



Strasbourg, 28 August 2007
[files08e_2007.doc]

T-PVS/Files (2007) 8

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

27th meeting
Strasbourg, 26-29 November 2007

**Update on implementation of Recommendation No. 96 (2002) on
conservation of natural habitats and wildlife, specially birds, in
afforestation of lowland in Iceland**

REPORT BY THE NGO

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SUMMARY

In view of the failure of the Government of Iceland during the past five years to ensure the satisfactory implementation of any of the seven points of Recommendation 96 (2002) on conservation of natural habitats and wildlife, specially birds, in afforestation of lowland in Iceland

The Standing Committee is urged to:

- open a case file
- recommend to the Government of Iceland to undertake the actions suggested in the conclusion in section 5 of this document.

1. BACKGROUND

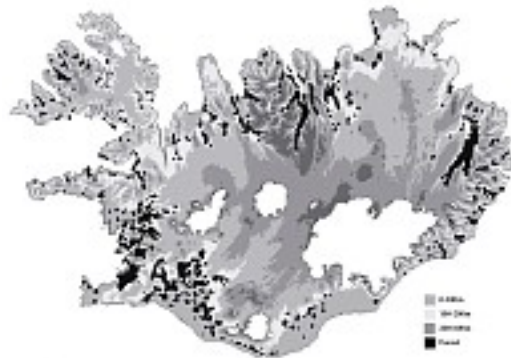
In 2001, BirdLife International submitted a complaint (T-PVS (2001) 59) regarding the threat posed to internationally important populations of birds by the plan of the Icelandic Government to encourage the afforestation of a substantial proportion of the Icelandic lowlands. After a Bern Convention on-the-spot appraisal visit in summer 2002, resulting in the report T-PVS/Files (2002) 3 by consultant Michael Usher, Recommendation 96 (2002) was adopted by the Standing Committee.

2. THE THREAT

The government of Iceland envisages much afforestation in the future, including to offset the CO₂ emissions from the increasing aluminium smelter industry and other heavy industry.¹ Afforestation in Iceland is largely state subsidised. The plan of the Icelandic government and state forestry bodies, since 1990, is to plant up 5% of the lowlands with 2000 km² of forest up to the 400 m contour line by the year 2040 (Act of Parliament no. no.95/2006 <http://althingi.is>,² which fails to mention nature conservation). This compares to only 1200 km² of natural birch *Betula pubescens* forest and scrub, covering only 1.2% of the country, mostly as shrub growth³.

The grave threat to birds is the fact that the vast majority of the planting is and will be in lowland Iceland below an altitude of 100 m. Large scale afforestation is unlikely to cover a significant area above the 200 m contour⁴ as these are largely uninhabited areas with harsh climate and mountainous terrain. Only 3674 km² of the country lies between the 100-200 m.a.s.l and it is mostly unsuitable for forestry, comprising predominantly steep mountainsides rising from the lowland, vegetated, inhabited fjords and valleys to the tundra heath land below the uninhabited desert of the interior highland Plateau, .

Figure 1: Existing forestry plantations in Iceland in relation to the 100 m and 200 m contours.



¹ In February 2007 a law for the period 2008-2012 was passed directed at heavy industry companies that emit more than 30 000 tons of CO₂. There are currently four companies in Iceland that fall into this category. In accordance with the Kyoto Protocol, they must compensate for the excess production of CO₂ for example by investing in forestry or soil and vegetation protection measures. This is regulated through an obligation for the companies to obtain permits from a special committee of the Ministries of Industry, Finance and Environment.

² This law supercedes 32/1991 and no. 93/1997

³ Iceland is 102 700 km², vegetation cover is 23 805 km²

⁴ According to the National Land Survey of Iceland the area between the contour lines is as follows: 201-400m covers 18 400 km², 401-600 m covers 22 000 km², 601 m and above covers 37 000 km². 70% of Iceland is above the 300 m contour.

