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SCIENCE BRIEF

PREDATION MANAGEMENT

The management of abundant predators* is a routine and important method used by state, tribal, and federal fish and wildlife agencies in the United States.^{1,2,3,4} Often, this activity is conducted through regulated hunting and trapping seasons of a variety of species (e.g. black bears, mountain lions, coyotes, wolves, raccoons) across the country. These harvest seasons help maintain social and ecological balance, and often mark the recovery and range expansion of predatory species that were historically persecuted by eradication programs. At times, targeted, strategic use of predation management is needed to maintain ecological balance, support biodiversity, and address human-wildlife conflicts. While there may be controversy around harvesting these species through regulated seasons, additional scrutiny is often applied to targeted, intensive predation management. Some components of this controversy may be due to differing wildlife values, but much of it is through misunderstandings around the practice and its purpose. This conservation brief provides a thorough overview of the latest scientific findings on predation management, highlighting areas where these strategies have proven to be effective.

What is predation management?

Outside of regulated hunting and trapping seasons, predation management can mean many things. It can be a targeted removal of a single/small number of problem individuals, a temporary reduction of a predator population during a specific time or location, or in some instances, a complete removal of predator specie(s) from an area such as an island. Lethal removal of a coyote pack that has targeted livestock as prey, or the capture and relocation of a high-value species like a grizzly bear habituated to human food sources, are examples where the removal of a few individuals can effectively mitigate property damage, reduce human-wildlife conflicts, and address human health and safety concerns. Temporarily reducing predator densities at critical calving grounds for declining caribou herds or removing nest predators from

*The term predator is a trophic classification that describes the position of an animal in a food web that kills and eats other animals, an act described as predation. While predators are an important component of a balanced ecosystem, they must often be managed by fish and wildlife agencies to achieve desired objectives for all species.



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coastal nesting areas used by colonial shorebirds, such as the ESA-listed Least Terns, can temporarily alleviate predation pressure on these vulnerable populations. This allows opportunity for increased survival and recruitment into the population.^{5,6} Permanently removing non-native predators such as rats, mice, and feral cats from island ecosystems has continually demonstrated great success, often saving native species and entire ecosystems from extinction.⁷

In all these cases, successful predation management is carefully structured, with clearly defined timing, scope, scale, intensity, and objectives. Many effective programs integrate predation management with complementary strategies, such as non-lethal predator control, reduction of human-sourced attractants, and habitat enhancement. These integrated efforts are monitored through periodic evaluations within an adaptive management framework, ensuring the use of the best available approaches to meet management goals. When implemented in this manner, predation management consistently demonstrates its value in wildlife conservation and management.

Potential for controversy

At times, valued wildlife species may be struggling due to a combination of factors across a broad geographic range that are outside the immediate control of wildlife agencies, such as habitat loss, long term extreme drought, disease, and unknown and complex factors. Predation, as one of the few comprehensible sources of mortality that an agency can enact some control over immediately, may be the factor that partners focus on and encourage agencies to reduce. With the expectation that inaction is not a valid alternative, wildlife agencies may decide to enact measures to attempt to reduce predation, even if the likelihood of successful recovery of prey populations is uncertain.⁵ While the long-term outcome and positive effects on prey populations of temporarily reducing predator numbers may not always be known, these measures have some social value in that they demonstrate agency action to benefit species of concern. However, in a world that increasingly views wildlife in terms other than utilitarian, these actions will likely have heightened controversy in the future.

Striving for ecological balance

Overall, the concept of managing predation levels is a varied and long-established action conducted by wildlife agencies. The regulated harvest of predators is an activity that has provided a variety of resources to



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participants and their surrounding community, all during the recovery or expansion of these species across North America. Intensive, agency promoted predation management has repeatedly demonstrated success in addressing a variety of conservation and management-oriented goals when it is conducted in a structured manner appropriate to the ecology of the target system. Often predation is the most observable and seemingly controllable mortality source in the perception of the public, and addressing this source of mortality in prey populations is often expected even when the likelihood of success is not fully understood. Ultimately, wildlife agencies will continue to engage in the conservation and management of predators through regulated hunting and trapping seasons and in situations where a reduction in predation through more intensive activities may serve the good of prey populations, reduce human-wildlife conflicts, address wildlife disease outbreaks, and help create ecological balance.

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