

TREE-NESTING PEREGRINE FALCONS IN BRITISH COLUMBIA

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Records of Peregrine Falcons (*Falco peregrinus*) nesting in trees, either in nests built by other large birds or in hollow tree trunks, have been well documented in parts of the Old World (Thomasson 1947, Dement'ev and Gladkov 1951, Fischer 1968, Mebs 1969). In North America, a few such records are available from Alaska and the central United States, but the details are obscure (Hickey and Anderson 1969). This paper provides information on six tree aeries located on offshore islands, found during a survey of seabird nesting colonies along the northern coast of British Columbia in June and early July 1976. Because of the peregrine's sensitivity to human disturbance and because of recent public concern for the species, we do not give exact aerie locations but have filed them (see Campbell and Stirling 1971) with the British Columbia Provincial Museum (BCPM).

We discovered the first tree nest of peregrines on 20 June. While searching through dense undergrowth along the shores of a small wooded island for nesting alcids, we encountered an agitated adult female peregrine calling from the top of a dead Sitka spruce (*Picea sitchensis*). The shore sloped gently towards the sea. Few cliff ledges were available for nesting falcons, but two abandoned Bald Eagle (*Haliaeetus leucocephalus*) nests, about 25 m apart and 34 m from shore, were present near the top of the island. In one nest, about 18 m above ground, a large, white, downy, young falcon sat near its edge. We could not reach the aerie (BCPM Photo No. 454) so exact nest contents were not determined although we did not observe other nestling activity. Prey remains below the nest included Rhinoceros Auklet (*Cerorhinca monocerata*), Cassin's Auklet (*Ptychoramphus aleuticus*), and Pigeon Guillemot (*Cepphus columba*), none of which nested on the island. The nearest seabird colony (storm petrels and auklets) was about 100 km to the SE.

The second aerie, also in a Bald Eagle nest, was found 24 June about 12 m from the ground in a mature spruce tree near the edge of open forest. Both adult falcons were present and called incessantly during our short visit. The nest could not be checked, but the remains of Fork-tailed Petrels (*Oceanodroma furcata*) and Rhinoceros Auklets scattered around the base of the nest tree and the tenacious behavior of the adults indicated that young probably were present.

We located another nest, also in an old Bald Eagle nest, on 26 June. Again, the noisy defensive behavior of both adults attracted us to the aerie. The nest, at least 60 m from the shore and about 20 m from the ground, was situated in a large spruce tree (BCPM Photo No. 456) in a fairly dense forest. The female called continually from a nearby snag, but the male disappeared shortly after we arrived. Only the head of a single large young could be seen from below the nest. The remains of several Rhinoceros Auklets, which



FIGURE 1. Bald Eagle nest used by Peregrine Falcons for nesting.

nest on the island, were scattered around the base of the nest tree.

The fourth aerie was located on 27 June in a dense spruce forest. Peregrines again were using a Bald Eagle nest (BCPM Photo No. 455; Fig. 1) about 20 m from the ground and 25 m from the forest edge. Four young in various stages of development were photographed (BCPM Photo No. 455; Fig. 2). Prey remains in and below the nest included Fork-tailed Petrel, Cassin's Auklet, Rhinoceros Auklet, and Marbled Murrelet (*Brachyramphus marmoratus*). We found evidence that all species except the last bred on the island. Several seriously injured storm petrels were found below the nest, and many dead auklets and murrelets were picked up along the upper beach and on small rocky offshore islets, the injuries and deaths apparently resulting from peregrine attacks. This probably indicates, as Beebe (1974: 133) suggested, that "killed, disoriented or injured quarry which falls into cover is usually ignored, exactly as if it had escaped."

Nesting at the remaining two sites was never confirmed, but we strongly suspect the aeries were in tree holes. On 27 June we encountered an excited, noisy, pair of peregrines on a small, heavily wooded island which lacked Bald Eagle nests. Several trees contained large natural cavities, however, one of which had at its base a few remains of Cassin's Auklets and Rhinoceros Auklets, both of which nest on the island. The second site was more convincing. On another forested island, we watched an adult female peregrine



FIGURE 2. Bald Eagle nest of Figure 1, showing brood of four Peregrine Falcons in various stages of development on 27 June 1976.

attacking a Bald Eagle near a large stick nest only 10 m from the ground. However, the nest contained a large, young eagle and was the only such nest on the island. Soon the adult male peregrine joined its mate and became especially agitated and noisy near an old spruce tree which had a large natural crack high up its trunk. A few pale feathers surrounded the hole entrance, and several carcasses of recently eaten Rhinoceros Auklets were found in the vicinity, indicating probable use by peregrines.

Clearly, a small, tree-nesting population of Peregrine Falcons exists on islands off the northern coast of British Columbia, but we do not know whether this is a recent phenomenon. Campbell visited this area briefly in the early summer of 1970, and although adult peregrines were seen, no evidence of nesting was found. He may have overlooked tree nests, however, because adult peregrines call only when intruders are near their nest site. In order to adequately check for tree-nesting peregrines, coastal census work should be conducted on foot, rather than from a boat, because most nest trees and aeries were not visible from the water.

Only two isolated occurrences of Peregrine Falcons using the tree nests of other large raptors have been recorded in North America. Peck (1924) claimed to have collected a peregrine egg from a Bald Eagle nest "many years ago." Jones (1946) reported finding nestling falcons in nests constructed by "other birds" in eastern Virginia while Spofford (1969) later determined these were Osprey (*Pandion haliaetus*) nests. We do not know whether such nests are actually usurped from eagles and Ospreys by peregrines or are merely abandoned sites.

The scarcity and near absence of cliffs, freedom from direct harassment, and abundance of food probably explain the existence of a tree-nesting population of Peregrine Falcons in British Columbia. All aeries except one were on large islands where prey species—nesting seabirds—are abundant. The fact that all nest sites were found within a linear distance of about 25 km may indicate that the population is genetically related. It will be interesting to see if this population spreads with time.

Beebe (1960, 1974) considered the Ancient Murrelet (*Synthliboramphus antiquus*), Cassin's Auklet, Leach's Petrel (*Oceanodroma leucorhoa*), and the Fork-tailed Petrel to be the principal food of peregrines on the Queen Charlotte Islands. Certainly, Rhinoceros Auklets appear to be the most available food for the population of Peregrine Falcons on the northern coast of British Columbia.

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GREAT BLUE HERONS INTERRUPT NEST-GUARDING TO DRINK

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Great Blue Heron (*Ardea herodias*) parents alternate in performing incubation and brooding duties and ordinarily, if undisturbed, attend their nests continuously from the onset of incubation until the chicks are 21 to 28 days old (Pratt 1970). In the spring of 1976, however, my co-workers and I found that during

unusually hot weather, some herons left eggs and chicks less than three weeks old unattended for short periods in order to drink.

The Audubon Canyon Ranch heronry, located about 5.8 km N of Stinson Beach, Marin Co., California, has been described previously (Pratt 1970). The nests are in the tops of Coast Redwoods (*Sequoia sempervirens*) and can be seen easily from a hillside above nest level. Each nest was plotted and numbered on a panorama of the heronry and written records were kept of nest progress. Bolinas Lagoon, a shallow estuary at the mouth of the canyon where the colony is located, is the herons' major feeding ground.

At the time of our discovery, we were tracking