

## 5 Summary assessment of data and conservation status

### 5.1 Data and conservation status of natural habitat types

The data available for assessing the conservation status of the 13 priority natural habitat types are almost exclusively based on the mapping implemented by the Danish county authorities during the winter of 1999-2000. The mapping is primarily based on existing information; however, several sites have been verified by field visits. The results of mapping reported in a schematic form provide information on the location, size, vegetation, and administrative status of the habitats, and threats to their maintenance. Whenever possible, other studies have been included in the interpretation of the information reported, particularly when evaluating the completeness of the cover achieved for the habitats and the representativeness of the extent of habitat types reported for the country as a whole.

The information value of the data sheets reflects the resources invested in this first survey of the status of natural habitat types. The levels of detail differed considerably and the information essential to assess the conservation status varied greatly. By way of example, some reports provide detailed information on the location and size of occurrence at the habitat level whereas other reports only provide a summarised survey at the locality level without specifying how much of the locality can be classified as one or the other of the natural habitat types. Some reports also include a list of species whereas others either provide no information on the species or mixed lists of species from localities covering several different natural habitat types. The threats reported to habitats are generally based on qualitative assessments rather than on actual quantification.

A basic source of uncertainty affecting all the analyses of the data sheets submitted has been the lack of information relating to changes in the distribution and abundance of habitats and pop-

ulations of typical species over time. Since these temporal changes are especially important in relation to the objectives of the Habitats Directive, the assessments of conservation status of the natural habitat types are subject to substantial uncertainty.

Even though part of the variation in the material reported stems from differing methods and time investment on the part of the individual counties, the quality of data from the different habitat types also differs significantly. Firstly, some natural habitat types are more easily recorded and digitised than others, coastal lagoons (1150) for example can be digitised on the basis of maps whereas the different types of grassland (6120, 6210, 6230) can only be identified in the field based on their species composition. Secondly, some habitat types have been more easily interpretable than others. Thus, coastal dunes with *Juniperus* (2250) are more clearly defined and delimited than the coastal lagoons (1150) and the grassland types (6120, 6210, 6230) whose boundaries have caused some confusion. Lastly, prior knowledge of the various habitat types was differing considerably. Many counties had a good prior knowledge of the calcareous fens with *Cladium mariscus* (7210) whereas the knowledge of petrifying springs with tufa formation (*Cratoneurion*) (7220) was less complete. Finally, the forest habitats (9180, 91D0, 91E0) differ from the other habitat types, as the majority of the forests reported are state-owned, which has resulted in an imbalance in the background data.

An essential part of the uncertainty involved in this first assessment of the conservation status of the priority natural habitat types can be explained by the lack of existing precise information (Table 5.1.1). However, a fundamental knowledge base is still missing. The fulfilment of the objectives set out in the Habitats Directive requires a fundamental knowledge of the structure and function of the natural habitat types, at both ecosystem and population levels. This knowledge is presently only available to a very limited extent.

Table 5.1.1. Background data and conservation status of the 13 priority natural and semi-natural habitat types in Denmark.

Habitat type Natura 2000 code	Background data			National conservation status
	Range	Structure and function	Typical species	
1150	Satisfactory	Insufficient	Insufficient	Unfavourable
2130	Uncertain	Insufficient	Insufficient	Uncertain
2140	Uncertain	Insufficient	Insufficient	Uncertain
2250	Satisfactory	Insufficient	Insufficient	Favourable
6120	Insufficient	Insufficient	Insufficient	Uncertain
6210	Satisfactory	Insufficient	Insufficient	Uncertain
6230	Insufficient	Insufficient	Insufficient	Unfavourable
7110	Satisfactory	Uncertain	Insufficient	Unfavourable
7210	Satisfactory	Insufficient	Insufficient	Uncertain
7220	Insufficient	Insufficient	Insufficient	Uncertain
9180	Insufficient	Insufficient	Insufficient	Unknown
91D0	Insufficient	Insufficient	Insufficient	Favourable
91	Insufficient	Insufficient	Insufficient	Unknown

After assessing the overall conservation status of all the 13 priority natural habitat types, the outcome is that 2 types can be taken as favourable, 3 types can be considered as unfavourable, 6 have an uncertain conservation status, and for 2 types the status is unknown (cf. Table 5.1.1).

