White-tailed Eagles eat birds - Richard Millington

https://www.nationalgeographic.com/animals/article/160516-eagles-conservation-animals-europeendangered :

White-tailed eagles are also targeting the Baltic's largest remaining colony of Caspian terns, says <u>Ola Jennersten</u>, a biologist at the nonprofit group WWF Sweden. The country lists the bird's Baltic population as near threatened.

Efforts to conserve the colony—on a tiny island some one hundred miles (160 kilometers) north of Stockholm—has been plagued by eagles that "pick the young ones one by one and eat them," he says.

Another eagle target is the <u>lesser white-fronted goose</u>, an endangered species that in Sweden is down to a single breeding population, in the Arjeplog Mountains. Other populations exist in Europe, mostly in Russia, though total numbers are very small—fewer than 620 birds, according to the IUCN.

The government-backed <u>Swedish Lesser White-Fronted Goose</u> <u>Project</u> monitors their colony and regularly reinforces it with captivebred birds.

In 2012, the year that white-tailed eagles appeared in the area, the goose population fell by half, from about 150 to 60 birds.

It isn't known how many eagles are preying on the geese, but at least one individual specializes in targeting them during their summer moult—a time when the geese are unable to fly.

"It was there all the time," says Liljebäck, who directs the project. "That's a nightmare for a project like this."

He notes that stress and disturbance caused by these attacks have a secondary impact, since the temporarily flightless geese are forced off the lakes that protect them from other predators, such as foxes.

..... Wikipedia :

White-tailed eagles are known to prey on about 170 species of bird, the most diverse group in their prey spectrum.^{[4][32][99]} While hunting birds, this massive, relatively slow-flying eagle requires an element of surprise, with often a tactful use of cover or bright sunlight upon the approach from a nearby perch.^{[4][94]} For example, grey herons (Ardea cinerea) have been caught after an eagle used a low flight over turbulent water to ambush them.^[32] However, even with a stealthy attack, the waterfowl favored in the avian diet tend to be highly wary and will more often than not escape.^[95] The white-tailed eagles must then attack birds at times of vulnerability or injury, or will often utilize the prey's escape tactics against them.^[4] Diving ducks and other diving water birds will be taken preferentially where they are available. In hunting diving birds, they utilize a technique of forcing the birds to dive repeatedly to avoid attacks, until the victim is exhausted from the efforts and can then be caught. Usually while hunting like this, the white-tailed eagle tends to circle low to stay close to the intended victim, with birds diving in shallower water being preferred. Ducks with conspicuous plumage, such as male common eiders (Somateria mollissima), with their pale plumage, may be easier to see under water and so may be taken somewhat more via this hunting method.^{[4][32]} Beyond waterfowl, both loons and grebes have been seen to be successfully hunted in this way.^[4] Eagles were recorded doing between 7 and 12 attacks on eiders in Russia and were usually successful in procuring prey. Even as many as 65 passes have recorded in less than 45 minutes but more than a few attacks also start to exhaust the eagle, as one immature gave up after 15-28 attempts at a little grebe (Tachybaptus ruficollis).^[89]72] While bald eagles may attack diving ducks in the same way, they appear to do so somewhat less regularly and successfully.^{[131][132]} White-tailed eagles usually have less success hunting dabbling ducks because their normal predator response behavior is to take flight. In one instance, a mallard was caught while flying in mid-air, but usually the much larger eagle is unable to capture ducks in flight. While somewhat less swift in flight, healthy geese can usually outpace a heavier eagle as well and one bean goose (Anser fabalis) was even recorded to have defended itself successfully against an eagle's attack even though this goose was injured.^[95] White-tailed eagles often hunt dabbling ducks and geese most successfully when they are molted into their eclipse plumage which renders them temporarily flightless.^[4] Swans during winter may find themselves forced to land due to their bulk on a sheet of ice over water if they can find no open water, which can make their feet stuck to the ice. White-tailed eagles have been recorded utilizing this disability to attack and kill swans.^[133] They've also been seen to attack numerous waterfowl when the birds are injured by buckshot from duck hunters.^[13] Due to their status as enemy of other large birds, they are frequently mobbed by them and white-tailed eagles have been recorded utilizing violent mobbings to suddenly turn over in flight and predaceously grab one of the birds mobbing them, including large gulls and even a northern goshawk (Accipiter gentilis).[4][134] As an opportunistic predator, it often takes young birds freely as well as adult and fledged juvenile birds. In general, due to different nesting situations, white-tailed eagles instead of dabbling or diving water birds usually attack the more conspicuous or open nests of gulls, those of several other types of seabird, large corvids or other accipitrids.^[97] In Germany and Scotland, up to 86% of gulls taken were nestlings and juveniles.[115][135] Cases of white-tailed eagles eating eggs, instead of nestlings or older birds, is considered rare. Nonetheless, they have been recorded eating a few eggs, which they may carry in their beaks rather in their feet, of some seabirds such as kittiwakes, eiders, cormorants and gulls.[89][133]

