

Debate (published in Dansk Ornitologisk Forenings Tidsskrift 117 (2023): 47-58)

Space for everyone – both healthy recreational activities, wonderful nature experiences and sensitive species (a simple Google translation from Danish)

Invitation from DOF to debate on coexistence between recreational interests and nature concerns

Experiencing nature – on land and at sea – is an important quality of life for many people. According to the Danish Outdoor Council's survey of Danes' outdoor life, 85% of Danes go out into nature at least once a week during the summer (Moos-Bjerre 2017). Only 1% of Danes never or almost never spend time in nature in the summer.

At the same time as the use of nature has increased, in recent years there has been a greatly increased interest among the population in protecting endangered and sensitive species and natural areas. Fortunately, most recreational activities in nature are compatible with the vast majority of nature and biodiversity welfare. But there are sensitive species that require certain considerations if they are to thrive in a densely populated country like Denmark.

The handling of conflicts of interest between nature and nature users, as well as between nature users in our new nature national parks, a number of principles has been agreed between the Ministry of the Environment, the Danish Nature Conservation Association and the Outdoor Council



We would like to soon have the Black Stork back as a Danish breeding bird, after it disappeared only 50 years ago. Photo: Artur Tabor.

(Ministry of Environment, etc.). These principles are rather general, so concretization is needed to make them applicable in nature management.

In this note, the Danish Ornithological Society (DOF) presents its suggestions on what should be done to minimize conflicts between the population's recreational opportunities and considerations for mammals and birds in particular, not only in the nature national parks, but in nature in general. We begin with a review of relevant examples of what is available from research in the area, especially for birds, and then roll out a model for how the population can be ensured optimal recreational opportunities while at the same time that nature and biodiversity are secured in the best possible way.

Our starting point is that a rich nature and biodiversity is an important prerequisite for many people's experiences in nature, at the same time that many other nature users are more focused on the development of outdoor life and often sporting activities, for which space must also be found. In the nature national parks, management must take place entirely "taking into account that the main consideration in the nature national parks is nature and biodiversity", as stated in the agreement between the Ministry of the Environment, the Danish Nature Conservation Association and the Outdoor Council.

Hunting involves so many problems that it requires its own treatment, so in this note we only address hunting to the extent that it affects other recreational interests. But of course, there should be no hunting in the 10% of land and sea, which must be strictly protected nature according to the EU's objective (EU Commission 2020) and the CBD COP15 conclusions (CBD 2022).

What do we know?

Unlike the parts of the world where hunting with firearms is not widespread, most larger mammals and birds are far more shy in our part of the world than they would naturally be. This means, for example, that most larger birds fly away at a much greater distance than they otherwise would have done – also from human activities other than hunting (Meltofte 1982, Laursen et al. 2005, 2017; see also the note at the end and Meltofte et al. 2021 for numerous examples of animals becoming less shy when they are no longer hunted). The effects of this and of the increasingly extensive recreational activities in general in the Danish nature over the last half century are gradually available from a number of studies. A number of bird species that breed on sandy beaches and several species of birds of prey as well as Grey Herons are thus under pressure in certain areas, including the publicly owned forests, which since 1969 have had more liberal access rules, e.g. in the form of free surface traffic (i.e. off roads and paths) and round-the-clock access, unlike private forests. In an analysis of a large material on breeding Common Buzzards near Kolding, Sunde et al. (2009) found that 40% of the breeding birds had left the nest when an individual was 100 m from the nest, and 60% when the individual reached within 50 m. The Buzzards preferably avoided breeding within 20-50 m of human structures (roads, buildings etc.), and the greater the total length of roads and paths that were in a given forest and open country area, the fewer Buzzards bred there (Sunde & Odderskær 2010a, 2010b; see also Martínez-Abraín et al. 2010). In the USA, it has similarly been found that birds of prey must have a disturbance-free safety zone of between 150 and 650 m (mean 400 m) from human disturbances, depending on the species (Dertien et al. 2021; see

also Ruddock & Whitfield 2007 on escape distances for many other breeding bird species). Apart from the fact that the disturbance itself can be problematic, there is a great risk that corvids, for example, empty the nest while the brooding bird is away.



