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Golden Eagle

Aquila chrysaetos

Order: ACCIPITRIFORMES

Family: ACCIPITRIDAE

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Diet and Foraging

Feeding

Main Foods Taken

Small to medium-sized mammals: hares (*Lepus* spp.) and rabbits (*Sylvilagus* spp.); also ground squirrels (*Spermophilus* spp.), prairie dogs (*Cynomys* spp.), marmots (*Marmota* spp.).

Microhabitat For Foraging

See Habitat, above. Takes most prey on or near ground.

Food Capture And Consumption

Three main strategies to search for prey: soaring, still-hunting from a perch, and low contouring flight ([Edwards 1969a \(/Species-Account/bna/species/goleag/references#REF33293\)](/Species-Account/bna/species/goleag/references#REF33293), [Dunstan et al. 1978 \(/Species-Account/bna/species/goleag/references#REF38078\)](/Species-Account/bna/species/goleag/references#REF38078), [Dekker 1985 \(/Species-Account/bna/species/goleag/references#REF43261\)](/Species-Account/bna/species/goleag/references#REF43261), [Palmer 1988c \(/Species-Account/bna/species/goleag/references#REF38067\)](/Species-Account/bna/species/goleag/references#REF38067)). Strategy determined by weather

conditions, topography, and prey's escape response ([Dekker 1985 \(/Species-Account/bna/species/goleag/references#REF43261\)](#), [Watson 1997 \(/Species-Account/bna/species/goleag/references#REF10348\)](#)). Soars more often on sunny and windy days; hunts from perches on overcast, calm, or rainy days; uses contour flight in broken topography and high soar in open habitats. Uses contour hunting to surprise prey that might escape to burrows. Contour hunting is most common overall ([Watson 1997 \(/Species-Account/bna/species/goleag/references#REF10348\)](#)), but perch hunting was most common in sw. Idaho where habitat was open and perches (power lines, canyon rims, and rock outcrops) were abundant ([Dunstan et al. 1978 \(/Species-Account/bna/species/goleag/references#REF38078\)](#)).

Usually attacks prey from upwind ([Palmer 1988c \(/Species-Account/bna/species/goleag/references#REF38067\)](#)). Uses 7 techniques to attack prey ([Watson 1997 \(/Species-Account/bna/species/goleag/references#REF10348\)](#)): (1) "high soar with glide attack" to attack solitary or widely dispersed prey (hare, grouse [Phasianidae]) from a thermal (>50 m) with a long (≥ 1 km), low angle glide; (2) "high soar with a vertical stoop" to attack slow-flying or flocking prey (geese [*Branta* spp.], cranes [*Grus* spp.], sage grouse [*Centrocercus urophasianus*]; EHC) from a high (>50 m) soar; (3) "contour flight with a short glide attack" to surprise colonial prey (ground squirrels and prairie dogs) from low-level flight quartering over the ground; (4) "glide attack with tail chase" to flush, chase, and capture agile mammals and birds in flight from a low angle stoop; (5) "low flight with slow descent attack" to capture slow-moving prey (tortoise [Testudinidae], snakes [Serpentes]) from a low-level quartering flight and slow "parachute" stoop; (6) "low flight with sustained grip attack" to kill ungulates by landing on victim's back or neck, and riding it until the animal dies ([Deblinger and Alldredge 1996 \(/Species-Account/bna/species/goleag/references#REF10234\)](#)); and (7) "walk and grab attack" to capture quarry protected by an obstruction ([Dixon 1937 \(/Species-Account/bna/species/goleag/references#REF43263\)](#), M. Collopy pers. comm.).

Frequently feeds on carrion, especially during winter and even when live prey is available ([Kalmbach et al. 1964 \(/Species-Account/bna/species/goleag/references#REF33302\)](#), [Watson 1997 \(/Species-Account/bna/species/goleag/references#REF10348\)](#)); consumes

fresh carrion during nesting season ([Bogg 1977 \(/Species-Account/bna/species/goleag/references#REF10219\)](#)). Locates carrion from high-soaring flight; often cues in on activity of crows (*Corvus* spp.) and other scavengers ([Watson 1997 \(/Species-Account/bna/species/goleag/references#REF10348\)](#)).