The area below 100m comprises only 17 000 km² of mostly vegetated land but also with sand deserts and lava fields in the south east and south west peninsula. The majority of Iceland's internationally important populations of breeding waders breed in the lowland vegetated areas. Most of the current forest plantations are on the three major vegetation types used by the waders; grassland, heath land and reclaimed or partially drained marsh and bog areas.

Since Recommendation 96 was adopted in 2002, the rate of afforestation of Iceland's lowlands has rapidly accelerated. In 2005, 5.7 million trees were planted compared to one million trees in 1990. By 2005 a total of 279 km²⁵ of Iceland was covered in plantations mostly of imported, non-native species, especially spruce *Abies* sp., larch *Larix* sp. and pine *Pinus* sp., although in plantations for recreation much native birch is also planted. The vast majority of this afforestation is below the 100 m contour line⁶. Some 213 km² of this was planted since 1990.

To fulfil the Government's planting objectives by 2040, the rate of tree planting will need to increase by about threefold; the area planted in 2004 was 17.4 km² and it would need to increase to about 47 km² per/year⁷.

The afforestation of Iceland is being undertaken by:

- the five Regional Forest Programs "Landshluta skógar" which have conducted most of the afforestation since the 1997 law for regional forests (97-100% of these forests are state subsidised); they are small institutions with offices in each of the five areas - south, east, north, and north-west, and Heradsskogar involving farmers and landowners
- the Icelandic Forestry Association "Skógræktarfélag Íslands" (an NGO for many small regional tree planting societies) which undertakes 19% of afforestation, on behalf of cities, towns and communities that largely provide the funding
- the Iceland Forest Service "Skógrækt ríkisins" of the Ministry of Agriculture, is the third main forestry body in Iceland which now only undertakes 2.5% of the planting having become mainly a research institution and working closely with the regional forest programs but also managing its previously planted forests
- private landowners (6.5%)
- Icelandic Soil Conservation Service (3%).⁸

3. THE POTENTIAL IMPACT ON BIRDS

Iceland has one of the two or three most important breeding wader populations in Europe (see Annex). It has the highest density of breeding waders in Europe (along with the Netherlands)⁹. For nine wader species, it has the most important (six species) or second most important (three species) national breeding population in Europe. These represent from 6-52% of the global population and 16-69% of the European population. (Russia is the only country of greatest importance for more wader species)¹⁰.

If one considers subspecies, Iceland has 45-100% of seven species: Black-Tailed Godwit *Limosa limosa islandica* (100%), Redshank *Tringa totanus robusta* (100%), Purple sandpiper *Calidris maritima littoralis* (100%), Whimbrel *Numenius phaeopus islandicus* (99%), Snipe *Gallinago gallinago faroensis* (95%), Dunlin *Calidris alpina schinzii* (85%), Ringed plover *Charadrius hiaticula*

⁵ It should be noted that a substantially higher figure of 390 km² is given by B. Þ. Kjartansson & B. Traustason, 2006. Landnotkun skógræktar á Íslandi-einvaldur samanburður landupplýsinga. Skógræktarritið 1, 81-87,

⁶ Icelandic Forest Service: skogur.is,

B. Þ. Kjartansson & B. Traustason, 2006. Landnotkun skógræktar á Íslandi-einvaldur samanburður landupplýsinga. Skógræktarritið 1, 81-87,

A. Snorrason & B. Þ. Kjartansson, 2004. Íslensk skógarúttekt-Verkefni um landsúttekt á skóglendum á Íslandi-kyning og fyrstu niðurstöður. Skógræktarritið 2, 101 -108

⁷ skogur.is.

⁸ Einar Gunnarsson 2006. Skógræktarárið 2005. Skógræktarritið (2), 94-99. skogur.is

⁹ O. Thorup 2005 *Breeding waders in Europe 2000*. Wader Study Group.

