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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

36th meeting
Strasbourg, 15-18 November 2016

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On-the-spot appraisal

Follow-up of the Recommendation No. 96 (2002) on conservation of natural habitats and wildlife, especially birds, in afforestation of lowland in Iceland

- REPORT OF THE JOINT AEWA/BERN CONVENTION MISSION -

(23-27 May 2016)

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The presentation of the material in this document is slightly different to that of the AEWA version, which is available on the AEWA website under the following link: http://www.unep-aewa.org/sites/default/files/uploads/activities/aewa_final_iceland_irp_report.pdf. This is due to the individual house style guides of both instruments. The content is, however, identical in both versions of the report.

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SUMMARY

Iceland is second only to Russia in its importance as a breeding ground for migratory waterbirds in the African-Eurasian region. Most of the species concerned are vulnerable to possible impacts from afforestation especially in the Icelandic lowlands. Migration links mean that these impacts are also likely to be felt in countries that share the same flyway, potentially compromising conservation efforts in those countries. The impact of afforestation on waterbirds in Iceland has been the focus of international concern since 2001, primarily in the context of the Bern Convention and then also in the context of the African-Eurasian Waterbird Agreement (AEWA), following Iceland's accession to that Agreement in 2013.

A joint advisory mission on behalf of the Convention and the Agreement took place in May 2016, hosted by the Icelandic Ministry for the Environment and Natural Resources. Its aims included assessing the current implications of forestry policy and practices for waterbirds and wetlands, and reviewing the progress made so far in implementing a formal Recommendation (No. 96) addressed to Iceland by the Convention's Standing Committee following a previous mission in 2002.

This report reviews the status of relevant bird species and the current motivations and controls applying to forestry developments in Iceland. Prior to human settlement the country was reputed to have up to 40% tree cover, but this has dropped to no more than 2% today. Provision of wood-fuel for industry, keeping people working on the land and landscape amenity are among the policy drivers, as are climate mitigation and ecosystem restoration in some cases. Public subsidies are available for private planting (which accounts for 70% of the total), and Parliament has set a target for eventual afforestation of 5% of the lowlands.

Very little guiding of the location of afforestation takes place at the national level, and the existing systems for control and support are predominantly reactive, with the initiative for the location of planting lying usually with individual landowners. Some contribution to afforestation targets is made by planting in areas of low biodiversity value (for example unvegetated land).

Available safeguards take the form of:

(i) a requirement for conformity with municipal plans;

(ii) avoidance of protected areas;

(iii) a degree of general protection for certain habitat types;

(iii) environmental impact assessment (EIA) procedures; and

(iv) guidance and advice on good practice.

Sections of this report review each of these in turn.

The effectiveness of the safeguards appears to be limited by the extent to which they are applied and enforced. Completion of a protected area network has been subject to prolonged delays, although new survey information from a project known as "Natura Iceland" should now allow faster progress. There are doubts about the ability of current arrangements to give effective protection to partially modified wetlands and to safeguard against indirect effects. The EIA system has been largely ineffective, although some afforestation projects have been through a screening process, with the result that it was decided that a full EIA was not necessary. The screening process involves several agencies. EIA has not yet been applied to any forestry project; nor has the system for Strategic Environmental Assessment (SEA) yet been applied as intended to regional afforestation programmes or to municipal plans.

Stakeholders on all sides consulted by the Mission appear generally to accept that a target of afforesting 5% of the lowlands could in principle be achieved without conflicting with important nature conservation interests. The issue is therefore not simply one of the overall scale of planting, but of an appropriate choice of locations. A strategic and proactive approach to forest development is advocated for the future. There is a clear need to develop a national "indicative forestry strategy" based on improved scientific evidence about habitat and species distributions and supported by

effective guidance and advice. Experience with such an approach has proved positive in other countries.

