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FIRST RECORD OF A FAMILY GROUP OF THE ANCIENT MURRELET IN CALIFORNIA

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ABSTRACT: A family of two adults and one half-grown chick of the Ancient Murrelet (*Synthliboramphus antiquus*) on the ocean at Southeast Farallon Island, California, 1 and 10 June 2019, were far south of any of the species' known nest sites. Though Ancient Murrelets drift quickly away from their colonies once the young leave the nest at 2–3 days of age, Southeast Farallon is too far (1700 km) from Haida Gwaii for dispersal from even the southernmost known colony to be plausible. Dispersal of 1200 km from Carroll Island, Washington, a site of past and possibly current nesting, is also unlikely, suggesting the Ancient Murrelets likely nested at some yet unknown site along the coast of Oregon or northern California.

In June 2019, we observed a family group of Ancient Murrelets (*Synthliboramphus antiquus*), including two adults in alternate plumage and one downy chick, off Southeast Farallon Island, Farallon Islands National Wildlife Refuge, California (37.7° N, 122° W; Figure 1). To our knowledge, this represents the southernmost recorded occurrence of an Ancient Murrelet chick and the first in California.

The Ancient Murrelet breeds in colonies primarily on offshore islands along the Pacific Northwest coast of North America from Haida Gwaii, British Columbia, north to the Aleutian Islands of Alaska, and along the northeast coast of Asia (Gaston and Shoji 2020). Nearly half of the global population breeds on islands of the Haida Gwaii archipelago (Gaston 1992). South of Haida Gwaii, there has been only one confirmed breeding record, from Carroll Island, Washington, in 1924 (Hoffmann 1924, Sealy and Carter 2007). Along the eastern Pacific coast, Ancient Murrelets winter south regularly to southern California (Gaston and Shoji 2020), rarely to the peninsula of Baja California (Erickson et al. 1995, Hamilton and Howell 2001).

Ancient Murrelets nest primarily in burrows and attend their colonies nocturnally. Both parents incubate the clutch of one or two eggs. Chicks are precocial and depart to sea with their parents within a few days of hatching, dispersing rapidly (Duncan and Gaston 1990, Gaston et al. 2017, Gaston and Shoji 2020). Data from tracked murrelets showed that pre-fledging dispersal from Haida Gwaii colonies is driven primarily by local marine currents; birds from eastern Haida Gwaii colonies moved east and south whereas western Haida Gwaii birds moved north and west. By week five, family groups moved on average about 450 to 550 km from eastern and western colonies, respectively, and chicks appeared to be fledged by the time they were six weeks old (Gaston et al. 2017).

Sealy et al. (2013) evaluated 25–30 records of family groups observed at sea between southern Vancouver Island and central Oregon from 1988 to 2011. They concluded those groups likely were transported by strong offshore shelf-break cur-

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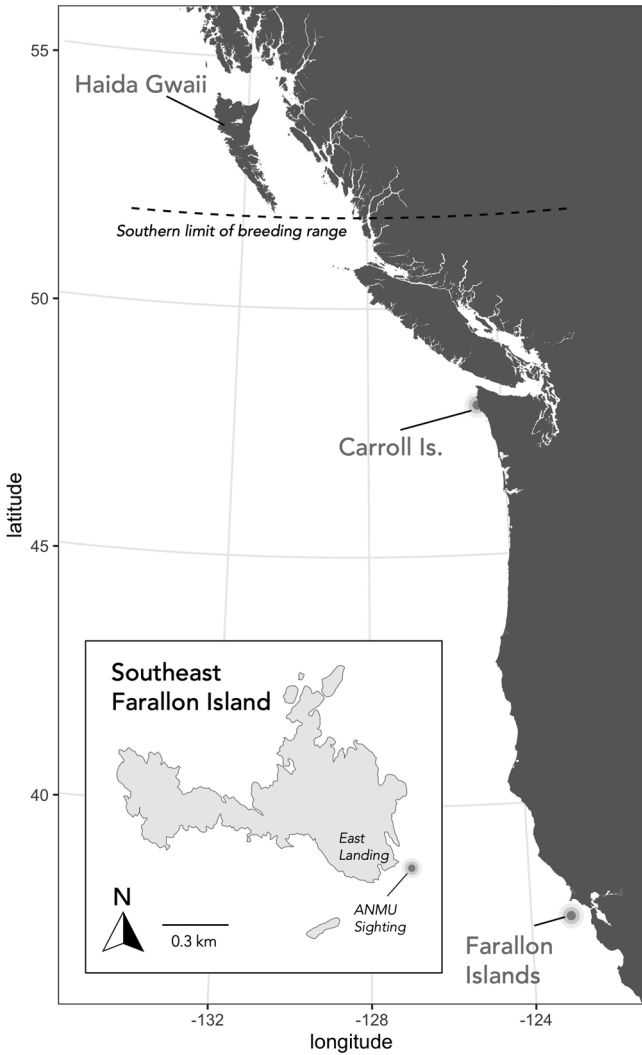