The most widely recorded avian prey species and, second most widely recorded prey species behind the pike, is the 1.14 kg (2.5 lb) mallard, due to its circumpolar range and commonality in many wetlands areas.^{[4][40][99]} However, as aforementioned, healthy mallards are difficult for white-tailed eagles due to their tendency to fly at first sign of danger. However, exploiting the mallard's flightlessness during eclipse plumage may result in eagles hunting them intensely only in late summer.^{[4][95]} Due to this mallards are usually a secondary prey species year around. The largest known representation of mallards in the diet were from Müritz National Park, Germany, where mallards were the 3rd best represented prey species at 10.1% of 247 items and from Augustów Primeval Forest, Poland, where mallards were the 2nd most numerous prey and made up 9.84%

of 803 items.^{[99][115]} Taken more preferentially where they occur are common eiders. When hunting eiders, perhaps the largest of diving ducks at a mean weight of 2.06 kg (4.5 lb), white-tailed eagles frequently force the eider to dive repeatedly until it is exhausted and can be captured.[32][40][72] When sitting on the nest, the female common eider will try to escape in flight but is a relatively weak and ponderous flier and so too may be often victimized by the eagles.^{[69][136]} Otherwise the pale plumage of adult male common eiders while they're diving is reported to make them more vulnerable to eagle attacks.^{[4][32]} Eiders were the leading prev species in Norway making 18.8% of 1612 previtems, as well as in the Åland Islands, Finland where the eider comprised 18.63% of 5161 prey items (thus nearly a thousand eiders were taken here).^{[32][99][116]} Eiders also appeared to be the main prey species in Iceland.^[137] There is evidence that a growing white-tailed eagle population is having a net negative effect on eider numbers in some areas, and locally eiders have altered to partial nocturnal foraging apparently to avoid hunting eagles.^{[138][139]} In inland regions, an avian prev species preferred by white-tailed eagles is the 836 g (1.843 lb) Eurasian coot (Fulica atra). The coot is the second most widely represented bird prey species (and fourth species of any class known overall) in 18 dietary studies.^{[4][40][99]} Coots bunch together in marshy spots when approached by a flying eagle and as many as 5 eagles at once have been recorded attacking large flocks on the water.^[4] Coots behaviour often endangers them to large raptors: they seldom dive, are weaker and slower fliers than most water birds and are collectively often less wary and more approachable than most waterfowl are.[95][93][94] Coot were strongly the dominant food in Wigry National Park, Poland where they made up 44.1% of 299 items, and were also the leading prev in Augustów Primeval Forest, Poland where they made up 11.59% of the foods. Overall at Wigry and Augustów, birds altogether made up 66.2% and 47.83% of the diets, respectively.[99][105] In the Danube Delta, Romania, birds climbed in importance of the diet from 21% in 1970 to 50% by 2015, thanks largely to increased numbers of coots.[13][129]



Swimming male common eiders are a frequent quarry of white-tailed eagles.

In total, about 38 species of waterfowl are known to be hunted, as well as all available species of loons and grebes, several types of rails, tubenoses as well as herons, storks and other assorted large waders. White-tailed eagles also are known to hunt some 42 species of shorebird, most significantly gulls and alcids.^{[4][99][116]} Even shorebirds as small as 21.1 g (0.74 oz) little stint (Calidris minuta), 62.6 g (2.21 oz) wood sandpiper (Tringa glareola) and 64 g (2.3 oz) common ringed plover (Charadrius hiaticula) are known to be preyed upon, albeit quite rarely.^{[40][104][140]} More than a dozen gulls are known in the prey spectrum from the smallest to all four largest extant species.^{[100][104][98][141]} In the United Kingdom, northern fulmar (Fulmarus glacialis) are noted as a common prey species and as such may contribute to locally high levels of DDT and PCB chemicals in nesting eagles.^[96] However, fulmars defend themselves by regurgitating a smelly, tar-like oily substance that can impair the flight of predators and may even kill some intended predators when it is in large quantity, and young juvenile eagles, being less cautious and experienced, are most prone to being severely "oiled".[4][142] Alcids such as murres tend to become especially important in the diet of eagles in coastal Norway during winter, especially near offshore islands, when coastal fish tend to move to deeper waters.^{[32][139]} At least 8 species of dabbling duck are known in the prey spectrum. Due to the social inclination of dabbling ducks, they perhaps have the most success hunting isolated birds but they've also been taken from panic-stricken flocks as well.^{[4][133]} Despite the difficulty of taking them, dabbling ducks of unidentified species were found to be the main food of white-tailed eagles in Lake Baikal, where