Recommendations made in this report cover the following key topics:

- Short-term priorities

- Producing an action schedule
- Launching an implementation support project
- Completing the Emerald Network in Iceland
- Implementing a Strategic Environmental Assessment of forestry
- Developing a national indicative forestry strategy in the short term for full implementation over the longer term (see below).
- Improving the monitoring of waterbirds and their habitats

- Medium-term priorities

- Screening for Environmental Impact Assessments
- Using positive opportunities associated with planting plans
- Improving cross-sectoral coordination
- Updating and implementing Iceland's NBSAP

- Longer-term priorities

- Confirming priorities for research
- Updating good practice guidance
- Exploring options for introducing positive incentives
- Implementing fully a national indicative forestry strategy

Good progress on many of these issues is already apparent from the evidence presented in this report, and the people and organisations concerned are to be commended on this. There are, however, still significant areas of weakness, and in the Mission's view the overall pace of progress remains slower than it should be. Until all necessary changes to systems and practices are completed, a risk of damage to waterbird populations persists.

It is nonetheless a firm conclusion of this Mission (and a view shared by those consulted on all sides) that solutions to the problems identified are eminently achievable, given sufficient political and administrative will. Taken together, and if acted on promptly, the suggestions made in this report provide an important opportunity to be the basis of a fully effective implementation of Bern and AEWA's requirements as far as forestry and waterbirds is concerned. This could mark a fresh start; and given all the lessons learned along the way, Iceland could acquire a position of positive international leadership on these issues.

1. RECOMMENDATIONS FROM THE MISSION

Each of the recommendations arising from the Mission is shown in context in the section of the report where it arises, but for convenience all of them are also grouped together here in categories of relative urgency. There are thirteen in total. All of these recommendations are addressed in the first instance to the Ministry for the Environment and Natural Resources, and on receipt the Ministry is invited to allocate more precise responsibilities for their implementation, as suggested in Recommendation 1.

Short-term priorities (= by the end of 2017)

Produce an action schedule

Recommendation 1: Following the issuance of the recommendations by the 36th meeting of the Bern Convention Standing Committee (15-18 November 2016) and by the 12th meeting of the AEWA

Standing Committee (31 January - 1 February 2017), develop a schedule and clear programme of work to implement the recommendations in this report. This should include details (for each one) of the lead person responsible, along with the timetable (with key milestones where applicable) and the means by which progress will be monitored and evidenced. These should be submitted to the respective Standing Committees through the AEWA and Bern Convention Secretariats by 30 April 2017.

It is hoped that acceptance by the Bern Standing Committee will signify that the schedule and proposed programme of work supersedes the Committee's Recommendation No. 96 of 2002. Progress will be reviewed by the Standing Committees of the Convention and the Agreement regularly thereafter. *[See section 11]*.

Launch an implementation support project

Recommendation 2: Finalise and activate as soon as possible the proposed contract between the Environment Ministry and IINH for a project supporting the implementation of AEWA; share details of the contract as soon as possible with the Secretariats of the Agreement and the Convention; consider the scope for involving external facilitation; and include details of an appropriate scheme for monitoring, evaluating and communicating the project's outcomes. *[See section 11]*.

Complete the Emerald Network in Iceland

Recommendation 3: Accelerate significantly Iceland's work towards its contribution to the international Emerald Network of sites so this can be completed by the end of 2017. Full application of legal protection measures at the national level may need to follow later in some cases, but all other methods should be used to safeguard the nominated sites against the negative impacts of afforestation in the meantime. *[See section 6]*.

Implement a Strategic Environmental Assessment of forestry

Recommendation 4: Implement urgently the provisions in the 2006 legislation for Strategic Environmental Assessment of regional afforestation programmes, and of those Municipal plans that cover areas of importance for waterbirds. Undertake the SEA of national forestry policy as originally recommended under the Bern Convention in 2002. *[See section 7]*.