The two types assessed to qualify for a favourable conservation status are coastal dunes with *Juniperus* spp.; 2250) and bog woodlands (91D0). Both types primarily occur in their initial stages in dunes and peat bogs and have become more common in the Danish landscape as the human exploitation of dunes and mires has ceased.

Unfavourable conservation status describes a situation where the natural habitat type is exposed to either a decrease in area or another sort of deterioration in quality (decline in the number of typical species or deterioration in structure and function). The natural habitat type, active raised bogs (7110) is in its natural state very stable but the fact is that, nowadays, the majority of active raised bogs are exposed to marked changes caused by eutrophication and /or drainage. Species-rich *Nardus* grasslands (6230) were up until 100 years ago, quite common in the Danish cultural landscape but has now become rare as a consequence of cultivation, fertilisation and planting. The decrease in this habitat type is still continuing but at present the threats to

this habitat type and its typical species are ironically the results of the cessation of cultivation activities. One of the typical species of this habitat (*Gymnadenia albida* ssp. *albida*) is now so rare that its survival in Denmark is endangered. The natural habitat type, coastal lagoons (1150) is estimated to be so affected by eutrophication and anthropogenic barriers that its conservation status is assessed to be unfavourable.

The conservation status of 6 out of the 13 priority natural habitat types has been categorised 'uncertain'. The category 'uncertain' describes a situation where the habitat type is decreasing but where, so far, no precise documentation is available verifying this as a fact. For most natural habitat types, features such as scrub encroachment as a consequence of ceased grazing and eutrophication in the form of atmospheric deposition of nitrogen compounds contribute to the negative assessment. The invasion of exotic species like e.g. *Rosa rugosa*, mountain pine *Pinus montana*, and the moss *Campylopus introflexus* as well as the isolation of small populations of typical species also characterise negative trends.

For two natural habitat types the conservation status is assessed to be unknown. The habitat types concerned are forest habitats where the mapping practically only covers state-owned

areas, where as a result it is not feasible to assess their overall conservation status.

## 5.2 Data and conservation status of species

Data on the status and distribution of species have been provided by different sources and thus largely arise as fragmentary and unsystematically collected data, rarely the result of targeted monitoring programmes relating to individual species. Consequently, many status reports have been prepared on the basis of historical and/or recent data of an uncoordinated character. Nevertheless, mapping programmes for the species listed in Annex II of the Habitats Directive have been implemented for the purpose of drawing up this status report as described in section 2.1. The theoretical background for assessing the conservation status of the individual species is based on data relating to the total occurrence and distribution of the species in Denmark.

The data available have been subject to an overall evaluation and categorised as either satisfactory or insufficient. Both categories may include data sets of varying validity and applicability for the assessment of the conservation status of a species. Thus the category 'insufficient' may represent a situation ranging from an almost total lack of data to the availability of a wide set of data which may be of an early date and/or unsystematically collected, etc. In several cases there are no great qualitative differences in the background data in the inadequate part of the

category 'satisfactory' and the corresponding data in the better-quality part of the category 'insufficient'.

The data available have been estimated to be satisfactory for 30 species and insufficient for 49 species (Table 5.2.1). For the two priority species, houting and hermit beetle, and for butterflies, dragonflies and angiosperms the available background data have been judged to be completely or largely satisfactory whereas the background data on mammals, reptiles, common amphibians, fish, water beetles, whorl snails, mussels, pteridophytes, and mosses are considered to be entirely or largely insufficient.

For the 14 species in the 'favourable' conservation status category, the background data for 5 species are estimated to be satisfactory and for 9 species insufficient. The corresponding numbers for the 'unfavourable' category are 4 and 13. There may seem to be some inconsistency between these classifications and the assessment chart on the conservation status of species (Table 2.3.1) in so far as the species are only classified in these categories if documentation on the status and development of the species is available.