After more than 150 years of pursuit with firearms, many larger birds are still so shy that they are sensitive to disturbances especially during the breeding season. This applies in particular to the Goshawk, which is in decrease in many parts of Denmark. Photo: Knud Falk.

Censuses of the raptor populations in two Danish forests substantiate that the disturbances can have at least local effects. Thorough annual mapping of raptor nests in Store Dyrehave in North Zealand since 2009 shows how the number of inhabited raptor nests was greatly reduced from 24 to just five inhabited nests over a six-year period 2009-15, after a 27 km long MTB route was built criss-cross through the forest, which is used both night and day, as well as a ‘health track’ and a ‘heart path’ close to the nests in the winter of 2009-10 (L. Ekberg in litt. 12.12.2022). For Common Buzzard, it was a reduction from 17 nests to four. For Goshawk, it was from four to one nest in 2015, and in 2021 it was completely over. For Honey Buzzard from three also to zero. See also about Grib Skov in Ekberg et al. (2022).

Jørgen Jensen, Hjortdal, reports exactly the same (in litt. 28.12.2022): "I have followed the bird life in Svinkløv/Kollerup plantations in North Jutland since the late 1970s. Since I have been employed in the forest district with a workshop in the middle of the plantation, I have been able to follow and observe annual variations in the distribution of the species. [...] In the 70s, 80s and 90s, Svinkløv/Kollerup were intensively exploited dune plantations with a lot of manual logging activity, but also with large areas without activity and without walking and cycling paths. During

that period, the number of owls and large birds of prey was almost constant from year to year. In Svinkløv 3-4 pairs of Common Buzzards, 1-2 pairs of Goshawks and 2 pairs of Long-eared Owls. In Kollerup 2 pairs of Buzzards, 1 pair of Goshawks and 1-2 pairs of Long-eared Owls. [...] Since the year 2000, countless hiking, riding and cycling routes have been laid out in Svinkløv and Kollerup plantations. In the same period, the large birds of prey and owls have disappeared. Last year there were a pair of Common Buzzards with young in the old oak trees southeast of the plantation. This year I haven't seen any. A new mountain bike route has been laid out in the area. There are still Eurasian Eagle Owls in the western part of the plantation, which the Danish Nature Agency is trying to make disturbance-free, but the large birds of prey are gone.”

In both forests, other pressure factors may have applied, such as disturbances from logging and arrival of Eagle Owls, but the coincidence between the establishment of the recreational facilities and the declines in the raptor populations is in any case striking. In addition, the breeding population of Goshawk in Denmark has almost halved since the 1990s, which may have been contributed to by more disturbances in particularly stressed areas, where Common Buzzards and Honey Buzzards have also declined (Nielsen et al. in print).

For birds in general, a French study documents that even as low a disturbance pressure as two walks per day in a forest at the beginning of the breeding season significantly reduced both the number of species and the number of territories compared to control areas (Bötsch et al. 2017; see also Bötsch et al. 2018 and references therein). Similar results were found for forest and grassland in the USA, where especially the specialists among the birds were negatively affected, and where it was therefore recommended to keep as large total areas free of trails as possible (Miller et al. 1998, Thompson 2015; see also Gutzwiller & Anderson 1999). Similarly, Holm & Laursen (2009) found that just seven walks per day over the meadows on Tipperne in West Jutland during the establishment and breeding season reduced the breeding density of Black-tailed Godwit up to 500 m from the route, just as the birds were away from the nest for a longer time than in a control area. Since the opening of the road up through the reserve to public traffic (with rules that are by no means always adhered to), there has been a decrease in the proportion of young-tending families of Northern Lapwing, Baltic Dunlin and Black-tailed Godwit using the meadows within 200 m of the road, which corresponds to a loss of 16% of the reserve's land area (Sterup 2019). In the Netherlands, the densities of breeding waders – especially Lapwing, Eurasian Oystercatcher and Black-tailed Godwit – were reduced up to 1500 m from busy roads (Reijnen et al. 1996). Even more significantly, the impact of the greatly increased outdoor activity on the beaches has been for species such as the Kentish Plover, Common Ringed Plover and the Little Tern, which declined strongly as breeding birds along our coasts in the second half of the 20th century (Grell 1998, Thorup & Bregnballe 2021; see also Courtney et al. 2016). Also in Great Britain, strongly reduced breeding occurrences of Oystercatcher and Common Ringed Plover were found in areas with many beach visitors (Tratalos et al. 2021). Against this background, the Danish Centre for Environment and Energy (DCE) has recommended the creation of several areas with no access on the beaches in the Bay of Ålborg and the Wadden Sea (Bregnballe et al. 2022), where the authorities have so far been very slow to follow up on such reserve orders. In addition, "There are [...] many examples of people ignoring the regulations" (Bregnballe et al. 2022), which is clearly related to a lack of enforcement by the authorities and makes fencing necessary.

