Bats, most diverse and cosmopolitan mammals of the San Juan Islands, WA, are residents and active year-round.

Russel Barsh, Kwiaht, Lopez Island, WA

The San Juan Islands have been separated from mainland Washington State and British Columbia by several miles of salt water since they emerged from beneath the last continental glaciation approximately 9,000 years ago. Isolation by water is a barrier to colonization by animals that neither swim nor fly.

In fact, out of 47 native mammals recorded in western Washington, only 23 have ever been reported in the islands, of which two (wolves, elk) have been locally extinct for more than a century. Rodents are the largest mammalian group on the mainland, followed closely by bats. In the islands, bats comprise nearly half of the mammal species, with nine or possibly 10 species to rodents' three.¹

In fact, out of 47 native mammals recorded in western Washington, only 23 have ever been reported in the islands, of which two (wolves, elk) have been locally extinct for more than a century. Rodents are the largest mammalian group on the mainland, followed closely by bats. In the islands, bats comprise nearly half of the mammal species, with nine or possibly 10 species to rodents' three.¹

We have polled landowners, conducted visual surveys of bat roosts, and carried out extensive acoustical surveys of woodlands, wetlands and meadows in the San Juan Islands since 2010 with a view to determining (1) whether bats are distributed unevenly among islands and habitats; (2) whether bats migrate, hibernate, or remain active in the islands during the winter months; and (3) how much island bats rely on colonizing human structures such as homes and barns for maternity roosts.

Incidental to our investigation of these questions, we have sought to learn more about the health of island bats from visual observations and from injured and dead bats submitted by homeowners to licensed wildlife rehabilitators. At the time of this writing no island bat has tested positive for rabies, which is present in mainland bats submitted by homeowners to licensed wildlife rehabilitators. At the time of this writing no island bat has tested positive for rabies, which is present in mainland bats submitted by homeowners to licensed wildlife rehabilitators. At the time of this writing no island bat has tested positive for rabies, which is present in mainland bats submitted by homeowners to licensed wildlife rehabilitators.

Acknowledgments

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Results

A total of 10,063 passes were recorded in 2014. Nine species were represented in these records (Figure 1) including five Myotis species: California Myotis (MYCA), Yuma Myotis (MYYU), Little Brown Myotis (MYLU), Long-Eared Myotis (MYEV) and Long-Legged Myotis (MYVO). Four larger bats were also heard: Hoary Bat (LACI), Silver-Haired Bat (LANO), Big Brown Bat (EPFU), and Townsend's Big-Eared Bat (COTO). This is consistent with the results of a weeklong 2013 survey of Lopez Island by Rowan, Williams, Barsh, Murphy and Sauter (unpub.).

The same species were heard on all three islands but species were not evenly distributed among islands (Figure 2). Yuma Myotis (MYYU) were disproportionately most abundant on Lopez, Little Browns (MYLU) on Orcas, and the larger bats on San Juan Island. These differences are not explained by differences between the islands in habitat availability. Like Rowan et al., we found no strong association of island bat species with particular types of habitats with the exception of California Myotis, which were heard most often in meadows and woodlands, not wetlands. California Myotis were roughly equally represented on all three islands studied.

A total of 2,563 passes were recorded at Hummel Lake from September 2014 to March 2015 when weather permitted (20 nights), and 1,784 passes were recorded at Entrance Mountain from January to March 2015 (72 nights).

At Hummel Lake, where we recorded 300-500 passes per night in summer, bat activity fell sharply in the fall (Figure 3); no recordings were made in December because of severe windy, wet weather. Activity increased sharply in February. At Entrance Mountain, where recordings were made nightly, mid-winter bat activity was greater than at Hummel and increased less sharply between January to March (Figure 4).

Our data suggest that while bats may nearly disappear from wetlands and open water in winter they may relocate to wooded areas that are more sheltered and where there is a plentiful supply of winter moths (Xyleneni)–a pattern we have observed for insectivorous birds such as Winter Wrens, Kinglets, and Pine Siskins.

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