For species assessed to have a favourable conservation status, the background data may thus be insufficient, but if there are no indications whatsoever that the species is decreasing within its natural range in Denmark, the conservation status has been taken to be favourable, provided of course that it complies with the conditions stipulated. This applies for instance to several species of bats. Equally, there may be many indications that a species is decreasing even though the status and changes in abundance of

Table 5.2.1. Background data and conservation status of species under the Habitats Directive. \* Only species listed in both Annexes are included.

Annex	Background data		Conservation status					Total
	Satisfactory	Insufficient	Favourable	Uncertain	Unfavourable	Unknown	Disappeared	
II	6	12	3	1	4	4	6	18
II + IV*	12	10	1	9	7	3	2	22
II + V*		5			2	3		5
IV	12	15	10	6	3	3	5	27
V		7		6	1			7
Total	30	49	14	22	17	13	13	79

the species are not known in detail. The status of such a species has been judged unfavourable if the available data can be considered to be representative.

For the categories 'uncertain' and 'unknown' comprising 35 species, the data are considered to be insufficient for 24 species, including all the 13 species whose conservation status is unknown (cf. Table 5.2.1).

In this status report 14 species have been assessed to have a favourable conservation status, 22 are uncertain, 17 are unfavourable, and 13 are unknown. Thirteen species have, in all probability, disappeared from the Danish flora and fauna (cf. Table 5.2.1).

The overall conservation status of all the 45 species listed in Annex II is: Favourable 4, uncertain 10, unfavourable 13, unknown 10, and disappeared 8. For all the 49 species listed in Annex IV the overall conservation status is: Favourable 11, uncertain 15, unfavourable 10, unknown 6, and disappeared 7. Out of 22 species and 3 taxa listed in Annex V, 12 species have been as-

essed and the overall conservation status of the 12 species is: Uncertain 6, unfavourable 3, and unknown 3.

It should be emphasised that several of the species listed in Annex II can not either with certainty be characterised as native species in Denmark in recent centuries or they have at most been considered rare. This applies to 3 bat species Barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteini*, and Northern bat *Eptesicus nilssonii*, 1 butterfly species Large Copper butterfly *Lycaena dispar*, 1 dragonfly species Eastern White-faced Darter *Leucorrhinia albifrons*, 1 vascular plant species Lady's Slipper Orchid *Cypripedium calceolus* and 3 moss species Dichelyma moss *Dichelyma capillaceum*, Meesia moss *Meesia longiseta*, Roger's Bristle-moss *Orthotrichum rogeri*.

The 13 species which have apparently disappeared will not be further discussed here and are not expected to be included in the future monitoring programme unless the species should re-immigrate into Denmark and create self-reproducing populations.

## 6 References

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Included in the annual report is a list of the publications from the current year.

# Faglige rapporter fra DMU/NERI Technical Reports

## 2000

- Nr. 338: NEXT I 1998-2003 Halogenerede Hydrocarboner. Samlet rapport over 3 præstationsprøvningsrunder . Af Nyeland, B. & Kvamm, B.L. 87 s., 150,00 kr.
- Nr. 339: Phthalates and Nonylphenols in Roskilde Fjord. A Field Study and Mathematical Modelling of Transport and Fate in Water and Sediment. The Aquatic Environment. By Vikelsøe, J., Fauser, P., Sørensen, P.B. & Carlsen, L. (in press)
- Nr. 340: Afstrømningsforhold i danske vandløb. Af Ovesen, N.B. et al. 238 s., 225,00 kr.
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- Nr. 343: Vildtudbyttet i Danmark i jagtsæsonen 1999/2000. Af Asferg, T. 31 s., 40,00 kr.