A US study of the escape distance of wintering Bald Eagles to different types of human activity along a river found that pedestrians resulted in the most scaring (46% of cases), while cyclists

disturbed at the greatest distance (146 m; Spahr 1990). In another US study, it was found that people walking directly towards waterfowl was the most disruptive activity and that photographers were relatively most often involved in this behaviour (Klein 1993).

Based on the literature at the time, Tind & Agger (2003) prepared a review for the Danish Outdoor Council, where the authors stated that "A large number of Danish and foreign studies have shown negative effects of outdoor life on animals (especially birds) and plants. Few studies have shown no or positive effect. However, when these studies are put in relation to the other human influences on nature and the extent and form of outdoor life in Denmark today, we estimate that the effects are limited. The negative effects of outdoor life in Denmark are primarily linked to hunting and coastal activities – including sailing. Concretely, we see the main problems as being in relation to birds of prey and colonially breeding birds as well as grey seals. If the persecution by hunters in earlier times is disregarded, i.a. of birds of prey, none of our red-listed species are rare and endangered as a result of outdoor activities, but several species are today negatively affected by disturbances and wear and tear as a result of, among other things, outdoor life." The authors conclude that "A higher degree of zoning in relation to outdoor life, with the establishment of disturbance-free core areas on land, we believe, can create both better opportunities to experience especially mammals and birds, and better opportunities for a number of large birds of prey to find a foothold in Denmark." Such action was successful in establishing protection zones around many eagle nests, which helped to ensure a rapid population growth for the White-tailed Eagle (see Ehmsen et al. 2011), but Tind & Agger's review is from 2003 and the studies are therefore more than 20 years old. Within the last 20 years, there has been a significant increase in sporting activities in nature and a very large increase in surface traffic outside the paths in the form of geocaching, trail running, tree climbing, bushcraft, MTB track establishment, hand gliding and drone flying as well as more un-leashed dogs (see Meltofte 2015), so the need for zoning has greatly increased since then. For example, 37% of dog owners, in violation of the law, let their dogs run loose in the forests and 72% on the beaches in the summer, which leads to greatly increased disturbances to wildlife.

An American study of birds and deer in both open country and forest showed that "For all species, area of influence, flush distance, distance moved, and alert distance (for mule deer) was greater when activities occurred off-trail versus on-trail" (Miller et al. 2001). The obvious explanation is that the animals get used to traffic on fixed routes but are frightened by unpredictable activities (see below).

On the water, moulting and resting waterfowl have come under increasing pressure from recreational disturbances other than hunting. For example, a study of kayakers' disturbances to moulting Mute Swans (which cannot fly) in Roskilde Fjord has shown that the swans reacted to the kayak at a distance of usually between 260 and 470 m by swimming away, and that their energy consumption increased by 34% (Clausen et al. 2020). The problem here is that kayakers themselves do not realize that the swans cannot fly, and do not know that their activities are highly disruptive (see Marion & Wimpey 2007). Also, in a study of disturbances from angling from boats on Store Kattinge Lake near Roskilde, Madsen (2002) found that fishing on autumn days reduced the number of day-roosting Tufted Ducks from the morning to the afternoon by 42%, whereas there was no decrease on days without fishing. On fishing days when the Tufted Ducks could not use a part of the lake with no fishing due to hard wind, 65% of them left the lake, and there was no sign of the Tufted Ducks getting habituated to the fishing activity during the season. In line with this, an

English study found that rowing, kitesurfing, and windsurfing caused by far the most extensive disturbances to waterfowl compared to other activities (Therkildsen et al. 2013).