¹⁰ BirdLife International 2004 *Birds in Europe: population estimates, trends and conservation status*. Cambridge, UK: BirdLife International. (BirdLife Conservation Series No. 12).

psammodytes (45-52%) plus Golden plover *Pluvialis apricaria* (42-54%) and Red-necked Phalarope *Phalaropus lobatus* (23-35%).

Four of these species have an unfavourable conservation status in Europe (Black-tailed Godwit is globally near threatened, Dunlin is depleted and Snipe and Redshank are declining). The population trends of the Icelandic wader population are scarcely known but it seems that Red-Necked Phalarope and Dunlin have been declining (see Annex). In addition, the European Ringed Plover populations to which the Icelandic birds contribute are in decline.¹¹

It has been estimated that 4-5 million waders leave Iceland in autumn each year¹². These birds migrate through, and winter in, many European and North African countries such as Britain, Ireland, Portugal, France, Spain, The Netherlands, Mauritania, Senegal, Guinea Bissau, Guinea Conacri, The Gambia and probably in many other West-African countries. Afforestation in Iceland is likely to have a particular impact on the non-breeding bird populations of the UK and Ireland because, of the birds listed on the Annex as being susceptible to afforestation,

- all of the Icelandic greylag geese and most of the black-tailed godwits winter in the UK and Ireland, and most of the wintering greylag geese and black-tailed godwit of the British Isles come from Iceland
- most of Iceland's golden plovers, snipes and redshanks winter in the UK and Ireland
- the UK hosts the following Icelandic birds on passage: ringed plover, dunlin, whimbrel

For all species but the purple sandpiper, from a third to 97% of the national population breed below 200 m a s l. Most breeding waders in Iceland avoid woodland and select open areas, at least five species preferring wetland habitats¹³, the exception being snipe which uses open forest, mostly birch, as well as marsh and meadowlands.

Where the plantations are on open, level or gently sloping vegetated areas below 100 m, as is generally the case so far, they may destroy the habitat of breeding waders and meadow birds as well as Ptarmigans *Lagopus mutus* and the hunting grounds of raptor species such as Gyr Falcon. In addition, the afforestation can lead to secondary effects, such as increased predation levels.

Thus, Iceland's important breeding wader populations are likely to be threatened if the afforestation develops without taking care to avoid the most sensitive areas for birds, such as marshland, river plains and dwarf-birch bogs. New plantings should preferentially take place on habitats avoided by breeding waders, such as on slopes and hillsides.¹⁴

As well as habitats for breeding birds, the afforestation is likely to destroy the habitat for internationally important populations of birds on passage. For example, the entire population of the declining Greenland White-fronted Goose *Anser albifrons flavirostris* stages in lowland areas of Iceland in spring and autumn before continuing to wintering areas in the British Isles. The marsh vegetation, which is an important food source for them, has already declined greatly due to drainage. Afforestation rather than restoration of the semi-drained marshes in the south and west could further decrease available habitat for the species.

Of Iceland's 61 Important Bird Areas, as many as 23 could be threatened by the proposed afforestation. It is already directly damaging at least two Important Bird Areas, Hrísey (north Iceland) and Úthérð (east Iceland; Einarsson 2000, Halldór W. Stefánsson pers. com.).

¹¹ Wetlands International 2006 *Waterbird population estimate – fourth edition*. Wetlands International, Wageningen, The Netherlands

¹² Gudmundsson, G. A. 1998 Importance of wetlands for birds. In: Olafsson, J. S. (Ed) *Wetlands, Conservation and Utilisation*. University of Iceland Press, Reykjavik (In Icelandic with an English summary).

¹³ Gunnarsson, T. G. et al 2006 Large-scale habitat associations of birds in lowland Iceland: implications for conservation. *Biological conservation* 128: 265-275.

¹⁴ Gunnarsson, T. G. et al 2006 Large-scale habitat associations of birds in lowland Iceland: implications for conservation. *Biological conservation* 128: 265-275.