they comprised 51.8% of 199 prey items.^{[98][143]} In Fennoscandia, they are attracted to coastal waters during winter to attack large numbers of diving ducks including eiders, common goldeneye (*Bucephala clangula*), common (*Mergus merganser*) and red-breasted mergansers (*Mergus serrator*), tufted ducks (*Aythya fuligula*) and scoters. Year around in the Åland Islands, 66.2% of 5161 food items were birds, while in the 3 sites in different parts of Finland birds made up 51.1% of 3152 food items.^{[104][108][116]} In Germany, 52.4% of 1637 prey items were birds, mostly coots and unidentified waterfowl. More locally in Germany, in Müritz National Park the percentage of birds in the diet climbs to 65.73%^{[115][99]} Birds were strongly dominant in food records from Scotland, making up 73.53% of 1930 prey items, and in Kandalaksha Nature Reserve, where they comprised 75% of 523 prey items.^{[4][72]}



Juvenile white-tailed eagle pursuing two northern lapwings.

While most of the aforementioned water birds are modest of size and taken largely due to ease (diving water birds, whether healthy or infirm, and usually infirm or molting dabbling water birds), white-tailed eagles routinely attack larger water birds as well. In many areas, large numbers of 3.31 kg (7.3 lb) graylag geese (Anser anser), Europe's largest native wild goose, are taken. For example, they were the main prey, making up 28.2% of 192 prey items, for wintering eagles in Oostvaardersplassen, Netherlands, and the 2nd most often recorded prey species in both Müritz National Park, Germany, where they made up 16.42% of 247 prey items, and in Austria, where they made up 9.5% of 349 items.^{[40][74][99][144]} White-tailed eagles are known to prey on at least 10 species of geese, ranging in size from the 1.23 kg (2.7 lb) red-breasted goose (Branta ruficollis) to the non-native 3.69 kg (8.1 lb) Canada goose (Branta *canadensis*).^{[40][145][146]} They will take many goslings during summer, as greylag goslings alone can comprise up 23% of the seasonal bird prey, and fully-grown geese in other seasons.^{[4][133]} Large waders are taken when possible, including a half dozen heron species, and, larger still, both the young and adults of 5.5 kg (12 lb) common cranes (Grus grus) and both the 2.93 kg (6.5 lb) black and the 3.44 kg (7.6 lb) white stork (Ciconia ciconia). Black and white storks are primary prey species in the Polesie State Radioecological Reserve, Belarus where they comprised 12.6% (2nd most regular prey species) and 6.3% (4th most regular) of the diet, respectively. Large numbers of black stork were also taken in Augustów Primeval Forest where nearly 50 were found around eagle nests.^{[4][99][104][120]} They are reported to have attacked and eaten the largest seabirds they encounter, such as great cormorants (Phalacrocorax carbo) and in some cases, such as in the Baltic sea, have nearly destroyed whole colonies, from the eggs to the adults which average about 2.57 kg (5.7 lb).^{[40][147]} In the Estonian island of Hiiumaa, home to at least 25 pairs of sea eagles, as many as 26 individuals have been observed simultaneously culling a single cormorant colony.^[148] Similarly large numbers were taken of the 2.82 kg (6.2 lb) Japanese cormorant (*Phalacrocorax capillatus*), which was the second most numerous prey species, making up 11.63% of 533 prey items in Hokkaido, and opportunistically, when their north Atlantic colonies are accessed, great numbers of 3 kg (6.6 lb) northern gannets (Morus bassanus).^{[40][127][149]} Vagrant white-tailed eagles in Hawaii were recorded to prev on several Laysan albatross (Phoebastria immutabilis) and were suspected to prey on blackfooted albatross (Phoebastria nigripes), both weighing about 3.17 kg (7.0 lb).[40][150] Another large water bird taken as adults are 4.98 kg (11.0 lb) common loons (Gavia immer).[4][40] However, the largest water birds they are known to kill are adult swans, including mute (Cygnus olor), whooper (Cygnus cygnus) and Bewick's swans (Cygnus columbianus bewickii). While cygnets and disabled birds (either by natural conditions such as ice or by human hunters) are at the greatest risk for eagle predation, white-tailed eagles have prey upon even healthy adult swans weighing at least 10 kg (22 lb).[4][99][105][151][152]