For seaducks, there has been a significant change in the distribution of the birds that moult in the inland Danish waters over time, which is assumed to be connected with the increase in the recreational use of the marine area (I. K. Petersen in litt.). In the Limfjord (Velvet Scoter, Great Scaup, Common Goldeneye, and Red-breasted Merganser), but also in the Sejerø Bay (Velvet Scoter) and the Wadden Sea (Common Eider), the disturbances have resulted in a decreasing number of moulting birds (Laursen et al. 1997, Petersen et al. 2015, 2017), which however, eutrophication may also have contributed to in the case of the Limfjord (Christiansen et al. 2006). For Great Scaup, Velvet Scoter, and Red-breasted Merganser, large declines have also occurred nationally for the moulting birds in late summer (Joensen 1973, Laursen et al. 1997, Nielsen et al. 2019), just as the flyway populations of several of the mentioned species have decreased in recent decades (Wetlands International 2019).

For these sensitive occurrences of migrating waterbirds, the problem is to a very large extent that there is a temporal coincidence between the period in late summer when they cannot fly and the period when there is the most activity on the water (Laursen et al. 2016, 2021), and Laursen et al. therefore mentions information campaigns and zoning as means that can minimize the conflicts. DCE proposes such zoning in the form of "disturbance-free areas during the moulting period", for example in the coastal parts of the Bay of Ålborg and the Wadden Sea (Bregnballe et al. 2022). The problem is, however, that the Danish Environmental Protection Agency's efforts with reserve establishment have been extremely slow in the last several years.



In the past, sailing took place almost exclusively in deep water, so the birds were undisturbed in shallow water, but they are no longer. It is worst for migratory waterbirds, which cannot fly exactly during the period when there are most recreational activities in nature. Photo: John Frikke.

The extent to which disturbances have an effect at the population level is poorly known. But in many cases the chasing away of the birds corresponds to the loss of staging and foraging areas, and

in a Dutch study it was seen that a significant proportion of the wintering Oystercatchers in the Wadden Sea were so pressed for time for foraging that disturbances reduced their fitness (van der Kolk et al. 2021). In contrast, Collop et al. (2016) found that wintering waders in the Wash in England were hardly disturbed by disturbance. For ground-nesting breeding birds, a global meta-analysis of the effects of recreational activities (humans on foot) showed indications of significantly reduced hatchling success and chick survival as a result of such disturbances (Showler et al. 2010). In the same study, there were indications that the population density of species such as Common Ringed Plover, Eurasian Golden Plover, Dunlin, European Nightjar, and Woodlark was "substantially reduced" in places with disturbances. People with a dog had a greater negative effect than people without a dog. Increased predation by gulls and corvids while the birds were away from nests and chicks was among the causes of the negative effects.

When assessing long-term effects, it is important to take into account this Norwegian statement that "Studies of direct local damage often underestimate cumulative effects as a result of animals that are sensitive to disturbance avoiding large areas around existing infrastructure or heavily used thoroughfares because wildlife associates the interventions with periodic traffic in the area. Changes in the animals' land use will have far more serious consequences than the direct effect of the individual disturbances as such" (Øian et al. 2015).

In addition, just as with the moulting swans that cannot fly, the people who disturb the birds, for example, often do not experience, let alone discover, it themselves (Marion & Wimpey 2007). This means that the often-stated mantra that the recreational activities must of course take place with regard to particularly vulnerable occurrences (as is done in many 'codes of conduct', for example), is in practice meaningless on a person-individual level.

Furthermore, an American study confirms that 640 nature visitors overestimated how close they could approach larger animals without being startled, and they tended to blame other nature users for disturbing rather than acknowledging their own disturbances (Taylor & Knight 2003).