Develop and implement a national indicative forestry strategy

Recommendation 5: Develop a national indicative forestry strategy in the short term, for full implementation over the longer term, which will:

(i) have the aim of meeting current afforestation targets while minimising negative effects on species or habitats of conservation importance (including both intact and modified wetlands);

(ii) use the most recent IINH maps and other data, including waterbird and wetland distribution data and the identified ASCIs, to identify zones of different degrees of presumption for and against planting;

(iii) be linked to the tiered system of decision-making set out in Iceland's Environmental Impact Assessment legislation; and

(iv) be guided by the conservation priorities and good practice standards referred to in the present report. *[See section 9]*.

Improve waterbird monitoring

Recommendation 6: As part of the IINH work to support the implementation of AEWA in Iceland (see Recommendation 2), develop and launch with effect from 2017 an appropriately-resourced country-wide scheme for long-term monitoring of waterbirds and their habitats, to:

(i) be capable *inter alia* of detecting changes caused by forestry; and

(ii) be used *inter alia* to help inform judgements about forestry development, by reference to the national and international context relating for example to bird distribution, habitat use and the status and trends of populations.

[See section 10].

Medium-term priorities (= by mid 2019)

Screen for Environmental Impact Assessments

Recommendation 7: Continue to give priority to the screening of afforestation proposals to determine the need for Environmental Impact Assessment according to case-specific judgements concerning the risk of effects on significant ecological values, rather than according to an arbitrary size threshold. Support these decisions with guidelines on factors likely to contribute to such effects (including those that may contribute indirectly, cumulatively and synergistically), and take a precautionary approach where there is uncertainty. Undertake "Class A" assessments under the EIA legislation wherever the circumstances warrant it. *[See section 7]*.

Use positive opportunities associated with planting plans

Recommendation 8: Make full use of the opportunity provided by the negotiation of individual planting agreements with landowners to provide advice and attach appropriate conditions to any grant aid, in order to safeguard (and where applicable enhance) important ecological values.

Develop effective collaboration between IINH and the Forestry Service, to provide an evidence based approach to support locational guidance for forest planting in future; and to build up relevant knowledge and capacities across government. *[See section 8]*.

Improve cross-sectoral coordination

Recommendation 9: Undertake a review of existing formalised systems for liaison, consultation and equitable input to decision-making in planning and management of forestry across the various departments and agencies responsible for forestry, planning, environmental protection and climate change policy; and define specific steps for improving coordination and the coherence of action. Address explicitly as part of this review the supportive role of NGOs, academic experts and civil society. *[See section 9]*.

Update and implement Iceland's NBSAP

Recommendation 10: Update Iceland's National Biodiversity Strategy and Action Plan, incorporating provisions relating to forestry policy and migratory waterbirds that reflect the recommendations made in the present report, and setting out a timeline for the future implementation of actions, accompanied by the necessary resourcing commitments. *[See section 9]*.

Longer-term priorities (= by the end of 2020)

Confirm priorities for research

Recommendation 11: Give priority in future environmental research projects and programmes to gathering better Iceland-specific evidence on the ecological mechanisms by which afforestation may impact upon birds and other biodiversity. This should give particular attention to effects that may be secondary, cumulative, synergistic, indirect or "edge"-related, as well as any complicating factors associated with climate change. Make the findings available to all concerned, and use the resulting knowledge fully in EIA screening processes, good practice guidance and advice on e.g. buffer distances, mitigation measures and options for habitat restoration. *[See section 10]*.

Update good practice guidance

Recommendation 12: Update and expand existing guidance on good environmental practice in afforestation, to include (for example):

(i) the Bern Convention's draft Code of Conduct on plantation forestry and invasive alien trees;

(ii) more advice (especially to help municipalities) on EIA and planning decisions;

(iii) updated information on the location of sensitive habitats and important sites;

(iv) avoidance of sites that support important bird populations (irrespective of habitat quality); and

(v) setting back plantation boundaries to provide buffer zones for reducing "edge effects" on wetlands.

[See section 8].

Explore options for introducing positive incentives

Recommendation 13: Given the need, as part of wider ecosystem management, to maintain and restore wetland values and services, as articulated in the Terms of Reference for the Mission; then explore the scope and possibilities for introducing State-funded "positive" financial incentives for land management in favour of nature conservation. This should be informed by research on trends in uptake of existing forms of support and on landowner perspectives concerning the future. *[See section 5]*.