Also hunts cooperatively with conspecifics; most cooperative hunting involves large prey (e.g., ungulates, red fox [*Vulpes fulva*], Wild Turkeys [*Meleagris gallopavo*] in winter; [Thomas et al. 1964 \(/Species-Account/bna/species/goleag/references#REF10336\)](#), [Hatch 1968 \(/Species-Account/bna/species/goleag/references#REF33298\)](#), [Deblinger and Alldredge 1996 \(/Species-Account/bna/species/goleag/references#REF10234\)](#)). Mated pairs also hunt jackrabbits cooperatively during breeding season; pairs pursue prey with one individual following the other at different elevations above the ground. Initial pursuer diverts prey's attention by stooping while the second makes the kill ([Willard 1916b \(/Species-Account/bna/species/goleag/references#REF10352\)](#), [Hunsicker 1972 \(/Species-Account/bna/species/goleag/references#REF10264\)](#), [Collopy 1983b \(/Species-Account/bna/species/goleag/references#REF33290\)](#)).

Tandem hunting less successful than solo hunting in sw. Idaho ([Collopy 1983b \(/Species-Account/bna/species/goleag/references#REF33290\)](#)). Overall prey-capture success 20% ($n = 115$ capture attempts); capture success 4.6% for tandem hunting ($n = 42$), 29% for solo hunting ($n = 73$). Males initiated significantly more prey-capture attempts when solo hunting; females used both foraging methods equally.

Less common feeding behaviors include klepto-parasitism, piracy, nest-robbing, cannibalism, and fishing. Takes prey from corvids ([Ladygin 1994 \(/Species-Account/bna/species/goleag/references#REF59010\)](#), [Marzluff et al. 1994b \(/Species-Account/bna/species/goleag/references#REF33306\)](#)), foxes ([Meinertzhagen 1959 \(/Species-Account/bna/species/goleag/references#REF43291\)](#)), Bald Eagles (T. and E. Craig unpubl.), Great Horned Owls (*Bubo virginianus*; [Henderson 1920 \(/Species-Account/bna/species/goleag/references#REF10259\)](#)), Northern Harriers (*Circus cyaneus*; MNK), Red-tailed Hawks (*Buteo jamaicensis*; [Dekker 1985 \(/Species-Account/bna/species/goleag/references#REF43261\)](#)), Prairie Falcons (*Falco mexicanus*; J.

McKinley pers. comm.), and other Golden Eagles ([Dekker 1985 \(/Species-Account/bna/species/goleag/references#REF43261\)](#)). Takes eggs and young from nests. Preys on Canada Goose (*Branta canadensis*) eggs ([Valutis and Marzluff 1997 \(/Species-Account/bna/species/goleag/references#REF33315\)](#)) and nestling Gyrfalcons (*Falco rusticolus*; [Dittrick and Moorehead 1983 \(/Species-Account/bna/species/goleag/references#REF10238\)](#)). Remains of Prairie Falcon, Ferruginous Hawk (*Buteo regalis*), Great Horned Owl, Barn Owl (*Tyto alba*), Common Raven (*Corvus corax*), Yellow-billed (*Pica nuttalli*) and Black-billed (*P. hudsonia*) magpie, and Rock Dove (*Columba livia*) nestlings in Golden Eagle nests suggest nest-robbing ([Carnie 1954 \(/Species-Account/bna/species/goleag/references#REF50454\)](#), [Houston 1985a \(/Species-Account/bna/species/goleag/references#REF10263\)](#), [Hunt et al. 1995b \(/Species-Account/bna/species/goleag/references#REF43278\)](#), USGS unpubl.). Cannibalism occurs rarely. Collopy ([Collopy 1983a \(/Species-Account/bna/species/goleag/references#REF43255\)](#)) reported apparent cannibalism of a nestling by its sibling in a nest in sw. Idaho, and partially eaten remains of a Golden Eagle nestling in a Montana nest suggest cannibalism by a sibling or parent ([Palmar 1954 \(/Species-Account/bna/species/goleag/references#REF43297\)](#)). Fishing rare, but ≥ 5 individuals frequently captured live trout from shallow streams and pools in Arizona during winter ([Brown 1992b \(/Species-Account/bna/species/goleag/references#REF10223\)](#)).

Hunts from 1 h before sunrise to 1 h after sunset during the breeding season in sw. Idaho ([Dunstan et al. 1978 \(/Species-Account/bna/species/goleag/references#REF38078\)](#)).