Many bird species began to appear much more frequently both as breeding birds and winter visitors in Danish cities after shooting and trapping had stopped in the late 19th century (Meltofte et al. 2021), and most bird species have shown a great ability to adapt to human disturbances (Samia et al. 2015). However, this necessitates that all their encounters with humans are peaceful or, on top of that, involve feeding. Even large and otherwise very shy birds such as individual pairs of Danish White-tailed Eagles show signs of getting used to humans up to a certain distance from the nests, which was certainly facilitated by the protection zones that were established around exposed nests in the first years, which gave the eagles the opportunity to gradually get used to people (Ehmsen et al. 2011). Other birds of prey such as Common Buzzards and Goshawks can be expected to increasingly adapt to noise and traffic in the cities, as there are signs of, for example, in Copenhagen and to a much greater extent in e.g. Berlin with now around 100 pairs of Goshawks (Kenntner 2018). However, there is still a long way to go before we can experience bird of prey populations that are not marked by the intensive persecution that only subsided half a century ago, and which still takes place to a considerable extent along the flyway routes around the Mediterranean for the long-distance migrating birds of prey.

There are therefore quite a few individual studies that demonstrate major and minor effects of recreational activity in nature, both in forests, in open country, on beaches and on water.

Need for more space, regulation, information and research

The Danish Outdoor Council's vision and mission is: Outdoor life for all – in rich nature and on a sustainable basis.

A brand-new interview survey of 26,000 Europeans from 26 countries shows that there is a clear correlation between people's satisfaction with life and the diversity of birds and nature in their surroundings (Methorst et al. 2021), and there is a clear correlation between people's connection to nature and their support for nature and environmental protection (Whitburn et al. 2020). Also, for that reason, it is obvious that the nature organizations have a significant interest in giving both children, young people and adults the opportunity to have good experiences in nature. This of course applies not least to the members of the associations, who are strongly interested in being able to visit even the highly classified natural areas, such as our many internationally significant bird localities (see Vikstrøm et al. 2015).

There are many ways to channel activities in nature, which both benefit nature and increase the quality of nature visitors' experiences. Without a footbridge like this, you would not be able to experience being in the middle of a large reedbed. Photo: Allan Gudio Nielsen, Danish Bird Protection Foundation.



The condition for many people to experience a rich bird life is, of course, that the birds have not been scared away by previous visitors to the area, whether they are breeding birds of prey, islands with colony-breeding coastal birds or large concentrations of resting and foraging waterfowl. With many people wanting to use nature on land and in the sea, it requires regulation of access so that one type of user does not destroy it for the others, or the bird populations are threatened. This involves, for example, people not walking over meadows with breeding meadow birds or large

flocks of resting and foraging geese but experiencing the birds from well-placed vantage points such as hides and bird towers. It also implies that, for example, places are maintained or created in the forests that are peaceful enough for the 'large wingspans' (birds of prey, black storks and herons, etc.) to breed successfully, and can then be experienced in many other places in nature. Only in this way can we all live up to the Outdoor Council's vision and mission of a sustainable outdoor lifestyle.

The more people who are active in nature, the greater the need to manage the activities, so that nature visitors do not destroy it for each other and degrade the qualities which are an essential element in many people's nature experiences – and which have a justification in themselves. There should be enough space for everyone in a country where a large part of the agricultural land is expected to be taken out of operation in the future.



In the University of Copenhagen's Project Outdoor Life from 2009, a total of 59% stated that the most important reasons for their visit to nature are to experience nature/landscape, peace and quiet and wildlife. It's pretty much the opposite of loose dogs and fast-moving cyclists. Photo: Hans Meltofte.

As examples of conflict areas, it can be mentioned that more and more mountain bike routes are being established, e.g. in the hilly areas of the forests, where there were no roads and paths before and therefore peace for particularly sensitive species. And where sailing was previously limited to areas with a certain water depth, windsurfers, kite surfers, jet skis, kayaks and paddleboarders now sail around in shallow areas where there was otherwise peace for resting and moulting waterbirds. With the regulation of access, many stakeholders have sought to resolve such conflicts, e.g. with local conservation regulations or general rules for traffic and access to nature, which has largely

succeeded in the case of hunting, but the political will to introduce and not least enforce access rules for other recreational activities has unfortunately decreased significantly in recent decades. An example of this is the latest trend of mountain biking with LED lights in nature at night, which is prohibited according to the Decree on the public's access to travel and stay in nature (BEK no. 852 of 27/06/2016). Here it is stated in Chapter 5 General rules § 28: "On beaches, other stretches of coast, dune-protected areas, in forests, on uncultivated areas and on roads and paths in the open country, the following is not permitted: [Section 10] Use of metal detectors etc., searchlights or other bright light." It is time for this provision to be enforced by the authorities, as modern LED bicycle lights have a brightness of up to 4000 lumens, which is twice that of a car light.