4. IMPLEMENTATION OF RECOMMENDATION 96 (2002)

In the five years since its adoption, neither the Icelandic government nor its institutions have fulfilled any of the seven points of the Recommendation. There have only been a few positive signs of any progress towards implementation, for example through some improvements in forestry practices within the forestry sector.

1. Carry out an overall environmental impact assessment of afforestation policy so as to be able to evaluate how present and future afforestation of lowlands may affect habitats and species protected under the convention;

- There has, as yet, been negligible benefit from the June 2006 law on Strategic Environmental Assessment (in line with Directive 2001/42 in accordance with the EES agreement of European non EU states with the EU 2001/42/EU).

It has so far not been used for any forestry plans; the National Planning Agency "Skipulagsstofnun", in autumn 2005 ruled against the need for an EIA for the one plan for large scale afforestation (Norðurlandsskógar Forestry in northern Iceland), that has so far been presented to it. This rejection was against the advice of the Icelandic Institute of Natural History and the Environment and Food Agency, from whom as an example, there was a complaint that no maps were presented with the plan for the 650 km² of forest plantations and 10 000 km of hedges and tree shelters.

However, some progress has been made:

- The National Planning Agency has encouraged forestry authorities to apply procedures defined in the Planning and Building Act to afforestation programmes, including to deal with the environmental impacts of such programmes and set rules on consultation and information requirements. However, preparation for an afforestation plan in Northern Iceland, based on procedures recommended in the Planning and Building Act, has been ongoing for some years, and the final planning proposal, expected to be presented for approval to the Minister of Environment in 2003, has still not been presented.
- Some of the forestry bodies have developed their own guidelines to follow when afforestation of new areas are planned. Each of the regional forestry programs has a board and undertakes some form of EIA but the information is kept private to the relevant forestry board and is not made publicly available. There is no legal obligation for them to follow the afforestation guidelines mentioned in the point below (ie no regulation from the Ministry of Agriculture which enforces it).
- Prompted by this Bern case, the Icelandic Forestry Association formed a working group (which last met once in 2006) to make recommendations for forestry practices. It comprises representatives of the Icelandic Forestry Service, BirdLife Iceland, Archeological Institute of Iceland, Icelandic Institute of Natural History, Icelandic Environmental Institute, National Association for the Protection of the Icelandic Environment (Landvernd) and three regional forest programs (Landsamtök Skógarbænda, Norðurlandsskógar, Héraðsskógar, Austurlandsskógar, Suðurlandsskógar, Vesturlandsskógar, Skjólsskógar á Vestfjörðum). The resulting 'afforestation guide' was published in 2004 on the internet (<http://www.skog.is/leidbeiningar.htm>) and may subsequently be published as a book. It is designed particularly to coordinate and guide forestry activities and is logical and simple enough to be followed by everyone involved in forestry projects.
- A co-operative research project, 'the ICEWOODS project', run by the Icelandic Institute of Natural History and the Icelandic Forestry Service, has evaluated the effects of forestry on biodiversity; mainly vegetation, birds and some invertebrates. Fieldwork finished in 2006. The bird part of the progress report is now available and some of the other parts but much remains to be published.

- A complete survey of all planted and proposed woods is being carried out. This monitoring project will make it easier to assess the extent to which planting has occurred on important areas for biodiversity. It will also contribute to the EIA of the forestry projects¹⁵.

2. Map, as a matter of urgency, areas of high biological value in Iceland so that such information may be used both for guidance to the planning process and to identify ‘Areas of Special Conservation Interest’ referred to in Recommendation No. 16 (1989) of the Standing Committee;

An important step towards implementation of this point is the new Nature Conservation Plan, a consultation draft of which was published by the Icelandic Environment and Food Agency in 2003. The Icelandic Institute of Natural History is also involved in this work. Completion of this work is urgently needed, especially to assist in assessment of large scale development plans affecting natural places.)

