

Egg Predation at a Golden Eagle, *Aquila chrysaetos*, Nest

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We observed an egg being taken from a Golden Eagle nest near Atlin, British Columbia, by a Common Raven. This is apparently the first record of its kind.

Key Words: Golden Eagle, *Aquila chrysaetos*, egg predation, nest predation, Common Raven, *Corvus corax*, Say's Phoebe, *Sayornis sayi*.

Our study area was on the east-facing slope of Steamboat Mountain (59°46'N, 133°29'W), some 25 km north of Atlin, British Columbia, where we have been investigating the reproductive biology of Dusky Flycatchers (*Empidonax oberholseri*) since 1998. On the south end of the study area there is a rocky cliff about 400 m long and 80 m high that holds Golden Eagle (*Aquila chrysaetos*) nests on three separate ledges. One of the nests was active during six of the nine summers when we were present. In every nesting year, except one, one or two fledglings were produced. The failed attempt occurred when there was egg predation by Common Ravens (*Corvus corax*). Interestingly, egg predation on Golden Eagles has apparently never been reported (Kochert et al. 2002).

On 30 May 2000, our first day on the study area that year, a Golden Eagle was sitting on the same nest used in 1998 and 1999, and it was brought food at least once that day by a second Golden Eagle. At 08:50 on 5 June, while standing about 100 m north of the eagle nest with 10 × 40 binoculars in hand, we noticed that the nest was untended and that a pair of Common Ravens was approaching from the south. The ravens flew along the cliff face until one of them turned abruptly and landed on the nest. Three seconds later it flew to rejoin the other raven, did a loop in the air, and flew back onto the nest. Five seconds later it left the nest holding a large, white, unbroken egg in its mouth, the size and color conforming to eggs of Golden Eagles. Seeing this, the companion raven flew to the nest, but flew off almost immediately without carrying anything. The two ravens then flew back to the south, over the mountain's ridge, and out of view. Seven minutes later two ravens, presumably the same pair, returned along the same route. One landed at once on the eagle nest and swept its bill back and forth through the nest bottom several times before flying down to examine a crevice below the nest. Meanwhile, the other raven landed at a crevice about 15 m north of the eagle nest, where it reached in and pulled out the entire nest of a Say's

Phoebe (*Sayornis sayi*) with an adult phoebe sitting within. The phoebe flew away, its nest was dropped to the rocks below, and the ravens resumed their flight along the cliff face, eventually disappearing to the north. There was no evidence of eggs or nestlings in or near the phoebe nest when we examined it later that day, although the sitting bird itself could have been the raven's target (see Boarman and Heinrich 1999). At 09:05 a Golden Eagle appeared and circled several times above the nest site, but did not land. We were on Steamboat Mountain nearly every day until August, but no resumption of eagle nesting behavior was observed.

Golden Eagle eggs are usually protected by the incubating bird, but sometimes it will leave them unattended to hunt if the mate has not relieved it or has not brought it enough food (Collopy 1984).

Apparently, on Steamboat Mountain, a pair of foraging ravens happened by during one of these times and succeeded in robbing the nest. Common Ravens often patrol in pairs and are well-known egg predators; at times eggs can be an important part of their diet, for example, when they are preying on gull colonies (Ewins 1991, Boarman and Heinrich 1999). Due to their dexterity and large gapes, ravens can handle and carry away eggs similar in size to those of the Golden Eagle without breakage, as observed by Alvo and Blancher (2001) in a study of Common Loon (*Gavia immer*) eggs. Thus, ravens are able to seize very quickly the untended clutches of even relatively large birds, thereby avoiding potentially dangerous anti-predator encounters.

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