As mentioned, one of the major problems with several of the new activity types is that the practitioners move unpredictably through the terrain or on the water. Madsen et al. (1999) thus established the also generally known fact that predictability is of central importance for the ability of animals and birds to adapt, while human behaviour that significantly differ from 'normality' has a far greater scaring effect than regularly repeated behaviour such as a farmer's ploughing, or a fisherman who sails from net to net every day. The same great scaring effect naturally applies to loose dogs running hither and thither (Miller et al. 2001).

At a meeting with DOF BirdLife Denmark on 28 May 2021, the then Environment Minister Lea Wermelin expressed her understanding that it was appropriate to have rules for recreational activities in the new nature national parks, but at the same time said that "We must not take anything from the population." We at DOF BirdLife Denmark agree with that, but it is also not a zero-sum game, where it is a choice between opportunities for experience and consideration for sensitive species. Instead, there is the possibility of solutions that can both improve the nature visitors' opportunities for experiencing habitats and species and the living conditions of wildlife, where intelligent planning and zoning are carried out. Kayakers, for example, get a more peaceful nature experience by watching the throngs of nesting birds on a protected breeding island at a short distance from the island, than by going ashore among nests, eggs and chicks with screaming and 'dive-bombing' birds overhead. And the forest visitor, who is looking for peace and space for reflection and contemplation, gets more out of the trip if one group of mountain bikers doesn't rush past after another. On the other hand, mountain bikers can benefit from the fact that challenging cycle routes are established, for example in newly planted urban forests, where parts of the forests are designed to their needs from the outset with challenging hills and varying degrees of difficulty, which the agreement between the Ministry of the Environment, the Danish Nature Conservation Society and the Outdoor Council refers to as compensatory actions. The establishment of mountain bike routes and other sports facilities in new, predominantly urban forests must not only alleviate a need for such facilities, but also make it possible to rearrange or even close down routes that have been established in sensitive nature.

Finally, it is not self-evident that everyone has should be able to advance everywhere when Denmark's international obligations in terms of various conventions and directives in the field of nature and biodiversity must be observed.

The balance between protection and recreational use

"A higher degree of zoning in relation to outdoor life, with the establishment of disturbance-free core areas on land, we believe, can create both better opportunities to experience especially mammals and birds, and better opportunities for a number of large birds of prey to find a foothold in Denmark" (Tind & Agger 2003 in the Outdoor Council's report *The effects of outdoor activities on nature in Denmark*).

"There may be a need for infrastructure for outdoor life to be maintained and, if necessary, expanded, partly to provide access to and in the fenced area [natural national parks], but also to ensure that people are guided around or through vulnerable natural areas in an appropriate manner, which ensures the protection of the natural area in question." Quote from the agreement in principle between the Ministry of the Environment, the Danish Nature Conservation Society and the Outdoor Council on management of the Nature National Parks.

It is far from being the only concern for nature and biodiversity that divides the waters. There are at least as large conflicts between different recreational interests among themselves. But the two things are connected, as the opportunities to experience a large part of the wildlife require areas with low disturbance pressure.