## 2001

- Nr. 344: En model for godstransportens udvikling. Af Kveiborg, O. 246 s., 130,00 kr.
- Nr. 345: Important summer concentrations of seabirds in West Greenland. An input to oil spill sensitivity mapping. By Boertmann, D. & Mosbech, A. (elektronisk)
- Nr. 346: The Greenland Ramsar sites. A status report. By Egevang, C. & Boertmann, D. 96 pp., 100,00 DKK.
- Nr. 347: Nationale og internationale miljøindikatorsystemer. Metodeovervejelser. Af Christensen, N. & Møller, F. 161 s., 150,00 kr.
- Nr. 348: Adfærdsmodel for persontrafik. Modelkoncept. ALTRANS. Af Rich, J.H. & Christensen, L. 153 s., 100,00 kr.
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- Nr. 350: Overvågning af fugle, sæler og planter 1999-2000 med resultater fra feltstationerne. Af Laursen, K. (red.). 103 s., 80,00 kr.
- Nr. 351: PSSD – Planning System for Sustainable Development. A Methodical Report. By Hansen, H.S (ed.) (in press)
- Nr. 352: Naturkvalitet på stenrev. Hvilke indikatorer kan vi bruge? Af Dahl, K. et al. 128 s., 140,00 kr.
- Nr. 353: Ammoniakemission fra landbruget siden midten af 80'erne. Af Andersen, J.M. et al. 45 s., 50,00 kr.
- Nr. 354: Phthalates, Nonylphenols and LAS in Roskilde Wastewater Treatment Plant. Fate Modelling Based on Measured Concentrations in Wastewater and Sludge. By Fauser, P. et al. 103 pp., 75,00 DKK.
- Nr. 355: Veststadil Fjord før og efter vandstandshævning. Af Søndergaard, M. et al. (elektronisk)
- Nr. 356: Landsdækkende optælling af vandfugle, vinteren 1999/2000. Af Pihl, S., Petersen, I.K., Hounisen, J.P. & Laubek, B. 46 s., 60,00 kr.
- Nr. 357: The Danish Air Quality Monitoring Programme. Annual report for 1999. By Kemp, K. & Palmgren, F. (electronic)
- Nr. 358: Partikelfiltre på tunge køretøjer i Danmark. Luftkvalitets- og sundhedsvurdering. Af Palmgren, F. et al. (Foreløbig elektronisk udgave)
- Nr. 359: Forekomst af "afvigende" isbjørne i Østgrønland. En interviewundersøgelse 1999. Af Dietz, R., Sonne-Hansen, C., Born, E.W., Sandell, H.T. & Sandell, B. (i trykken)
- Nr. 360: Theoretical Evaluation of the Sediment/Water Exchange Description in Generic Compartment Models (Simple Box). By Sørensen, P.B., Fauser, P., Carlsen, L. & Vikelsøe, J. 58 pp., 80,00 DKK.
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- Nr. 363: Regulering af jagt på vandfugle i kystzonen. Forsøg med døgnregulering i Østvendssyssel. Af Bregnballe, T. et al. (i trykken)
- Nr. 364: Vingeindsamling fra jagtsæsonen 2000/2001 i Danmark. Wing Survey from the 2000/2001 Hunting Season in Denmark. Af Clausager, I. (i trykken)

The report presents the very first assessment of the conservation status of Danish natural habitat types and species covered by the EEC Habitats Directive. The Danish Forest and Nature Agency, the National Environmental Research Institute and the Danish county authorities have initiated a co-operative programme to provide and compile the data necessary to assess the conservation status of the natural habitat types and species concerned.

The report focuses on a total of 13 priority natural habitat types listed in Annex I and 79 species listed in Annexes II, IV and V of the Habitats Directive. The preliminary conservation status for each of these are assessed as 'favourable' for 2 habitat types and 14 species, 'uncertain' for 6 habitat types and 22 species, 'unfavourable' for 3 habitat types and 17 species and 'unknown' for 2 habitat types and 13 species. A further thirteen species are considered to have probably disappeared from Denmark. The information and data available are, however, inadequate to make a final assessment of the conservation status for the majority of the habitat types and species concerned

The results presented in this report should be considered as a preliminary status report in relation to the Habitats Directive and not as an assessment of the current status of overall nature conservation interests in Denmark.