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## Geocator tags reveal strong migratory connectivity and within-winter movements for coastal California Swainson's Thrushes

To successfully conserve migratory birds we should consider their entire annual cycle (breeding, migration, and winter). Although the breeding and wintering ranges of most North American songbirds are well known, until recently it has not been possible to track migratory songbird populations or individuals throughout the year. Recent technological developments have allowed us to track larger songbirds with light-level geocator tags (geolocators) that, when recaptured, reveal where individual birds over-wintered or summered.

Migratory connectivity is the degree to which individuals that breed in a given area migrate to the same wintering area. If birds from a breeding population all go to the same general area to winter, changes in habitat conditions to either area will have much stronger impacts to the populations than if the birds dispersed more broadly.

Swainson's Thrushes breed throughout much of Canada and the western and northern United States and winter in Mexico, Central, and South America. We attached geolocators to 35 Swainson's Thrushes breeding in western Marin County in central coastal California. The following two springs we recaptured 12 individuals.

Eleven of the tagged birds wintered in western Mexico around the states of Jalisco, Nayarit or Colima, but two of those birds moved east mid-winter, to either the Sierra Madre Oriental or the Sierra Madre del Sur. The twelfth bird went directly to one of the latter two regions.

We combined our results with results from another geocator study of Swainson's Thrushes that breed in British Columbia to assess how consistent migratory connectivity is in this species. We found the strength of migratory connectivity for Swainson's Thrushes in the two studies was much stronger than those previously reported for other species. Given this strong migratory connectivity, Swainson's Thrushes may be more vulnerable to changes in habitat or climate than some other species that disperse more broadly.

### Main Points

- 11 of 12 Swainson's Thrushes breeding in central California migrated to western Mexico to winter; the 12<sup>th</sup> bird went to either the Sierra Madre Oriental or Sierra Madre del Sur region.
- 2 birds moved mid-winter from western Mexico to one of the mountainous areas noted above.
- Swainson's Thrushes exhibited strong migratory connectivity, compared to other species in two other reported studies.
- Conservation strategies for Swainson's Thrushes should consider the full annual cycle to be effective.

Cormier, R. L., D. L. Humple, T. Gardali, and N. E. Seavy. 2013. Light-level geolocators reveal strong migratory connectivity and within-winter movements for a coastal California Swainson's Thrush (*Catharus ustulatus*) population. *Auk* 130: 283-290.  
[http://www.prbo.org/refs/files/12248\\_Cormier2013.pdf](http://www.prbo.org/refs/files/12248_Cormier2013.pdf)  
PRBO publication # 1927.