Reintroduced Channel Islands eagles thrive on a diet of seabirds and fish

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Breeding male Bald Eagle is shown landing at the West End on Santa Catalina Island, California. Credit: P. Sharpe

Reintroducing a species into an area where it has vanished can be a great tool for conservation, but for reintroduction to be successful it's crucial

to understand how the habitat has changed in the interim and whether the reintroduced species will be able to thrive in its former home.

Extirpated in the 1960s as a result of human activity, Bald Eagles (*Haleiaeetus leucocephalus*) have been reintroduced to California's Channel Islands over the last 35 years. A study published this week in *The Condor: Ornithological Applications* examined the diets of these reestablished eagles in 2010 and 2011 to see how they compared to the diets of historical population. Like historical eagle populations, the reintroduced eagles in the Northern Channel Islands rely heavily on seabirds, according to authors Seth Newsome of the University of New Mexico, Paul Collins of the Santa Barbara Museum of Natural History, and Peter Sharpe of the Institute for Wildlife Studies. They also found that eagles on nearby Santa Catalina Island eat mostly fish, likely due to differences in human activity and a lack of seabird colonies on the island.

Newsome and his colleagues used two independent approaches to see what the eagles were eating—they collected the remains of prey from eagle nests, and they analyzed carbon and nitrogen isotopes in the eagles' feathers. The isotope findings were then compared to those from potential prey to determine what animals the eagles were eating. Both methods found the same results. "Generally speaking, the northern islands are much more pristine, and a larger fraction of their coastlines includes areas where fishing is strongly regulated or banned. Santa Catalina, on the other hand, has a larger human footprint, especially in the form of recreational fishing," explains Newsome. "We believe that the differences in diversity of fish consumed by eagles in these two areas is actually a product of recreational fishing, and that eagles on Santa Catalina have learned to follow recreational fishing boats and scavenge discards thrown overboard."

The Northern Channel Islands eagles' reliance on seabirds shows that

successful seabird conservation efforts in the region have had benefits across the ecosystem. "As a community ecologist, I feel that the re-establishment of species at all trophic levels, including top predators like Bald Eagles, is the ultimate goal for animal conservation," says Newsome. "Preserving diversity is wonderful, but you need to preserve diversity at all levels in the food chain. At present, such intact fully-functioning food webs are relatively rare in the United States, but to see that happen in a place like the Channel Islands that is adjacent to an area with one of the highest human population densities in the U.S. (southern California) is exciting."

The number of eagles currently nesting on the islands is still below historic levels, so this fledgling population likely has room to expand. Exploiting both historical food sources and new ones made available by human activity, Channel Islands eagles are a success story for ecosystem recovery.

More information: Seth D. Newsome,Paul W. Collins,Peter Sharpe (2015) Foraging ecology of a reintroduced population of breeding Bald Eagles on the Channel Islands, California, USA, inferred from prey remains and stable isotope analysis. *The Condor*: August 2015, Vol. 117, No. 3, pp. 396-413. DOI: 10.1650/CONDOR-14-213.1

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