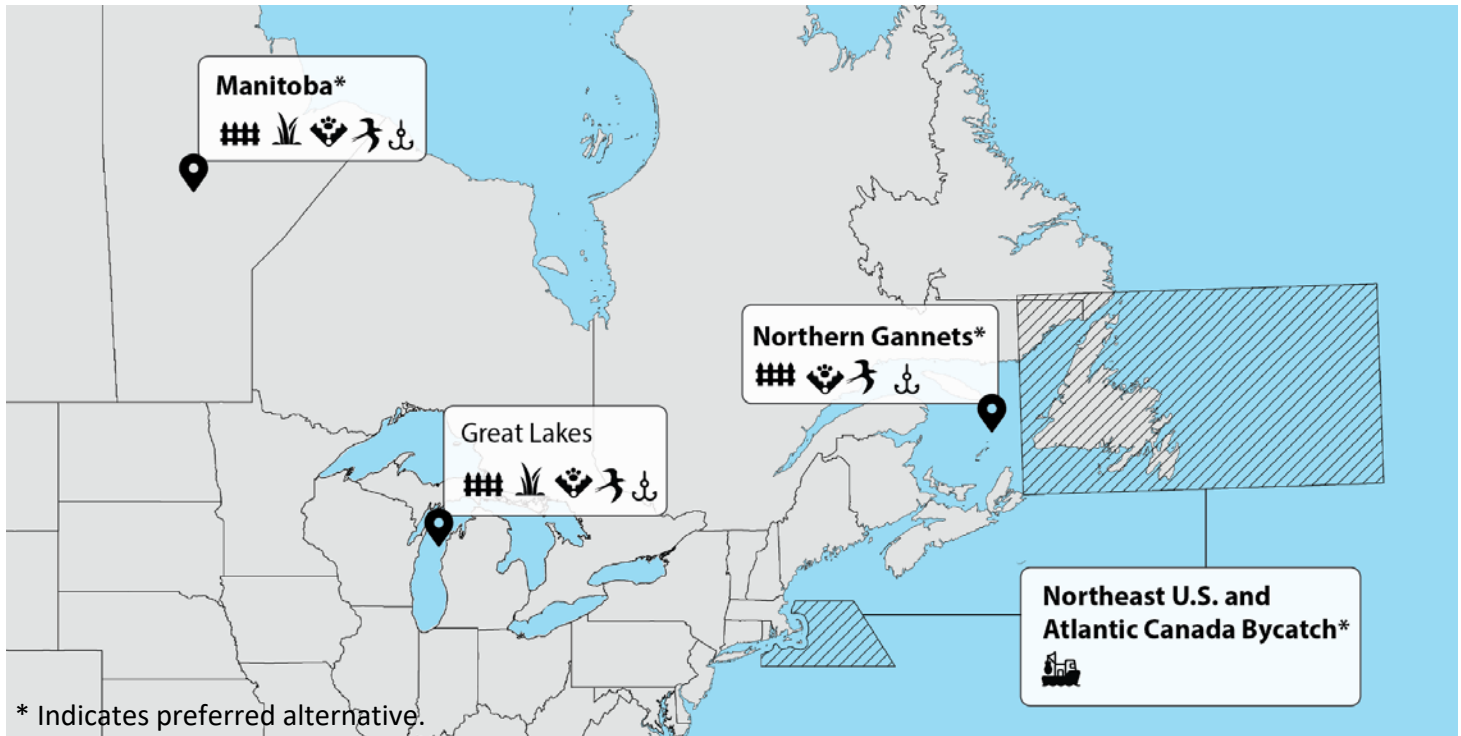


INVASIVE GOAT REMOVAL

Feral goats introduced to Battowia and the Pillories Islands in St. Vincent and the Grenadines have degraded island vegetation, resulting in increased erosion, decreased seabird nesting habitat quality, and increased disturbance to nesting seabirds. A project proposed in the RP/EA would eradicate invasive goats from Battowia and the Pillories. Live-captured goats would be offered to local communities to raise as livestock while lethally removed goats would be offered as meat.



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BIOSECURITY

Invasive species are often transported to islands via human pathways such as on boats or gear. Projects proposed in the RP/EA would design and implement and/or enhance existing biosecurity measures to prevent the introduction or spread of harmful species. These measures may include vessel inspections, education and outreach, installing surveillance cameras near landing areas, deployment of chew tags in high-use areas to detect rats, and deployment of traps and rodent bait stations if evidence of rats is found.



VEGETATION MANAGEMENT

When introduced to nesting areas, invasive plants can out-compete native vegetation, decreasing nesting habitat quality and negatively impacting seabird nesting success. Projects proposed in this RP/EA would plant native vegetation and/or remove invasive vegetation using mechanical or chemical methods to restore optimal native plant communities and coverage for seabird nesting.