While land birds are a more infrequently part of the diet, at least 60 species have been recorded in the white-tailed eagles prey spectrum.[4][99] For the most part, land birds are taken so infrequently as to not warrant much mention. However, variable numbers of gamebirds are taken opportunistically, and in Belarus and Russia, especially around the White Sea where ptarmigan are not infrequent prey, they will take a few grouse. White-tailed eagles are known to prey on some numbers of ring-necked pheasant (Phasianus colchicus) in Austria.^{[72][126][144]} They will at times attack adult male western capercaillie (Tetrao urogallus), of note for their large size at 4.2 kg (9.3 lb).^[119] However, this is dwarfed by the largest avian prev credited to a white-tailed eagle, an adult male great bustard (Otis tarda), which weighed an estimated 15 kg (33 lb) (which, much like exceptionally large fish taken, must have been consumed in the killing spot or subsequently dismantled as too large to fly with).^[4] Among the land birds taken, more than 20 passerines are included in the prey spectrum but most are obviously too small and swift to be anything but incidental prey.^[4] The smallest avian prey known for white-tailed eagles was a great tit (Parus major), a species which weighs 16.4 g (0.58 oz) on average.[40][153] On one hand, small bird prey may be under-recorded since they leave few conspicuous remains but, on the other, are unlikely worthy of much pursuit as they have little food value. However, in one case, a white-tailed eagle was seen to fly into a murmuration of Eurasian starlings (Sturnus vulgaris) and come away with a starling in hand.^{[4][32]} The only passerine family taken in numbers would be the larger corvids, of which 8 species are known in the prey spectrum.^{[104][129][121]} In Hokkaido, Japan, two species of corvid were well-represented in the diet, the 519.5 g (1.145 lb) large-billed crow (Corvus macrorhynchos) and the 570 g (1.26 lb) carrion crow (Corvus corone), which together comprised 14.8% of 533 prey items.[40][127]

Wikipedia https://en.wikipedia.org/wiki/White-tailed_eagle

We also investigated the finer scale relationships between the occurrence of some species (or species groups) in the prey remains and nesting habitats. As with the major groups, we used a binomial *GLM* with the number of target species from each territory as the response variable, and the number of all prey items as the denominator. As explanatory variables, we used only the habitats considered relevant for the target prey, along with latitude. Hence, lake and marshland were used as a proxy for predicting the availability of fish species; lake, peat bog and marshland were used for waterfowl and gulls (*Larus* spp.); peat bog and marshland for Common Cranes (*Grus grus*) and forest, sparse forest, and open areas for grouse (Tetraonidae spp).

Bird species (or groups of species) in the diet also varied with habitats. The proportion of waterfowl increased with latitude and decreased with the increasing proportion of peat bogs and marshlands (Table <u>4</u>). Grouse increased with the increasing proportion of sparse forest (Fig. <u>4</u>c) and Common Cranes increased with the increasing proportion of peat bogs (Fig. <u>4</u>d, Table <u>4</u>). The proportion of gulls in the diet was not associated with any habitat type (Table <u>4</u>).

https://link.springer.com/article/10.1007/s00300-020-02769-1

New research published in the journal <u>Biological Conservation</u> has found that this was indeed the case for a colony of seabirds on the Swedish island of Stora Karlsö in the Baltic Sea. Without the hustle and bustle of tourists flocking to see the spectacle of so many cliff-nesting birds, the white-tailed eagle (*Haliaeetus albicilla*) saw a sevenfold increase in the area – much to the dismay of the common murre, *Uria aalge*.

While the eagles don't directly predate on murres, which exist in the area in their thousands, data from long-term seabird monitoring revealed they had a significant impact on the reproductive success of these birds. By frequently hassling them and causing disturbances, the researchers found the eagles were indirectly delaying egg laying and actually made it easier for herring gulls (*Larus argentatus*) and hooded crows (*Corvus cornix*) to swipe the eggs.

https://www.iflscience.com/plants-and-animals/seabird-colony-suffered-after-lack-of-touristguardians-meant-eagles-enjoyed-lockdown/