2. INTRODUCTION AND PURPOSE OF THIS REPORT

Iceland is second only to Russia in its importance as a breeding ground for migratory waterbirds in the African-Eurasian region[1]. Most of the species concerned are vulnerable to possible impacts from afforestation especially in the Icelandic lowlands. This issue has been the focus of international attention since 2001, primarily through the Bern Convention, which was ratified by Iceland in 1993.

After contacts between the Bern Secretariat and the Icelandic authorities and consideration by the Convention's Standing Committee (its governing body)[2],[3],[4] the Committee mandated an "on the spot appraisal" which took place in 2002. This confirmed the potential for afforestation to damage the populations of some of the bird species listed in the Appendices of the Convention, but also noted that with careful planning, the most damaging impacts could either be avoided or mitigated[5].

Based on the 2002 appraisal report, the Committee adopted Recommendation No. 96 (2002), which set out seven areas for action in relation to: defining high value areas; assessing impacts; directing planting to less sensitive sites; improving consultation; improving data; and developing a national strategy[6].

BirdLife International submitted reports to the Bern Convention in 2007 and 2008[7,8,9], noting that some research work had advanced, but otherwise alleging that the Government had failed to

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[1] Details in Annex 4 below.

[2] Bern Convention Secretariat (2001a). Possible new file - Afforestation of lowland in Iceland: report by the Secretariat. Document T-PVS(2001)48 03 for 21st meeting of the Convention Standing Committee, Strasbourg, 26-30 November 2001.

[3] Bern Convention Secretariat (2001b). Possible new file - Afforestation of lowland in Iceland: report by the NGOs. Document T-PVS(2001)59 prepared by BirdLife International: Fuglaverndarfélag Íslands (Icelandic Society for the Protection of Birds, BirdLife in Iceland) and the Royal Society for the Protection of Birds (BirdLife in the UK) for 21st meeting of the Convention Standing Committee, Strasbourg, 26-30 November 2001.

[4] Bern Convention Secretariat (2001c). Possible new file - Afforestation of lowland in Iceland: report by the Government. Document T-PVS(2001)75 for 21st meeting of the Convention Standing Committee, Strasbourg, 26-30 November 2001.

[5] Bern Convention Secretariat (2002a). Specific File - Afforestation of lowland in Iceland: report of an on-the-spot appraisal undertaken for the Council of Europe (29 May–2 June 2002) by Michael B Usher. Document T-PVS/Files(2002)03 for 22nd meeting of the Convention Standing Committee, Strasbourg, 2-5 December 2002.

See also Bern Convention Secretariat (2002b). Possible file: Afforestation of lowland in Iceland. Document T-PVS/Files(2002)24 prepared by BirdLife International: Fuglaverndarfélag Íslands (Icelandic Society for the Protection of Birds, BirdLife in Iceland) and the Royal Society for the Protection of Birds (BirdLife in the UK) for 22nd meeting of the Convention Standing Committee, Strasbourg, 2-5 December 2002.

[6] Bern Convention Standing Committee (2002). Recommendation No. 96 (2002) on Conservation of natural habitats and wildlife, specially birds, in afforestation of lowland in Iceland. Adopted by the Standing Committee at its 22nd meeting 5 December 2002, Strasbourg.

[7] Bern Convention Secretariat (2007a). Follow–up of Recommendation No. 96 (2002) on the conservation of natural habitats and wildlife, specially birds, in afforestation of lowland in Iceland. Document T-PVS/Files(2007)02 prepared by: BirdLife International: Fuglaverndarfélag Íslands (Icelandic Society for the

implement satisfactorily any of the seven points of Recommendation 96. BirdLife emphasised that it is not opposed to forestry *per se*, being concerned simply with its appropriateness in certain locations, the processes available to weigh up potential implications, and to some extent its overall scale. The Government detailed some measures it was taking to gather information, and reported the adoption of a National Biodiversity Strategy[10,11].