In a number of studies, the vast majority of forest visitors interviewed say that they seek peace and relaxation in nature, and experiences of wildlife feature heavily among their wishes. The most recent major survey of the Danish population's outdoor life and desires for experiences in nature thus showed that for 85% of the adult population in 2008 it was important to one degree or another to meet animals during visits to nature/landscape (Jensen & Cleemann 2018). 15% also answered that it was "very important" to meet animals on their trip. Animal watching was only surpassed by more universal activities such as "experiencing nature" (where animal watching can also be included) and "going for a walk" (Jensen & Skov-Petersen 2008). Together with the figures above, it supports the fact that three quarters of a million Danes find that it is very important for them to see animals on their walks in nature, which does not harmonize well with sporting activities. The problem here is that the sporting activities have very active interest organizations to promote their interests, while the majority of nature visitors, who seek peace and quiet and abundant wildlife, are not organized to the same extent and therefore often fall short. Even the organizations that think they are protecting their interests seem to be more into "we want easy access to nature" than to make it a little more demanding if you want to experience the most valuable nature areas. There must be room for everyone, but not necessarily everywhere.

In the following, DOF BirdLife Denmark gives its suggestions on how recreational interests in nature on land and at sea can be managed so that the many interests are catered for in the best possible way. Here we start from the latest version of DOF's view on nature, where the following appears under the heading Experiences and outdoor life in nature:

"For DOF, a rich and undisturbed bird fauna is an important part of the quality of life that nature gives us humans. One of DOF's main aims is to convey joy and interest in nature and the wild flora

and fauna. Through this passion for birds, DOF wants to ensure knowledge and understanding of bird life, as knowledge is the driving force behind initiatives that protect and improve the living conditions of wild birds. Familiarity, knowledge and understanding of the birds can, among other things, spread through the development of outdoor life and tourism in nature.

"However, recreational activities can lead to critical disturbances and destruction of living conditions for birds as well as the other flora and fauna, if respect is not shown for nature's own needs and premises to thrive. A number of activities take place in nature without further relation to it and can cause unconscious and unintentional disturbances. Outdoor activities in nature should therefore always take place in accordance with the provisions and regulations that protect sensitive species and landscapes.

"Other recreational activities take place in direct interaction with nature to enjoy, study or observe it. In this type of activity, it is crucial that the practitioner always shows extra consideration and good behaviour."

Against this background, DOF BirdLife Denmark has drawn up the following recommendations for how recreational interests and respect for nature are coordinated based on the concept of intelligent planning, so that everyone is given space, opportunities for experience and expression.

1. The current rules for access to nature should be maintained as a starting point, both in forests and in the open country. [This means that only in the third of the Danish woodland that is publicly owned, it is allowed to walk off-road and during night.]
2. New facilities for sporting activities should, as far as possible, be built in new forests, on reclaimed agricultural land or other areas that do not contain vulnerable nature. This applies especially in urban areas, or in forests and on agricultural land, which already has a high level of disturbances and does not house disturbance-sensitive species. Fortunately, more and more forests are being established and unproductive arable land taken, where sporting activities can be catered for without compromising the natural values of existing nature.
3. The national parks and future natural national parks should be managed according to IUCN category II, which i.a. implies that use must not compromise protection. This basically means that no facilities are allowed or maintained for larger or particularly noisy sporting activities (existing facilities should be closed down or moved on the basis of a specific assessment). In general, DOF recommends that significant areas be secured with a minimum distance of 500 m between travelled paths and forest roads, so that there are sufficient undisturbed breeding areas for birds. This ensures that "people are led around or through vulnerable natural areas in an appropriate way", as stated in the agreement between the Ministry of the Environment, the Danish Nature Conservation Society and the Outdoor Council.
4. In the public forests that are set aside as virgin forest (outside nature national parks), at least 50% of the forest should be set aside as a quiet zone, which is kept free from particularly disruptive activities such as sports events, organized outdoor activities and other major events. Where it is practically possible, quiet zones should be established with a minimum distance of 500 meters between travelled paths and forest roads, so that there is sufficient undisturbed breeding areas for larger birds of prey, etc.
5. Areas with particularly sensitive species or potential breeding areas for such species, e.g. on beaches and for birds with 'large wing spans' in forests, disturbance-free areas (refuges; see appendix 1) should be created, as is already the case in a number of reserves on breeding

islands for coastal birds and in areas with populations of special species. These can both be permanent reserves or flexible arrangements. The red deer reserve at Grærup Langsø and the Nature Agency's areas at Vind Heath are excellent examples of how it is in everyone's interest that the animals (which are not hunted and thus are diurnal and relatively confident) can be experienced from a distance and with no public access to the habitats of the animals themselves. In general, Marion & Wimpey (2007) recommend that paths are not established along wetlands and riparian vegetation.

