

Migration tracking of Swainson's Thrushes reveals that vulnerabilities differ by region

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One important step toward identifying and prioritizing management actions to conserve wildlife populations is determining how vulnerable they are to environmental changes. For migratory species, which are affected by conditions in more than one location, assessing vulnerability (amount of risk) also must consider where they travel throughout their annual life cycle. Recent advances in tracking technology now allow us to identify these migratory connections and explore the links between population declines and habitat change in both breeding and non-breeding regions.

The Swainson's Thrush – a migratory bird much beloved for its ethereal song – varies considerably in abundance and trends across its breeding range in California. On the central coast, they are common and the population relatively stable, but in the northern Sierra Nevada and southern Cascade mountains, they are rare and have declined. Point Blue collaborated with the Tahoe Institute for Natural Science to deploy tracking tags on thrushes in the San Francisco Bay Area (out of the Palomar Field Station in the Point Reyes

area and at the TomKat Field Station near Pescadero) and the Cascade-Sierra (Lassen and Tahoe regions).

The populations studied each migrated different distances and predominantly to these different regions: coastal birds to western Mexico, Lassen birds to Central America, and Tahoe birds to northwestern South America. In addition, the two Cascade-Sierra populations have experienced greater amounts of recent landscape-level forest loss than coastal birds in both their breeding and wintering regions. The longer migration distance and greater recent forest loss suggest greater current vulnerability of the rarer Cascade-Sierra birds to environmental change.

As with many migratory species, enhancing populations of Cascade-Sierra Swainson's Thrushes will require actions across more than one region. Our results demonstrate that quantifying migration distances and destinations among neighboring breeding populations can identify dramatically different vulnerabilities that need to be considered in conservation planning, which must also be integrated internationally.

Main Points

Swainson's Thrushes breeding in California in the San Francisco Bay, Lassen, and Tahoe regions migrate to different wintering regions in Latin America

Cascade-Sierra (Lassen and Tahoe) thrushes, which are far rarer than those on the coast and of conservation concern, are more vulnerable due to longer migration distances and greater recent forest loss

Understanding the different migratory destinations and distances of migratory-bird populations is critical to conservation planning

Humple, DL, RL Cormier, RD Burnett, TW Richardson, NE Seavy, KE Dybala, T Gardali (2020). Migration tracking reveals geographic variation in the vulnerability of a Nearctic-Neotropical migrant bird. *Scientific Reports* <https://rdcu.be/b3fs8>