3. Support and encourage afforestation giving priority to areas known to have reduced biodiversity value, such as eroded areas or heavily used farmland, avoiding as much as possible areas of bird interest or partially drained wetlands which might be easily restored to their former condition;

The statement from the Icelandic Forestry Service and Icelandic Forestry Association about not draining undisturbed wetlands for afforestation is of much importance. However, it omits the lowland wetlands (marshlands and peatlands) drained since 1941, and especially during the 1950s to 1970s, which amount to about 4000 km² (about 4% of Iceland). These drained areas are also very important breeding habitat for many wader species and most are potentially under threat of afforestation.

Although the drainage has mostly stopped now, recent scientific research has shown that 7.2 million tons of CO₂ emissions (twice that produced by the human population of Iceland and its industry) continue to be released per year from the drained areas and the binding of CO₂ stops in drained marsh¹⁶. Reclaiming marshland will therefore halt these emissions and result in the recommencing of binding of CO₂ in the marshland soil¹⁷.

Some of these areas have been gradually returning towards their wetter natural state.¹⁸ A committee for restoration of wetlands operated during 1996-2006, comprising the Ministry of Agriculture, institutions on nature studies and BirdLife Iceland, and some small areas of marshland and little lakes and ponds were reclaimed¹⁹.

4. Introduce as a matter of urgency a system of statutory consultation between the Forest, Nature and Planning Agencies for new afforestation schemes up to 200 ha, promoting co-ordination and synergy among the different departments concerned; involve the local authorities and the civil societies in the consultation process in the most appropriate manner; and establish in that framework an appeal mechanism to solve discrepancies;

There has, as yet, been negligible benefit from national law 106 /2000 on Environmental Impact Assessment which states that all proposed plantations larger than 200 ha shall undergo EIA evaluation. This has never been used for forestry - not a single plantation has undergone a formal evaluation in accordance with the law despite the hundreds of forestry plantations existing or planned. Only about five cases have been considered by the Icelandic Planning Agency as candidates for EIA (eg Silfrastaðir in Northern Iceland 450 ha in 2002 and Tungufell in Western Iceland 400 ha in 2003). It has ruled that there was “no need for evaluation with EIA or SEA”.

¹⁵ (see <http://nytjaland.is/landbunadur/wgrala.nsf/key2/nytjaland.html>)

¹⁶ Guðmundsson, J & Óskarsson, H 2005 Landbúnaður og losun gróðurhúsalofttegunda. Fræðapung pp 32-37

¹⁷ Óskarsson, H. 1998. Icelandic Peatlands: Effects of draining on trace gas release. Doctoral dissertation. University of Georgia, Athens, Georgia, USA.

¹⁸ Thorleifsson, E O 1998 Effects of drainage on wetlandbirds in South Iceland, 173-183 Íslensk Votlendi.ed. Jon S. Olafsson. Háskólaútgáfan .

¹⁹ Daniel Bergmann.ed. 1996. Endurheimt Votlendis. Landbúnaðarráðuneytið. See also www.rala.is/votlendi.

A loophole in the EIA law allows two plantations of 199 ha immediately adjacent to each other to count as two areas if they are divided by a road or a fence. Two or three such extensive plantations have been permitted.

Furthermore, the law states that an EIA is only necessary if the area is not included in the land use plan of the area of jurisdiction. This renders almost all EIA unnecessary as virtually all of Iceland's land area has undergone some kind of formal regional planning, published by the regional authorities and approved by the National Planning Agency. However, there is a regulation that all new forest plots must be announced to the National Planning Agency. In the view of the Planning and Building Tribunal, afforestation projects are also subject to development consents if projects are in protected areas.

5. Consider establishing a networking of environmental data that would be suitable for Icelandic data providers and users;

When this recommendation was adopted, the UK offered to support Iceland in establishing a networking of environmental data that would be suitable for Icelandic data providers and users, as per the recommendation.