FIGURE 1. Location of Southeast Farallon Island, California, in relation to the closest known sites of Ancient Murrelet (ANMU) breeding at Haida Gwaii (current) and Carroll Island (at least historic, possibly current).

rents from colonies in Haida Gwaii but could not refute the possibility that they derived from breeding sites south of Haida Gwaii.

Pierson first observed the family group of murrelets at the Farallon Islands in the early afternoon of 1 June 2019 from a boat moored about 0.5 km off East Landing, Southeast Farallon Island (Figure 1). After the observation was relayed, McChesney, Pierson, and others relocated the group from shore three hours later about 100–200

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m off East Landing. Observation conditions were good, with little swell or wind and light overcast skies. During the ~30 minutes of observation, the adults frequently dove while the chick waited on the surface. From several photographs taken, we estimated the chick was about half-grown (Figure 2). On the basis of family groups with chicks of size similar to this one, observed off Haida Gwaii colonies about three weeks after peak departure, our murrelet chick was likely about three weeks old (A. J. Gaston pers. comm.). Several successful dives resulted in an adult feeding the chick. Prey items could not be easily seen because of their small size, but we suspect they were krill, mysid shrimp, or some other zooplankton, the Ancient Murrelet's principal food (Gaston and Shoji 2020). Krill (*Euphausia pacifica* and *Thysanoessa spinifera*) and mysid shrimp (*Holmesimysis sculpia* and *Telacanthomysis columbiae*) are the most common zooplankton prey found in the diets of other seabirds breeding at the Farallon Islands, especially the planktivorous Cassin's Auklet (*Ptychoramphus aleuticus*; Ainley and Boekelheide 1990, Manugian et al. 2015).

The week following the murrelet observation on 1 June saw strong northwesterly winds and rough seas, typical of spring at the Farallones—conditions that were not conducive to relocating the small murrelets. By 10 June, the winds and seas had subsided, and Johns and research assistants relocated presumably the same family group during a boat survey of the islands' nesting seabirds. The murrelets were in the same general area as the initial sighting off East Landing. A photograph shows the chick to be roughly the same size as on 1 June (Figure 3).

These observations raise the question of this family group's origin. Family groups of the Ancient Murrelet disperse on average about 150 to 300 km within three weeks and 450 to 550 km within five weeks of departure from colonies in eastern and western Haida Gwaii, respectively (Gaston et al. 2017). In their review of family groups farther south, Sealy et al. (2013) speculated that murrelets were transported at least 450 to 970 km south of the nearest known colonies in southern Haida Gwaii. Southeast Farallon Island is 1700 km south-southeast of Haida Gwaii, or about 1780 km along the shelf break. If the maximum transport speed is 3 km/hr (Sealy et al. 2013), it would take nearly 25 days traveling non-stop for a murrelet to reach Southeast Farallon from the southern tip of Haida Gwaii. Given that the maximum transport speed would necessarily have been maintained for the duration of the trip, allowing little time for foraging and rest, we believe it nearly impossible that this group originated from Haida Gwaii.

Another factor is the timing of chicks' departure from the colony. At East Limestone Island, Haida Gwaii, over 17 years, the earliest departures ranged from 7 to 12 May, median departure dates from 19 to 27 May (Gaston and Shoji 2020). Thus these murrelets would have had at most 26 days to reach Southeast Farallon Island, assuming they departed on the earliest recorded departure date and arrived when first seen.

