

NORTHERN PYGMY-OWL PREDATION ON AN ADULT CALIFORNIA QUAIL

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The Northern Pygmy-Owl (*Glaucidium gnoma*) opportunistically hunts and feeds on songbirds, small mammals, reptiles, and insects (Merrill 1888, Holman 1926, Brock 1958, Bull et al. 1987). Diet studies indicate that although pygmy-owls feed primarily on species smaller than themselves, they also take species with body masses similar to or slightly larger than themselves (70–100 g; Giese and Forsman 2003). Occasionally they take even larger prey (i.e. \geq twice body mass, such as the Northern Flicker (*Colaptes auratus*; Holt and Leroux 1996).

Few direct observations of predation of relatively large species have been reported in the literature: Northern Pygmy-Owls have been observed preying on species of the family Odontophoridae, including the Northern Bobwhite (*Colinus virginianus*; Aiken and Warren 1914), Gambel's Quail (*Callipepla gambelii*; Kimball 1925), and an immature female California Quail (*Callipepla californica*; Balgooyen 1969). Other accounts have reported pygmy-owls preying on and attacking immature domestic chickens (*Gallus gallus domesticus*), specifically “chick[s]” (Walker 1924:181) and “half grown chickens” (Aiken and Warren 1914:513). Holt and Norton (1986) also



FIGURE 1. California Quail killed and partially eaten by a Northern Pygmy-Owl near Elk, Mendocino County, California, 13 April 2007.

Photo by Mitchel D. Bosma

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observed a female Northern Pygmy-Owl kill and feed on a Red Squirrel (*Tamiasciurus hudsonicus*), possibly representing the largest mammalian species confirmed as prey. However, diet studies typically identify prey from sparse remains found in pellets and around nests, and most historical observations of predation lack specific information such as mass, condition, or developmental stage from which the size of the prey can be gauged. An exception is Balgooyen (1969), who provided a photograph and mass measurements of both the California Quail and Northern Pygmy-Owl. We add to this body of observations by providing an account of a Northern Pygmy-Owl feeding on an adult male California Quail.

On 13 April 2007 at 16:48, after visiting a known Northern Spotted Owl (*Strix occidentalis caurina*) territory located 2.4 km east of Elk, Mendocino County, California (39.0759° N, 123.4213° W), Bosma observed a Northern Pygmy-Owl fly up from the side of a seasonal road and perch in a Red Alder (*Alnus rubra*), where it remained fixated on its previous location. Bosma lured the bird closer with a live mouse placed atop a Douglas-Fir (*Pseudotsuga menziesii*) sapling. After several minutes of intently watching the mouse, the owl captured the mouse and flew to the ground with it out of view. Bosma then investigated the spot where the owl had been initially seen and discovered a dead adult male California Quail. The carcass was still warm and flexible, indicating it was recently killed. The quail was mostly clean and undamaged, with nearly all its body and flight feathers intact, but its head had been stripped of flesh and eaten down to the skull. From the condition of the quail carcass and the manner in which it was killed, we inferred that the pygmy-owl killed the quail.

Although we did not weigh the quail carcass, the reported mean mass for the subspecies of the California Quail (*C. c. brunnescens*) in coastal northern California is 180+ g for both sexes (Summer 1935). The body mass of quail fluctuates seasonally with males attaining peak body mass in early spring (Genelly 1955, Lewin 1963). In comparison, the Northern Pygmy-Owl has an average mass of 64.5 g (range, both sexes: 45–75 g, standard deviation = 7.2, $n = 50$, Bird Banding Laboratory data 2013–2018).

Accounts of pygmy-owls killing large prey, though few, span over a century. Further studies on the Northern Pygmy-Owl's feeding behavior are necessary to understand if specific demographic and/or ecological factors drive the occasional selection of large prey or if this behavior is more associated with chance opportunity.

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Northern Pygmy-Owl

Painting by Bryce Robinson