Hunting pattern bimodal in n.-central Utah: 08:30–12:00 and 14:45–18:30 ([Smith and Murphy 1973a \(/Species-Account/bna/species/goleag/references#REF9613\)](#)). In central Idaho in winter, hunting activity usually greatest from midmorning until late afternoon (T. and E. Craig unpubl.).

Diet

Major Food Items

Feeds mainly on mammals (80–90% of prey items), secondarily on birds, and less often on reptiles and fish during nesting season ([Olendorff 1976 \(/Species-Account/bna/species/goleag/references#REF10298\)](#)). Preys principally on leporids (hares and rabbits) and sciurids (ground squirrels, prairie dogs, marmots); the 2 groups combined constituted 49–94% of individual prey items reported in 24 studies throughout w. North America during nesting season ([Appendix 1 \(/Species-Account/bna/appendix/goleag/APP1002499\)](#)). Relative importance of taxa varies by region. Arctic ground squirrels (*Spermophilus parryii*), snowshoe hares, and arctic hares (*Lepus arcticus*) are principal prey in Alaska and n. Canada ([Poole and Bromley 1988a \(/Species-Account/bna/species/goleag/references#REF59100\)](#), [Appendix 1 \(/Species-Account/bna/appendix/goleag/APP1002499\)](#)). White-tailed (*Lepus townsendii*) and black-tailed jackrabbits, cottontails (*Sylvilagus* spp.), and white-tailed (*Cynomys leucurus*) and black-tailed (*C. ludovicianus*) prairie dogs are primary prey species in the n. Great Plains, with yellow-bellied marmots (*Marmota flaviventris*) and Richardson's (*Spermophilus richardsonii*) or Wyoming ground squirrels (*S. elegans*) important secondary prey ([McGahan 1966 \(/Species-Account/bna/species/goleag/references#REF56191\)](#), [Reynolds III 1969 \(/Species-Account/bna/species/goleag/references#REF10312\)](#), [Lockhart et al. 1977 \(/Species-Account/bna/species/goleag/references#REF10280\)](#), [MacLaren et al. 1988 \(/Species-Account/bna/species/goleag/references#REF33305\)](#)). Black-tailed jackrabbits and cottontails are main prey in Great Basin, with yellow-bellied marmots and Piute ground squirrels (*S. mollis*) or rock squirrels (*S. variegatus*) chief secondary prey ([Arnell 1971 \(/Species-Account/bna/species/goleag/references#REF43242\)](#), [Bloom and Hawks 1982 \(/Species-Account/bna/species/goleag/references#REF10216\)](#), USGS unpubl.). Yellow-bellied marmots are primary prey in e. Washington ([Marr and Knight 1983 \(/Species-Account/bna/species/goleag/references#REF10282\)](#)). California ground squirrels (*S. beecheyi*) and black-tailed jackrabbits constitute most remains in central California ([Carnie 1954 \(/Species-Account/bna/species/goleag/references#REF50454\)](#), [Hunt et al. 1995b \(/Species-Account/bna/species/goleag/references#REF43278\)](#)). In sw. U.S., black-tailed jackrabbits and cottontails are main prey, and rock squirrels and prairie dogs are chief secondary prey ([Mollhagen et al. 1972 \(/Species-](#)

[Account/bna/species/goleag/references#REF43293](#)), [Lockhart 1976 \(/Species-Account/bna/species/goleag/references#REF43287\)](#), [Eakle and Grubb 1986 \(/Species-Account/bna/species/goleag/references#REF10240\)](#)).

Gallinaceous birds (pheasants, grouse, and partridge) are main birds taken ([Olendorff 1976 \(/Species-Account/bna/species/goleag/references#REF10298\)](#)). Ptarmigan (*Lagopus* spp.) are important secondary prey in central Alaska ([McIntyre and Adams 1999 \(/Species-Account/bna/species/goleag/references#REF10288\)](#)), and waterfowl are secondary prey in arctic Canada ([Poole and Bromley 1988a \(/Species-Account/bna/species/goleag/references#REF59100\)](#)). Ring-necked Pheasants (*Phasianus colchicus*) and Chukars (*Alectoris chukar*) are secondary prey in the Great Basin ([Hickman 1968 \(/Species-Account/bna/species/goleag/references#REF56188\)](#), [Arnell 1971 \(/Species-Account/bna/species/goleag/references#REF43242\)](#), [Marr and Knight 1983 \(/Species-Account/bna/species/goleag/references#REF10282\)](#), USGS unpubl.).