The Committee's attention was drawn to the issue again in 2013, when BirdLife informed the Secretariat in October of that year of proposals being made in Iceland to more than double the planned extent of lowland afforestation and to increase government subsidies for planting[12]. It referred also to a reported announcement that a new environmental protection law was going to be withdrawn despite having already been approved by Parliament. The Standing Committee in December 2013 agreed to re-visit progress with the 2002 Recommendation at its 34th meeting in 2014[13].

2013 was also the year in which Iceland became a Party to the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA). The Icelandic forestry issue was raised at the 9th meeting of the AEWA Standing Committee, where the possibility of a joint advisory mission by the Agreement and the Bern Convention was mentioned.

AEWA's equivalent of the Bern "case file" and "on the spot appraisal" processes is a system known as the "Implementation Review Process" (IRP)[14]. In March 2014, Fuglaverndarfélag Íslands on behalf of BirdLife International submitted a formal proposal for the IRP process to be activated in relation to lowland afforestation and migratory waterbirds in Iceland; citing poor progress in response to the Bern Convention recommendation and a risk of incompatibility between the country's forestry policy and its AEWA obligations, particularly those under Articles II.1 (maintaining species in favourable conservation status), II.2 (the precautionary principle) and III.2 (d) (maintaining a network of habitats throughout migratory ranges). AEWA Article III.2 (e) (investigating problems and seeking

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Protection of Birds, BirdLife in Iceland) and the Royal Society for the Protection of Birds (BirdLife in the UK) for 27th meeting of the Convention Standing Committee, Strasbourg, 26-29 November 2007.

[8] Bern Convention Secretariat (2007b). Update on implementation of Recommendation No. 96 (2002) on the conservation of natural habitats and wildlife, specially birds, in afforestation of lowland in Iceland. Document T-PVS/Files(2007)08 prepared by: BirdLife International: Fuglaverndarfélag Íslands, (the Icelandic Society for the Protection of Birds - BirdLife in Iceland), the Royal Society for the Protection of Birds (BirdLife in the UK) and Náttúrverndarsamtök Íslands (the Iceland Nature Conservation Association) for 27th meeting of the Convention Standing Committee, Strasbourg, 26-29 November 2007.

[9] Bern Convention Secretariat (2008a). Follow-up of Recommendation No. 96 (2002) on conservation of natural habitats and wildlife, specially birds, in afforestation of lowland in Iceland. Document T-PVS/Files(2008)22 prepared by BirdLife International, Fuglaverndarfélag Íslands (the Icelandic Society for the Protection of Birds - BirdLife in Iceland), the Royal Society for the Protection of Birds (BirdLife in the UK) and Náttúrverndarsamtök Íslands (the Iceland Nature Conservation Association), for 28th meeting of the Convention Standing Committee, Strasbourg 24-27 November 2008.

[10] Bern Convention Secretariat (2007c). Follow-up of Recommendation No. 96 (2002) on conservation of natural habitats and wildlife, specially birds, in afforestation of lowland in Iceland. Report by the Government. Document T-PVS/Files(2007)21 for 27th meeting of the Convention Standing Committee, Strasbourg, 26-29 November 2007.

[11] Bern Convention Secretariat (2008b). Follow-up of Recommendation No. 96 (2002) on conservation of natural habitats and wildlife, specially birds, in afforestation of lowland in Iceland. Report by the Government. Document T-PVS/Files(2008)12 for 27th meeting of the Convention Standing Committee, Strasbourg, 26-29 November 2007.

[12] Details discussed in Section 3 below.

[13] Bern Convention Secretariat (2013a). Standing Committee 33, Strasbourg 3-6 December 2013. Document T-PVS(2013)15 - Report of the meeting.

