LETTERS

INTERACTIONS BETWEEN A GROUP OF GOLDEN EAGLES AND A HERD OF NORTH AMERICAN ELK

KEY WORDS: Golden Eagle; Aquila chrysaetos; elk; Cervus canadensis; behavior; group hunting; play, Idaho.

Raptors are generally considered solitary predators (Schoener 1969), but occasionally they interact socially (Brown and Amadon 1968). Certain raptor species (e.g., Swallow-tailed Kites [Elanoides forficatus] and Swainson’s Hawks [Buteo swainsoni]) concentrate in aggregations in response to localized, abundant food sources (Ellis et al. 1993). Many raptor species engage in group hunting (Ellis et al. 1993), and social foraging is a routine strategy for some species (e.g., Harris’s Hawks [Parabuteo unicinctus]; Bednarz 1988, Ellis et al. 1993). Raptors generally engage in group hunting to pursue elusive or large prey (Ellis et al. 1993). Occasionally individuals of conspecific raptors engage in play as a group sometimes involving chases of prey species (Palmer 1988). In this letter, we report interactions between a large group of Golden Eagles and a herd of adult and juvenile Rocky Mountain elk (Cervus canadensis nelsoni) in late autumn.

On 19 November 2011, MPO observed a group of Golden Eagles stooping on a herd of elk on a ridgeline above Arrowrock Reservoir in the Middle Fork of the Boise River approximately 30 km ENE of Boise, Idaho, U.S.A. (43°36.94’N, 115°52.50’W). The area is typified by steep rocky slopes consisting mainly of big sagebrush (Artemisia tridentata), bitterbrush (Purshia tridentata), native grasses (Poa secunda, Pseudonegueria spicada, Aristida longiseta), and exotic grasses (Bromus tectorum, Taeniatherum caput-medusae; Kaltenecker 1995). Some north-facing slopes contain mixed-conifer stands. Elevation ranges from 1951 m at the top of nearby Mount Heinen to 1042 m at the reservoir 6.3 km to the SE. There are no known nesting territories in the general area (within 8 km of the location of the eagle–elk encounter) according to Idaho Department of Fish and Game records (C. Moulton pers. comm.) Therefore, the area usually contains resident floating and winter migrant Golden Eagles during late fall and early winter. Elk and deer carrion is an important food source for eagles on Boise River reservoirs, and groups of Golden Eagles and Bald Eagles occur at the carcasses (Kaltenecker 1995). The area had no snow cover on the day of the eagle–elk interactions, and the temperature ranged between -3° and 5°C at the Boise Municipal Airport. Observations were made from a road along the reservoir approximately 450 m below and 1200 m from the location of the eagle–elk interactions beginning at approximately 1230 H and lasting until 1330 H when MPO left. The interactions also were videotaped with a Canon FS 200 digital camcorder with a 41 × optical zoom (2000 × digital) for 11 min and 46 sec starting at 1319 H. Readers can view the video at http://www.youtube.com/watch?v=amg6RAxTi8.

When observations began, at least eight Golden Eagles were circling near and diving on a herd of approximately 80 to 100 elk that were resting and feeding on a ridge top. The herd contained cows, calves, and yearling (spike) bulls; we observed no adult bulls. The eagle group contained at least two eagles in immature plumage with much white in the tail suggesting these were quite young eagles (juvenile or <2yr-old immature; Bloom and Clark 2001). Although we could not accurately count each age class because the eagles were circling and mixing so much, it appeared that at least half of the group consisted of young birds. In initiating some bouts, one to three Golden Eagles flew low over the main elk herd, causing small groups of 5 to 10 elk to separate from the herd and run down the slope. Once elk were separated from the main herd, individual eagles dove on single or small groups of two to four animals. The elk responded by running rapidly down the slope from the stooping eagle. The eagles circled near the elk, sometimes in a fairly tight cluster, before one eagle would initiate a stoop. On several occasions, when one eagle dove on an elk, one or more eagles whirled and flew toward the diving eagle. In most cases, the eagle dropped toward the elk from the rear and executed a slow descent with a slow “parachute” stoop (Kochert et al. 2002, Watson 2010). As it passed over the back of the elk, the eagle arrested its downward flight, flapping its wings toward the back of the elk’s head, causing the elk to run rapidly down the steep (~45° to 60°) slopes. A few stoops included a low-level, shallow glide (Kochert et al. 2002, Watson 2010), in which the eagle descended rapidly over the elk’s back toward the back of its head. We observed no physical contact by stooping eagles with the fleeing elk. We recorded 10 eagle stoops on elk during the 11 min and 46 sec of video. Based on the relative sizes of the eagles (approximately 2.0 m wingspan) and elk (approximately 1.3 m high at the withers for an adult cow), we estimated that the eagles passed within 3 to 5 m of the elk during nine stoops. An immature eagle passed about 0.5 m from an elk’s head on one stoop. In this case, the eagle aggressively flew at the elk’s head twice in the same chase, and a second eagle also dove at the fleeing elk. The elk ran in response to all eagle...