6. Draft and implement a National Strategy for biological diversity in Iceland; and

7. Designate areas for inclusion in the Conventions Emerald Network of Areas of Special Conservation Interest."

Points 6 and 7 are partly covered by the Nature conservation plan and the work on habitat types in Iceland. There has been some discussion on the Emerald Network between the Icelandic Institute of Natural History and the Icelandic Environment and Food Agency. They have also been discussing the list of areas that could be protected through listing on the nature protection register.²⁰

5. CONCLUSION

Implementation of Recommendation No. 96 is inevitably a long term project given the many stakeholders involved. However, progress in the five years since adoption of the recommendation has been disappointing. The following particular action is needed by the Government of Iceland:

1. Ensure that the June 2006 national law on Strategic Environmental Assessment is employed without delay to avoid adverse impacts of national afforestation policies and practices on Iceland's internationally important breeding wader populations and other important biodiversity. To assist this, ensure the completion and dissemination of results (including in English) within a year of the ICEWOODS project and the national survey of all planted and proposed plantations.
2. Ensure the completion and dissemination (including in English), within a year, of the Nature Conservation Plan.
3. Ensure production, within two years, of a national, or a complete set of regional indicative forestry, strategies, which clearly map area where forestry can be encouraged and areas where it should not be permitted, including on biodiversity conservation grounds. Areas where afforestation should be avoided include all lowland wetlands, including those that have previously been drained but still provide, or have the potential to be restored to provide, suitable wader breeding habitat.
4. Revise the EIA law (106/2000) to stipulate that any two plantations must be divided by an area at least twice the area of the bigger plantation and to remove the proviso that EIA is only necessary if the area is not included in the land use plan of the area of jurisdiction.
5. In line with the polluter-pays principle, ensure that the Icelandic Forestry Service (IFS) is in the forefront of the EIA of the regional forestry projects, and that the expenses are covered by the Ministry of Agriculture or Alþingi (ie Icelandic Parliament).

²⁰ The Environment and Food Agency of Iceland 2002 The nature protection register. *Náttúruminjaskrá 7. útgáfa.*, See: www.ust.is.

6. Put in place a system that ensures the Afforestation Guide is appropriately followed in all planting projects, for example by making subsidy dependent on compliance with the Guidelines.
7. Ensure that no planting takes place and no grants are made available to forestry projects in areas that have special nature conservation value.
8. Undertake public education to transmit the message of the "afforestation guide".
9. Discourage planting on land that could be restored to wetlands, providing state funding for restoration of wetlands as an alternative to planting grants.
10. The recommended establishment of a network of environmental data that would be suitable for Icelandic data providers and users should be developed by the Icelandic Environment and Food Agency or Icelandic Institute of Natural History. The Icelandic Forest Service and other land users should then have to take it into account during the development of relevant land use plans.
11. Iceland needs to develop a sound survey and monitoring programme for breeding waders, given its responsibility for such an outstandingly important proportion of Europe's waders. Together with Russia, Iceland is the country that most urgently needs to improve the precision of its data on breeding wader populations and trends²¹. It is also important to identify with some accuracy the most important breeding areas for the different wader species.
12. Agree within a year, the list of areas that should be protected on the nature protection register, including the list of sites for the Emerald Network.
13. Takes account of relevant experience from other countries, such as the UK, on environmental impact assessments of afforestation and on repairing damage caused by subsidised afforestation;
14. Reports to the next meeting of the Standing Committee on progress made in implementing the Recommendations.

²¹ O Thorup 2005 *Breeding waders in Europe 2000*. Wader Study Group.