Occasionally kills large prey, including seals (Phocoidea), ungulates (mountain goat [*Oreamnos americanus*], bighorn sheep [*Ovis canadensis*], Dall sheep [*O. dalli*], caribou [*Rangifer* spp.], deer [*Odocoileus* spp.], and pronghorn [*Antilocapra americana*]), coyotes (*Canis latrans*), badger (*Taxidea taxus*), bobcat (*Lynx rufus*), turkeys, geese, Trumpeter (*Olor buccinator*) and Tundra (*O. columbianus*) swans, Sandhill (*Grus canadensis*) and Whooping (*G. americana*) cranes, Ospreys (*Pandion haliaetus*), and Great Blue Herons (*Ardea herodias*; [Bent 1937b \(/Species-Account/bna/species/goleag/references#REF23961\)](#), [Brandborg 1955 \(/Species-Account/bna/species/goleag/references#REF10222\)](#), [LaFontaine and LaFontaine and Fowler 1976 \(/Species-Account/bna/species/goleag/references#REF43284\)](#), [Olendorff 1976 \(/Species-Account/bna/species/goleag/references#REF10298\)](#), [Ellis et al. 1999a \(/Species-Account/bna/species/goleag/references#REF33294\)](#), [Mason 2000 \(/Species-Account/bna/species/goleag/references#REF10284\)](#), R. Ritchie unpubl.). Mainly takes young ungulates, but also kills adults ([Deblinger and Alldredge 1996 \(/Species-Account/bna/species/goleag/references#REF10234\)](#)). Also preys on domestic animals, including sheep (*Ovis aries*), goats (*Capra hircus*), calves (*Bos taurus*), pigs (*Sus scrofa*), poultry (*Gallus gallus*), dogs (*Canis familiaris*), and cats (*Felis catus*; [Bent 1937b \(/Species-](#)

[Account/bna/species/goleag/references#REF23961](#), [Olendorff 1976 \(/Species-Account/bna/species/goleag/references#REF10298\)](#)). May kill livestock even when preferred prey is available ([Phillips et al. 1996c \(/Species-Account/bna/species/goleag/references#REF43300\)](#)). In studies where sheep and goat remains were found at nests, these species constituted 0.2 to 7% of remains and accounted for only 1.4% of 7,094 prey items identified in studies throughout the w. U.S. ([Reynolds III 1969 \(/Species-Account/bna/species/goleag/references#REF10312\)](#), [Mollhagen et al. 1972 \(/Species-Account/bna/species/goleag/references#REF43293\)](#), [Olendorff 1976 \(/Species-Account/bna/species/goleag/references#REF10298\)](#), [Bloom and Hawks 1982 \(/Species-Account/bna/species/goleag/references#REF10216\)](#)). Livestock remains include both carrion and eagle kills ([Olendorff 1976 \(/Species-Account/bna/species/goleag/references#REF10298\)](#)).

Diet data lacking for e. North America. Although snowshoe hare, cottontails, and marmots are common prey, e. North American nests have a high proportion of American Bitterns (*Botaurus lentiginosus*), Canada Geese, and Great Blue Herons ([Spofford 1971 \(/Species-Account/bna/species/goleag/references#REF43313\)](#), [Weik 1987 \(/Species-Account/bna/species/goleag/references#REF10350\)](#), [Todd 1989 \(/Species-Account/bna/species/goleag/references#REF43319\)](#), [Brodeur and Morneau 1999 \(/Species-Account/bna/species/goleag/references#REF43253\)](#)).

Winter diet does not appear to differ appreciably from nesting-season diets in temperate areas, but few data exist. Of 65 individuals identified in stomachs of 50 eagles killed Mar 1948 in Colorado, 52% were hares and rabbits ([Woodgerd 1952 \(/Species-Account/bna/species/goleag/references#REF10354\)](#)). Of items identified in 63 eagle stomachs collected between Nov and Mar from 15 states throughout the U.S., 59% were hares/rabbits and 27% were suspected ungulate and jackrabbit carrion ([Kalmbach et al. 1964 \(/Species-Account/bna/species/goleag/references#REF33302\)](#)). Sheep and goats constituted 11% of items, but proportion taken as carrion was unknown. Winter diet in central Utah consisted almost entirely of black-tailed jackrabbits ([Edwards 1969a \(/Species-Account/bna/species/goleag/references#REF33293\)](#)). Also preys on waterfowl during winter ([Kalmbach et al. 1964 \(/Species-](#)

[Account/bna/species/goleag/references#REF33302](#)), [McWilliams et al. 1994 \(/Species-Account/bna/species/goleag/references#REF60306\)](#)); waterfowl important in winter diets on Chesapeake Bay and eastern coastal areas (D. Buehler pers. comm.).