[14] AEWA (2008). Establishment of an Implementation Review Process. Resolution 4.6 adopted by the 4th Session of the Meeting of the Parties, Antananarivo, Madagascar, 15-19 September 2008.
AEWA's process cannot go as far as Bern's in producing "declarations" of non-compliance; but both are focused more often on sharing experience and generating constructive action suggestions. The Conventions on Wetlands (Ramsar) and World Heritage UNESCO) have equivalent procedures.
For additional contextual commentary see also Lewis, M (2016). AEWA at twenty: an appraisal of the African-Eurasian Waterbird Agreement and its unique place in international environmental law. Journal of International Wildlife Law & Policy 19(1):22-61.

to implement remedies) was also seen as relevant; as were sections of the annexed Action Plan which concern protected areas (3.2.1), wise use of wetlands and avoiding habitat degradation (3.2.3), habitat conservation strategies (3.2.4) and impact assessment (4.3.1). Joint action with the Bern Convention (and potentially with other intergovernmental processes having similar interests) was recommended.

Further reports from the Icelandic authorities and BirdLife International were received by the Bern Standing Committee in December 2014[15,16]. The Committee welcomed the Government's willingness to host an AEWA IRP Mission, confirmed the readiness of the Bern Convention to participate in it and looked forward to considering the findings at its 2015 meeting. It ultimately did not take place that year, and the Committee subsequently invited Iceland to facilitate it during the first half of 2016 and to report back to the following meeting[17].

Terms of Reference (see below, and in section 12 and Annex 3) were duly elaborated and agreed between Iceland, AEWA and Bern in early 2016, and the Mission itself took place in May 2016[18]. The assumption was that sustainable solutions to the problem were achievable, through mechanisms such as impact assessment, habitat protection, restoration, strategic planning and exchange of experience with other Parties who have experience of analogous situations. Conducting the IRP process in conjunction with the Bern Convention was designed to offer a coordinated mechanism for assisting the Government of Iceland to elaborate practical strategies for implementing its national forestry policy, particularly with regard to lowland afforestation, in ways which are compatible with its obligations under the Agreement and the Convention.

On this basis, the process was seen as offering the following benefits:

- Securing active attention, in a coordinated and synergistic way, to issues of common concern to AEWA, Bern and other multilateral processes, allowing experiences to be shared and encouraging a good example to be set;
- Injecting additional energy into the increasingly urgent process of following up the 2002 Bern Recommendation;
- Assisting with the elaboration of practical strategies for planning, evaluating, consulting upon and implementing afforestation activities in Iceland in ways which are compatible with the Party's obligations under the Agreement and the Convention for the conservation of migratory waterbirds and their habitats;
- Reconciling disparities between Parties on policies and strategic approaches relating to afforestation of wetlands and other lowland habitats, and to the use of non-native tree species;
- Developing useful shared perspectives and practical implementation options, in relation to conservation of migratory waterbirds, on the implementation of relevant Aichi Biodiversity Targets[19], in particular Target 3 (incentives) and Target 17 (national biodiversity strategies).

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[15] Bern Convention Secretariat (2014a). Follow-up of Recommendation No. 96 (2002) on conservation of natural habitats and wildlife, especially birds, in afforestation of lowland in Iceland - report by the Government. Document T-PVS/Files(2014)50 for the 34th meeting of the Standing Committee, Strasbourg, 2-5 December 2014.

[16] Bern Convention Secretariat (2014b). Follow-up of Recommendation No. 96 (2002) on conservation of natural habitats and wildlife, especially birds, in afforestation of lowland in Iceland. Document T-PVS/Files(2014)56 prepared by Fuglavernd (BirdLife in Iceland) for the 34th meeting of the Standing Committee, Strasbourg, 2-5 December 2014.

[17] Bern Convention Secretariat (2015a). Standing Committee 35, Strasbourg 1-4 December 2015. Document T-PVS(2015)30 - Report of the meeting. (Note that this meeting also adopted a Recommendation in support of the *European Code of Conduct on plantation forestry and invasive alien trees*).

[18] For details of the programme see Annex 2.

[19] See https://www.cbd.int/sp/targets/ .