ANNEX

Internationally important populations of breeding birds in Iceland that could suffer from afforestation of land under 200m (Only includes species for which Iceland is one of the top five European countries or with at least 1% of the European population) Data from BirdLife International 2004 *Birds in Europe: population estimates, trends and conservation status*. Cambridge, UK: BirdLife International. (BirdLife Conservation Series No. 12).

| Species | SPEC ²² | Icelandic popn. size (pairs) | Icelandic popn. trend ²³ | European population estimate | % European population breeding in Iceland | Potential impact of unwise sited forestry (estimated by BirdLife Iceland) | Icelandic population as % of European population including Greenland | Icelandic population as % of Global population | % of Icelandic population below 200 m a.s.l |
|--|--------------------|------------------------------|-------------------------------------|------------------------------|---|---|--|--|---|
| <i>Anser anser</i> Greylag goose | Sec | 20,000-30,000 | -0-19% | 120,000-190,000 | 16-17 | L | 1 st | | |
| <i>Falco rusticolus</i> Gyrfalcon | 3, Rare | 300-400 | F | 1,300-2,300 | 17-23 | L | 3 rd (GL 1 st) | | |
| <i>Lagopus mutus</i> Rock Ptarmigan | Sec | 50,000-200,000 | F >80 | 430,000-1,400,000 | 12-14 | L-M | 3 rd (GL 1 st) | | |
| <i>Charadrius hiaticula</i> Ringed plover | Sec | 30,000-50,000 | ? | 120,000-220,000 | 23-25 45-52% of psammodyroma ssp | L | 2 nd (GL 1 st) | 32 | 33 |
| <i>Ploverialis apricaria</i> Golden plover | Sec | 250,000-310,000 | ? | 460,000-740,000 | 42-54 | M-H | 1 st | 52 | 32 |
| <i>Calidris maritima</i> Purple sandpiper | Sec | 10,000-30,000 | ? | 28,000-75,000 | 36-40 100% ssp <i>litroralis</i> | L | 1 st | 46 | 19 |
| Dunlin <i>Calidris alpina</i> | 3, Depl | 200,000-300,000 | ²⁴ | 300,000-570,000 | 53-67% 85% <i>schinzii</i> ssp | M-H | 1 st | 16 | 49 |
| <i>Gallinago gallinago</i> Snipe | 3, Dec | 180,000-300,000 | ? | 930,000-1,900,000 | 16-19% 95% ssp <i>faroensis</i> | M-H | 2 nd | 6 | 62 |
| <i>Limosa limosa</i> Black-tailed godwit | 1, NT | 15,000-25,000 | +0-19 | 99,000-140,000 | 15-18% (100% ssp <i>islandica</i>) | L-M | 3 rd (1 st for <i>islandica</i>) ^b | 10 | 97 |
| <i>Numenius phaeopus</i> Whimbrel | Sec | 100,000-250,000 | ? | 160,000-360,000 | 63-69% 99% of ssp <i>islandicus</i> | M-H | 1 st | 40 | 75 |

²² SPEC = Species of European Conservation Concern: species in category 2 and 3 have an unfavourable conservation status in Europe (2 = species whose global populations are concentrated in Europe; 3 = species whose global populations are not (BirdLife International 2004))

²³ - = decreasing, F = fluctuating, + = increasing, 0 = stable, ? = unknown

²⁴ Gunnarsson, T, G et al 2006 Large-scale habitat associations of birds in lowland Iceland: implications for conservation. *Biological conservation* 128: 265-275.

| | | | | | | | | | |
|--|---------|----------------|-----------------|-----------------|--|-----|-----------------|----|----|
| <i>Tringa fl etanus</i> Redshank | 2, DecI | 50,000-140,000 | + ²⁵ | 280,000-610,000 | 18-23% (100% of <i>robusta</i> ssp with Faroes and Scotland) | M-H | 1 st | 19 | 97 |
| <i>Phalaropus lobatus</i> Red-necked phalarope | Sec | 30,000-50,000 | - | 85,000-220,000 | 23-35% | L | 2 nd | 6 | 55 |
| <i>Stercorarius parasiticus</i> Arctic skua | Sec | 5000-10,000 | ? | 40,000-140,000 | 7-13% | L-M | 3 rd | | |

²⁵ Gunnarsson, T G et al 2006 Large-scale habitat associations of birds in lowland Iceland: implications for conservation. *Biological conservation* 128: 265-275.