Quantitative Analysis

[Appendix 1 \(/Species-Account/bna/appendix/goleag/APP1002499\)](#) . Data available primarily for the nesting season. Usually based on analyses of pellets and prey remains collected at nests; some data derived from direct observation of prey deliveries. Intensity variable, ranging from systematic collections every 4 d during the nesting season for > 10 yr to 1 collection/nest for only 1 season. Results may not be reliable for quantitative estimates of food intake, particularly with longer intervals between collections ([McGahan 1967 \(/Species-Account/bna/species/goleag/references#REF10287\)](#)), but are reliable for interpreting relative importance of prey species. Earlier dietary estimates derived from analysis of stomach samples ([Kalmbach et al. 1964 \(/Species-Account/bna/species/goleag/references#REF33302\)](#)), but quality of data collected from stomach samples from individual raptors is minimal compared to other available methods ([Marti 1987 \(/Species-Account/bna/species/goleag/references#REF10283\)](#)).

Most extensive information about diet composition comes from Snake River Birds of Prey National Conservation Area in sw. Idaho where >2,200 individual prey items were identified from 1971 to 1981 ([Steenhof and Kochert 1988 \(/Species-Account/bna/species/goleag/references#REF10330\)](#)). Proportion of main prey in diet varied annually, and proportion of jackrabbits in diet correlated with jackrabbit density in the environment. Diet breadth was smaller than that of Red-tailed Hawks but larger than that of Prairie Falcons from the same area. Golden Eagles had smallest variation in sizes of prey taken; sizes of prey varied from 10 to 5,800 g (geometric mean 609 g, $n = 2,203$). Diets vary within nesting season, reflecting opportunistic hunting. In sw. Idaho, proportions of Ring-necked Pheasants in nests highest in Apr, coinciding with the peak of pheasant breeding activity; subsequently decreased when pheasant incubation began ([Kochert 1972 \(/Species-Account/bna/species/goleag/references#REF10273\)](#)).

Food Selection and Storage

Opportunistic predator; wide variety of prey species and sizes, but in North America focuses on leporids and sciurids 500–2,000 g ([Watson 1997 \(/Species-Account/bna/species/goleag/references#REF10348\)](#); see Diet, above). Generally eats large prey at kill site; fresh limbs of young ungulates in nests suggest eagles may disarticulate animals before bringing to nests ([Kalmbach et al. 1964 \(/Species-Account/bna/species/goleag/references#REF33302\)](#); MNK). Parents may bring more food to nests than young can eat. Sometimes excess food is carried away from the nest, but in most cases, it is left there (see Breeding: parental care, below). Caching of prey rare, but a pair in Scotland deposited prey on a cliff near the nest before feeding it to the young ([Macpherson 1910 \(/Species-Account/bna/species/goleag/references#REF10281\)](#)).

Nutrition and Energetics

Pairs delivered 885 g of prey biomass/d to nests in w. Texas ([Lockhart 1976 \(/Species-Account/bna/species/goleag/references#REF43287\)](#)) and 1,417 g/d during the 10-wk brood-rearing period in sw. Idaho ([Collopy 1984 \(/Species-Account/bna/species/goleag/references#REF10227\)](#)). Pairs in Montana brought an estimated 1,470 g of prey/d to a nest during a 39-d portion of the brood-rearing period ([McGahan 1967 \(/Species-Account/bna/species/goleag/references#REF10287\)](#)). See Breeding: parental care, below, for additional information on prey-delivery rates.