The Mission team comprised two independent experts (the team leader and the report compiler) together with a representative of the AEWA Secretariat and a representative of the Bern Secretariat. Consultations took place with a variety of stakeholders in Iceland, including representatives of the Ministry for the Environment and Natural Resources, the Environment Agency, the National Planning Agency, the Forest Service, the Forestry Association, the Institute of Natural History, the University of Iceland, the Farmers Association, Fuglavernd (BirdLife in Iceland) and RSPB (BirdLife in the UK). A guided field visit was undertaken to relevant areas in the south-west of the country[20]. In advance of the Mission, the team provided the host Ministry with 19 "information requirements" and 56 questions organised according to the six objectives listed above. This helped to prepare the ground and to generate some background information prior to arrival.

The Mission's Terms of Reference

The principal objectives of the AEWA IRP and Bern joint Mission to Iceland were agreed as follows:

- to assess the projected impact of the Icelandic forestry policy on the populations of AEWA-listed migratory waterbird species, on their habitats, in particular wetlands, and their ecosystem services;
- to identify and consider the possible cumulative impacts on the waterbird habitats alongside possible afforestation from other factors, such as agricultural conversion, recreational infrastructure development and climate change, including climate-induced regeneration of natural tree species;
- to consider whether the Icelandic forestry policy complies with the obligations of Iceland under AEWA and Bern;
- to review the progress made so far by the Government of Iceland in response to Bern Convention Recommendation No. 96 (2002) and to assess its contribution to addressing the points of concern as indicated in that Recommendation;
- to compile recommendations to the Government of Iceland on practical measures for future planning, evaluating, consulting upon and implementing afforestation activities in Iceland, as well as maintaining and restoring wetland values and services; so that such developments will take place in ways which will be compatible with the Party's obligations under AEWA and Bern, in relation to the conservation of migratory waterbirds and their habitats;
- to propose a monitoring plan for the implementation of the recommendations.

This report describes the issues considered; summarises the information submitted by the Government of Iceland; that obtained by literature search, and importantly that obtained through a series of interviews held with various stakeholders during the visit by the Mission Team to Iceland in May 2016. The report presents the findings of the Mission, and makes recommendations jointly on behalf of AEWA and the Bern Convention. The draft of this report was submitted for consultation to the Ministry for the Environment and Natural Resources of Iceland; and the comments provided by the Ministry have been reflected and accommodated, to the extent possible, in the final version of the report. The report is a public document and available for unrestricted distribution.

3. AFFORESTATION: PAST, PRESENT AND FUTURE

Native species and the history of forest cover

Iceland is a predominantly treeless country today; but prior to human settlement in the 9th century it is reputed to have had forests and woodlands covering somewhere between 25% and 40% of the land surface. Clearance for grazing reduced this to less than 1% by the early 20th century, and through a combination of natural regeneration (around 480 ha per year) and planting (around 1,000 ha per year) it is now at around 2% (47,000 ha of plantations amounting to 0.5% plus 150,600 ha of native birch amounting to 1.5%). Almost all forests and woodlands lie below the 400 m contour line.

[20] Further details of personnel, consultations and the Mission programme are given in Annex 2.

The main native tree species is the Downy Birch *Betula pubescens*; the only others being Rowan *Sorbus aucuparia* (sporadic), Aspen *Populus tremula* (rare) and Dwarf Birch *B. nana* (a low shrub). Most of the natural regeneration has taken place in the Westfjords (where there has been depopulation and land abandonment) and in South Iceland (where sheep farming has been partly replaced by other land uses). Sheep numbers nationally have reduced from around one million to 500,000, and birch colonises fairly quickly in the absence of grazing, given the presence of seed sources.

Market and policy drivers for increasing forest cover

The Mission Team were told that the legacy of the historical change described above runs deep in Icelandic cultural sensibilities, and reversing it is a strong motivation in the public mind for afforestation efforts. At the same time it has been pointed out to the Mission Team that no-one involved in forestry wishes to see any environmental harm resulting from it.