A more plausible origin for the Farallon murrelet group is somewhere south of Haida Gwaii. Although Sealy et al. (2013) could not rule out that family groups south of Haida Gwaii originated from colonies south of there, they concluded the lack of evidence for breeding farther south (excepting the 1924 record at Carroll Island, Washington) supported the rapid-transport hypothesis. However, Sealy et al. (2013) recognized that because Ancient Murrelets breed earlier than most other seabirds in the Pacific Northwest, researchers may have missed them when visiting colonies later in the season. In fact, since 2007, surveys off the northwest Washington coast have detected adult murrelets with very small chicks near shore, and since 2022 acoustic recording devices have picked up adults calling to chicks on two islands, including Carroll Island, observations that suggest local breeding (S. F. Pearson, Washington Department of Fish & Wildlife and S. Thomas, U.S. Fish & Wildlife Service, pers. comm.). If Ancient Murrelets are breeding on the northwest coast of Washington, transport from there to the Farallon Islands is more plausible. Nonetheless, such a

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FIGURE 2. Ancient Murrelet family, including two adults and one chick, off Southeast Farallon Island, California on 1 June 2019. The bottom photo shows the chick about to be fed by one of the adults.

Photos by Michael Pierson



FIGURE 3. Presumably the same Ancient Murrelet family as in Figure 2 off Southeast Farallon Island, 10 June 2019.

Photo by Michael Johns

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movement as far as Southeast Farallon Island would still be notable, as the 1200-km distance from Carroll Island is farther than Sealy et al. (2013) projected and much farther than the dispersal distances reported by Gaston et al. (2017).

A local origin for this family of Ancient Murrelets also is questionable for several reasons. First, the long distance (~1700 km) from the nearest known colonies at Haida Gwaii, or 1200 km from northwestern Washington, would make this an extreme extralimital nesting record. Second, the species is known for dispersing away from its colonies rapidly, transported by local currents (Duncan and Gaston 1990, Gaston et al. 2017, Gaston and Shoji 2020). Therefore, a family group with a half-grown chick should not remain at its breeding colony. Third, given that the predominant current along the central California coast flows strongly to the south-east (Hickey 1979), murrelets originating from the Farallones should be carried rapidly in that direction. Finally, the Farallon Islands' seabirds have been studied intensively since the early 1970s, with annual monitoring beginning in March for earlier-nesting species like Cassin's Auklets (Ainley and Boekelheide 1990). No other evidence of Ancient Murrelets nesting at the Farallones exists, but we acknowledge that one or a few isolated nests could easily go undetected, especially in the extensive inaccessible habitat on the islands, which host large colonies of several species of burrow- and crevice-nesting seabirds (Ainley and Boekelheide 1990). After initial dispersal to sea, families of Ancient Murrelets with chicks the size of the Farallon chick sometimes reappear off Haida Gwaii colonies, although the origins of those groups are unknown (A. J. Gaston pers. comm.). Given that these birds apparently remained in the area for at least 10 days, perhaps good foraging conditions either kept the group close to the Farallones after departure from the nest or the group returned after initial dispersal. Also, there are at least two other recent records of Ancient Murrelets off the Farallon Islands in May or June when birds not breeding locally are rare, including two alternate-plumage adults photographed off the west end of the islands on 27 May 2023 and 11 May 2024 (Pierson pers. obs.).

In conclusion, on the basis of our review of the literature and a search of <https://eBird.org>, the Ancient Murrelets sighted off the Farallon Islands in June 2019 represent the southernmost record for a family group of this species. These birds were about 770 km south of the southernmost group reported by Sealy et al. (2013) and about 350 km south of a more recent record of two adults with two chicks photographed at the mouth of Humboldt Bay in northern California, 16 June 2024 (second recorded family group for California; G. Schrott, <https://eBird.org/checklist/S181946856>). While it seems unlikely the chick at the Farallones had hatched locally, the family's origin is unknown. Given the long distances to the nearest known and historical breeding areas in Haida Gwaii and Washington, respectively, we believe this group more likely bred along the southern Oregon or northern California coast, then was carried south by the strong California Current.

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