UNINTENDED CONSEQUENCES: HOW THE RECOVERY OF SEA EAGLE HALIAEETUS SPP. POPULATIONS IN THE NORTHERN HEMISPHERE IS AFFECTING SEABIRDS J. MARK HIPFNER1, LOUISE K. BLIGHT2, ROY W. LOWE3, SABINA I. WILHELM4, GREGORY J. ROBERTSON5, ROBERT T. BARRETT6, TYCHO ANKER-NILSSEN7 & THOMAS P. GOOD8

http://www.marineornithology.org/PDF/40 1/40 1 39-52.pdf , which contains:

There are three primary mechanisms by which sea eagles impact seabirds and seabird numbers. Two are direct effects, involving only eagles and a seabird species, with no intermediaries: (1) eagles reduce seabird numbers by killing adults, and/or reduce seabird breeding success by taking eggs and nestlings (Hayward et al. 1977, DeGange & Nelson 1982); and (2) eagles force individual seabirds to behave in a manner that reduces each seabird's risk of being killed, but such behavior imposes some cost, which may be subtle (Harfenist & Ydenberg 1995, Addison et al. 2007). The third is an indirect effect: (3) eagles reduce seabird productivity by forcing incubating and brooding birds to temporarily abandon their nest sites, facilitating the removal of seabird eggs and/or nestlings by other predators, usually gulls and/or corvids (Parrish et al. 1996, Galusha & Hayward 2002).

In Norway, remains found in and under eagle nests between 1956 and 1980 (Willgohs 1984) consisted of 2138 items, of which 56% were birds, 36% fish and 7% mammals. The bird remains included 355 Common Eiders Somateria mollissima (29%), 114 European Shags P. aristotelis (9%), 104 Common Murres (9%), 55 Atlantic Puffins Fratercula arctica (5%), 41 Black Guillemots Cepphus grylle (3%), 38 Razorbills Alca torda or Common Murres (3%), and 30 Herring Gulls (2%).

Seabirds are important prey for White-tailed Eagles reintroduced into western Scotland as well (Watson et al. 1992). Of 854 items identified in pellets and remains at nests and roosts, 123 (14%) were seabirds: 45 Northern Fulmars (5%), 18 European Shags (2%), 1 Northern Gannet (

Indirect effects: Facilitation of predation on seabird eggs and nestlings When sea eagles hunt colonial seabirds, or merely fly over or past a seabird breeding colony, they often cause incubating and brooding birds to panic and flush en masse from nesting areas (Verbeek 1982, Galusha & Haywood 2002; White et al. 2006). Thousands of individuals can be flushed during a single event, and this can occur repeatedly. Seabirds that nest in the open are most likely to flush (Parrish & Paine 1995, Good et al. 2000), but even crevice-nesting species that would appear to be safe from eagles occasionally do as well (Hayward et al. 2010). The temporary abandonment of nests enables other avian predators to steal the seabirds' unattended eggs and nestlings (Verbeek 1982, Parrish 1995, Good 2002). In addition, in their panicked departures, birds may dislodge their own eggs, either

breaking them or removing them from the nest so that incubation is terminated (Parrish 1995). In western North America, at seabird colonies from central Oregon to Alaska, the list of seabird species reported to have been affected when Bald Eagles facilitate nest predators includes cormorants (Doublecrested, Pelagic, and Brandt's P. penicillatus), Western and Glaucous- Hipfner et al.: Recovery of Sea Eagles in the northern hemisphere 45 Marine Ornithology 40: 39–52 (2012) winged gulls, Black-legged Kittiwakes, Caspian Terns Sterna caspia, Common Murres, and crevice-nesting Pigeon Guillemots C. columba. The nest predators that benefitted include Turkey Vultures Cathartes aura, Western and Glaucous-winged gulls, Common Raven Corvus corax, Northwestern Crow C. caurinus, American Crow C. brachyrhyncos, and Black-billed Magpie Pica hudsonia (Drent et al. 1964, Verbeek 1982, Rodway 1991, Parrish 1995, Good et al. 2000, Carter et al. 2001, Good 2002, Suryan et al. 2011, A. Robbins unpubl. data, Bird Research Northwest unpubl. data). In Newfoundland, where Bald Eagle populations are increasing (G.J. Robertson & S.I. Wilhelm unpubl. data), the facilitation of nest predators has increased as Bald Eagle numbers have increased. At Cape St. Mary's Ecological Reserve, observers first witnessed Common Murres losing eggs to Common Ravens as a result of disturbance by eagles in 2006, and this has occurred in every year since (T. Power pers. comm., S.I. Wilhelm pers. obs.). And the number of murre eggshells found at the nests of Herring and Great Black-backed Gulls on Great Island has been rising in concert with Bald Eagle numbers (S.I. Wilhelm & G.J. Robertson