Between 23.9 and 33.2 kg of food needed to raise a chick from hatching to fledging (10 wk), based on estimates from feeding trials ([Collopy 1980 \(/Species-Account/bna/species/goleag/references#REF10226\)](#)). Prey biomass consumed by nestlings increased during brood-rearing with peak at 7–9 wk of age ([Collopy 1984 \(/Species-Account/bna/species/goleag/references#REF10227\)](#)). Amount of food consumed/d by 2 male and 2 female captive nestlings increased steadily from 11 to 15 d of age, peaked at 28–44 d, and declined slightly until experiments ended at 53–57 d ([Collopy 1986 \(/Species-Account/bna/species/goleag/references#REF33291\)](#)). Food consumption did not differ between male and female nestlings. During late brood-

rearing (47–57 d old), captive eaglets consumed 12–15% of their body mass/d; much greater than consumption rates of adults and juveniles (5.7–6.6%/d; [Fevold and Craighead 1958 \(/Species-Account/bna/species/goleag/references#REF46302\)](#)). Greater food consumption by nestlings reflects cost of producing body tissue and feathers. Captive nestlings were 74.4% efficient at assimilating food energy consumed; no difference between males and females. Assimilation efficiency is related to fat content of prey ([Collopy 1986 \(/Species-Account/bna/species/goleag/references#REF33291\)](#)). Ground squirrels contain 4–17 times more fat and provide 1.7 times more energy than rabbits (U.S. Dept. of Interior [U.S. Department of Interior 1979 \(/Species-Account/bna/species/goleag/references#REF10341\)](#), M. Collopy unpubl.).

Metabolism and Temperature Regulation

Overall mean gross and net energy efficiency (proportion of total ingested and metabolized energy, respectively, converted to feathers, fat, and other body parts) of 4 captive nestlings was 31% and 42%, respectively, and did not differ between sexes ([Collopy 1980 \(/Species-Account/bna/species/goleag/references#REF10226\)](#)). Growth efficiency (ratio of biomass produced to biomass consumed) of nestlings decreased linearly with age and did not differ between males and females ([Collopy 1986 \(/Species-Account/bna/species/goleag/references#REF33291\)](#)). Growth efficiency averaged 27% at 2 wk of age and steadily decreased to <5% at fledging. As chicks aged, more of their energy budget was allocated to maintenance. Trends in metabolized energy (ME) paralleled food consumption and peaked at about 2,500 kJ/d, with no difference between sexes. ME of wild males peaked 7–8 wk of age at about 2,000 kJ/d, and females peaked at about 3,100 kJ/d during week 8 ([Collopy 1986 \(/Species-Account/bna/species/goleag/references#REF33291\)](#)). Energy metabolism ranged from 4.33 to 4.01 W/kg for 2 captive Golden Eagles ([Gessaman et al. 1991 \(/Species-Account/bna/species/goleag/references#REF43268\)](#)). Body temperature of a telemetered nestling ranged from 37.9 to 39.1°C over 18 d ([Rudeen and Powers 1978 \(/Species-Account/bna/species/goleag/references#REF10316\)](#)).

Drinking, Pellet-Casting and Defecation

Drinks occasionally, but most or all liquid requirements, particularly for nestlings, are met by ingesting prey ([Brown and Amadon 1968 \(/Species-Account/bna/species/goleag/references#REF9577\)](#)). Adults and immatures in Nevada drank in mountain bogs and springs and ingested snow near or above timberline ([Charlet and Rust 1991 \(/Species-Account/bna/species/goleag/references#REF33289\)](#), [Johnson 1994f \(/Species-Account/bna/species/goleag/references#REF33301\)](#)). Drinking was a frequent daily activity of a captive adult female ([Kish 1970 \(/Species-Account/bna/species/goleag/references#REF10272\)](#)). Casts pellets, usually once early in the day (M. Collopy pers. comm.). To cast, eagle arches neck with face down and forward and gapes widely while rapidly shaking head laterally. Behavior repeated several times with brief pauses between head-shakes; soft squeaks or whistles often accompany casting. Often bobs head in a Neck Pump prior to casting, and conspicuous swallowing often follows casting attempt. Adults do not cast at nest; chicks cast 1–3 pellets/d from age 20 d to fledging, but some chicks did not cast every day ([Ellis 1979 \(/Species-Account/bna/species/goleag/references#REF10243\)](#)). Two captive male and 2 captive female chicks produced an average of 7.7 g/d (dry mass) and 6.9 g/d (dry mass) of pellets ([Collopy 1980 \(/Species-Account/bna/species/goleag/references#REF10226\)](#)). The same captive eaglets defecated an average of 57.0 g/d (dry mass) and 59.6 g/d (dry mass), respectively ([Collopy 1980 \(/Species-Account/bna/species/goleag/references#REF10226\)](#)). Number of defecations/d increases linearly to about 20 d in wild nestlings and then levels off to 10–16/d until fledging ($n = 4$; [Ellis 1979 \(/Species-Account/bna/species/goleag/references#REF10243\)](#)).

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