Seeking Solutions to Species’ Declines

Interspersed among the sprawling urban development of southern California are remnants of a once-widespread habitat type, coastal sage scrub. This semi-arid habitat is home to nearly 100 species that are endangered, threatened, or of conservation concern, including the secretive and declining southern California rufous-crowned sparrow (Aimophila ruficeps canescens).

When housing developments, roads, and shopping centers are built in or near coastal sage scrub, they create “islands” of habitat dispersed in an urban sea. For many birds, such habitat fragmentation creates serious problems. Small patches of suitable habitat have less food and more predators, such as raccoons and house cats, which infiltrate from adjacent developed areas. Consequently, bird-nesting success is often reduced, and bird populations in fragments may disappear entirely over time.

To find out why rufous-crowned sparrows are much less common in small, fragmented patches of habitat than in large, intact areas, Scott Morrison of The Nature Conservancy and Douglas Bolger of Dartmouth College investigated a likely culprit: reduced nesting success in fragmented habitat. But surprisingly, nesting success did not differ between large expanses of coastal sage scrub and habitat fragments adjacent to urban areas.

Morrison and Bolger next teamed up with Scott Sillett of the Smithsonian National Zoological Park’s Migratory Bird Center to examine whether survival of adult sparrows differed between intact and fragmented habitat. They hypothesized that adult sparrows living in the interior of large habitat patches would have a better chance of survival from year to year, compared with sparrows living along the developed edges of habitat reserves.

Despite marking hundreds of birds and monitoring for multiple years, the scientists were limited in their ability to conclude with statistical certainty that fragmentation affects survival. Moreover, they discovered that the ability of researchers to detect this cryptic species depends strongly on annual rainfall: in dry years the birds tend to be much less detectable.

These findings illustrate the difficulties that scientists encounter in searching to understand the dynamics of wild populations in a changing world. Teasing apart the effects of development on sensitive species like the rufous-crowned sparrow will help conservationists prevent further declines of biodiversity.

Making Fisheries Sustainable

Researchers at the David Suzuki Foundation have recently released a report that outlines changes necessary for sustainable fishery and ecosystem management on the Pacific coast of Canada. Seas of Change: Ten Recommendations for Sustainable Fisheries on the B.C. Coast was reviewed by experts from academia, industry and government, and is available online at <http://www.davidsuzuki.org>. The report critically evaluates ecological evidence to provide the top ten changes needed to ensure the long-term viability of fisheries and ecosystems on the British Columbia coast. Among other things, the report outlines the need for precautionary management, comprehensive ecosystem-based management and full participation of communities surrounding fisheries in management decisions.

In proposing necessary changes, researchers further explored best practices from around the globe, and critically evaluated current legislation to assess whether legislation, implementation practices or both need to change to ensure sustainable management of Canada’s oceans.
Several key findings emerged from this research, including:

- **Government commitment to responsible oceans management and its will to enforce existing legislation is currently in decline;**

- **Well-functioning populations of marine species on Canada’s Pacific coast are being incrementally lost. Management must become more precautionary and function within an ecosystem context that takes habitat and other species, among other things, into account; and,**

- **Fisheries benefits are moving away from coastal communities and towards centralized corporate entities. This can cause powerful incentives for poor management practices.**

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**Current Literature**


Aldhous, P. 2004. The toads are coming!


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