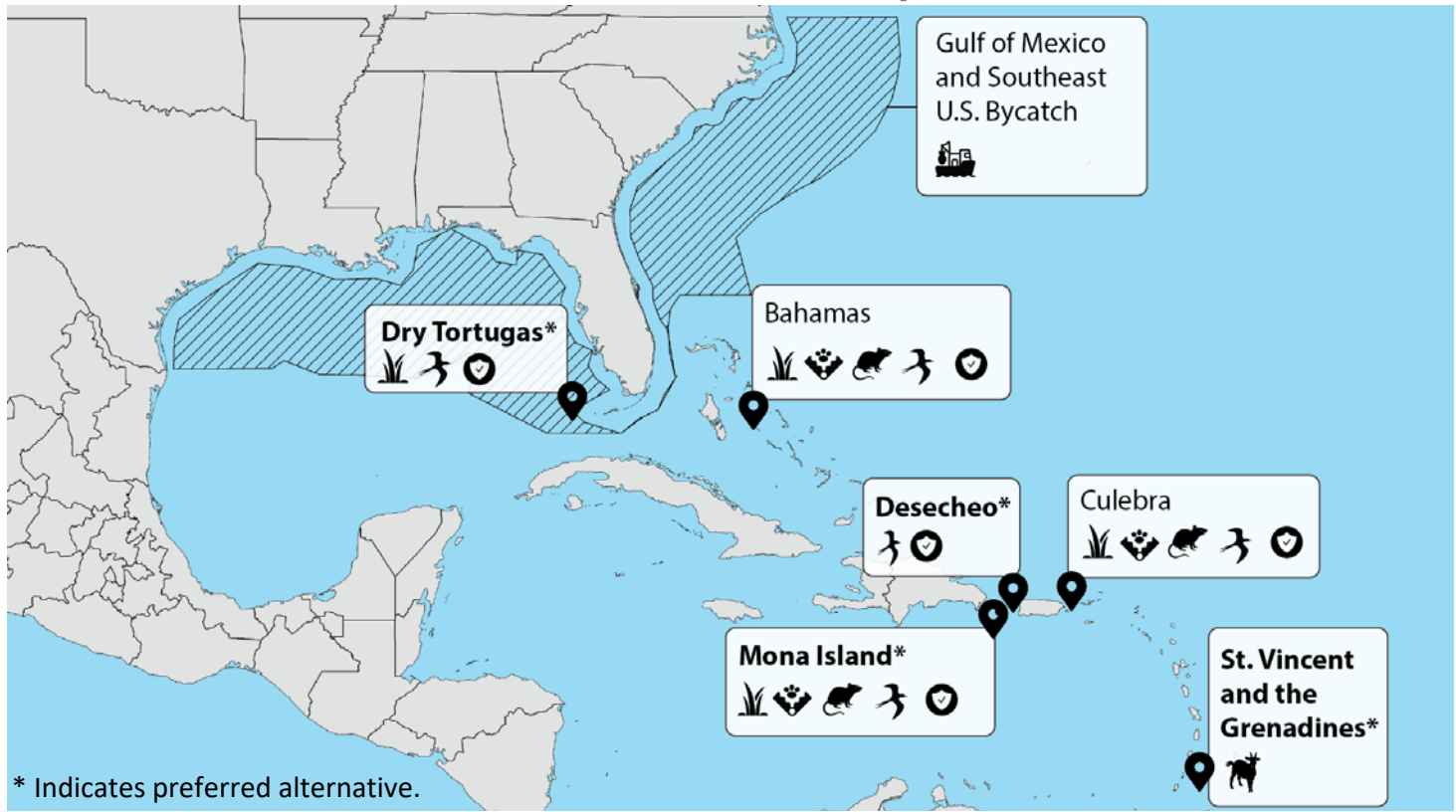


SOCIAL ATTRACTION

Seabirds nest in colonies, using sights and sounds of other nesting birds to find suitable nesting sites. Seabirds can fail to re-establish nesting colonies following predator eradications due to perceived predation pressure or because they return to previous nesting sites. Projects proposed in this RP/EA would attract seabirds to suitable nesting areas by mimicking seabird individuals and their sounds using species-specific decoys (life-size adults, eggs, and chicks), mirrors, and acoustic playback. These methods have been shown to re-establish extirpated seabird colonies and increase colony occupancy, nesting density, and distribution.



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LAND-BASED REMOVAL OF MARINE DEBRIS

Marine debris such as fishing lines and nets, ropes, and other plastic materials onshore can cause entanglement with seabirds and their chicks. Northern gannets especially are known to incorporate washed-up marine debris into their nest structures, risking entanglement, ingestion, and mortality to chicks and adult birds. A project proposed in the RP/EA would remove marine debris that has washed ashore and/or debris in nest structures.



HUMAN DISTURBANCE MANAGEMENT

Seabird nesting colonies located near urban populations or in high tourism areas can be disturbed by humans within these environments, which may result in birds abandoning their nests. Projects proposed in the RP/EA would manage and seek to reduce human disturbance by installing fencing around nesting colonies, posting signage near nesting areas, providing funding to allow for additional management staff, and educating the public on safe wildlife viewing practices.



BYCATCH REDUCTION

Restoration options to benefit seabirds, which spend most of their lives in the marine environment and nest at a small number of remote locations for short durations, are limited. Reducing incidental mortality experienced at sea, such as commercial fisheries bycatch, can help restore these injured species. Projects proposed in this RP/EA would seek to reduce northern gannet and great shearwater bycatch by improving monitoring and understanding of bycatch, establishing partnerships with commercial fisheries, and identifying and implementing bycatch reduction strategies.