6. DOF experiences that the number of un-leashed dogs in the wild has increased significantly in recent years, which is a major nuisance for both nature and the other visitors. Therefore, DOF recommends that an extra effort be made to draw attention to the negative consequences of loose dogs and the need for the applicable regulations in the area to be observed. This can be done, for example, via campaigns and improved signage in nature, just as it should be followed up with increased enforcement of the rules.



The ban on loose dogs in the forests all year round and on the beaches in the summer should be enforced much more firmly than today, even if it will initially cause conflicts and unpopularity for the authorities. Drawing: Jens Gregersen.

7. In the marine area, the reserve network is expanded with areas that are or until recently were important moulting grounds for waterfowl. In these, a ban is introduced against non-commercial sailing during the birds' moulting period in the summer months and early autumn. This presupposes a significant prioritization of the Danish Environmental Protection Agency's efforts with reserve establishment.
8. A critical review of Denmark's uninhabited islands should be carried out with a view to identifying islands which today have breeding coastal birds without being protected, as well as islands which have the potential to be breeding islands for coastal birds.
9. Where Danish research into the effects of hunting disturbances is at the forefront internationally, research into the effects of other recreational activities is close to non-existent. This is in stark contrast to the USA, where there is a long tradition of such studies (see e.g. Leung & Marion 2000, Marion 2006, Monz et al. 2010 and Dertien et al. 2021). Based on the existing knowledge, sensible measures can be implemented immediately, but in relation to the variation in the sensitivity of species and the effects of different measures, it is relevant to provide more knowledge in parallel.



Children do not get out into nature nearly as much as in the past, and biology teaching in schools has been cut back a lot, so there is a very great need for nature education outreach to the younger generations. There will be great opportunities for this in the new protected nature areas, where tranquillity should be ensured in large parts of the areas. Photo: Søren Langkjær.

10. Targeted education and awareness-raising must be carried out among the population groups that use nature the most – including those interested in nature – so that the level of knowledge and respect for rules and general nature considerations increases. Here again, we are far behind, for example, the USA, where there are good experiences with such educational programs (Marion & Reid 2007).

"There must therefore be both areas [in nature] where, for example, mountain bikers and windsurfers can unfold, areas where all 'quiet users' can move freely, and areas where we humans 'take a step back' to make room for the more sensitive nature." Quote from the Outdoor Council's Vision for Nature, 2005.

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Note given at the Recreational Disturbance Conference Tuesday 21st February 2023

I want to mention an item that very few people are aware of

I have written it down, so that I do not miss anything

It only takes about 2 minutes

Why are most larger birds often so shy?

Anyone who has travelled in India or in many countries in sub-Saharan Africa has seen how trustful birds can be in these countries

In India, a large raptor can sit in the top of a tree 10 m above your head, while they in western Europe would fly away at more than 100 m distance

The reason is that in Europe they have been shot at for 200 years since industrialization made shotguns so cheap that anyone could buy one

In the Copper River Delta in Alaska my wife and I once approached a flock of 2000 dunlins to see, when they would flush. When we came really close, the closest birds ran to the sides, so that we could walk right into the flock. The birds closed the circle behind us, so that we stood in the middle of the flock with intensively feeding birds all around us, with only a radius of 20 meters without birds

Waders have not been hunted during the last 100 years in North America

It is hunting that to a very large extent determines, how shy birds are

We just don't see it

We think that it is natural that larger birds fly away from us at hundreds of meters distances, instead of the 20 or 30 meters that is natural

So, not only do hunting disturb a lot, as many scientific studies have shown, it also makes the birds so shy that the rest of us disturb much more than we otherwise would do

I do not argue that hunting should be forbidden, but hunting intensity in our part of the world should be severely reduced

That would solve a lot of problems

Things are already improving following reduced numbers of quarry species, shorter open seasons, more shooting free reserves etc., but there's still a long way to go.