Most of the forest products currently used in Iceland are imported (for example from Canada). Advocates of forestry argue that with the country's human population being little over 320,000, self-sufficiency in timber is a feasible aspiration.

Employment creation is another part of the case that is made for planting programmes. Since the 1990s (taking into account the decline in sheep farming), keeping people working in the countryside has also been a motive. Other drivers include carbon capture, amenity benefits, creation of windbreaks around fields and re-afforestation *per se*.

Soil erosion has been occurring at rapid rates in many parts of Iceland (some affected areas were witnessed during the Mission visit). Soil conservation and erosion control were referred to in the 2002 Bern Convention on-the-spot appraisal report (and in the Standing Committee Recommendation based upon it) as an important driver for afforestation. The Mission heard that in the opinion of some, the issue has, however, probably been overstated as a driver for forestry in much of the lowlands.

Afforestation targets

The adoption of an official target for increasing the area under forest has been a major stimulus for the interest taken in this issue by the Convention and the Agreement, since it has to sit alongside the same government's commitments to conservation under these instruments.

The forestry law of 1999 (Act 56/1999) set a target of afforesting at least 5% of lowland areas (under 400m a.s.l.) by 2040 (NB not 5% *of Iceland* in the lowlands, which would be a much bigger area). This was repeated in the Regional Afforestation Projects Act of 2006 (Act 95/2006, still in effect) which expresses it as 5% of the lowlands *in each region*[21]. Regional plans were envisaged for taking this forward, although these have not yet materialised. 5% of the lowlands amounts to between 2-2.5% of the area of the country, or between 206,000-257,000 ha[22]. Some of this land is unavailable for planting, (including built-up areas, rivers and land under ice); and so as a proportion of the *vegetated* lowlands the figure could be closer to 25%.

The Mission, in attempting to clarify the basis for the target, was told that it was based on multiple objectives including an estimate of likely timber needs made prior to the 1999 Act. The Mission also sought clarification on whether any natural spread of birch would count towards the target and was told that the legislation is not fully clear on this point, but the answer is probably no: it appears to be generally understood that the 5% is therefore an *afforestation* target rather than a *forest cover* target.

In 2007, a committee established by the Ministry of Environment recommended expanding birch woodland to cover 10% of the total land area[23]. The intention would be to achieve this by a combination of increased planting and natural spread.

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[21] The 2006 Act did not repeat the 2040 end date, but Loftsson et al. (see next ref) specify 2030.

[22] Loftsson, J, Sigurgeirsson, A, Jónsson, B, Guðmundsdóttir, KH, Jónsdóttir, V and Eysteinsson, Þ (2013). Forests in Iceland - policy in the 21st century. Icelandic Forest Service. (This source quotes the figure of 2%. The figure of 2.5% was cited during the Mission visit).

[23] Ministry for the Environment, Iceland (2007). Protecting and restoring birch forests: report and recommendations of the Committee.

In 2013 a similar committee produced a national Forestry Strategy, proposing a new target (again for the total land area, not just the lowlands) of at least 12% (for forest cover, not planting) by 2110[24]. This would be achieved by adding the 10% native birch target mentioned above to the 2% planting target (5% of lowlands) defined in the 2006 Act. The component of this coverage which would be situated in the lowlands is not specified, but given the distribution of suitable soils and growing conditions it is likely to be substantial, and the proportion this in turn represents of the *plantable* lowlands (vegetated areas often coinciding with the main breeding waterbird habitats) will be commensurately even larger.

For the time being, the larger 12% target has the status of a strategic aspiration on the part of the Forest Service. Neither the Ministry nor the Parliament has adopted it, and the official target remains that defined in the legislation (5%).

Species, locations and methods used in planting

Afforestation by active planting includes some native birch, but this is mainly for amenity or other ground-cover reasons, and it not seen as an economically useful species. Most planting therefore involves non-native species, the main ones being Siberian Larch *Larix sibirica*, Sitka Spruce *Picea sitchensis*, Lodgepole Pine *Pinus contorta* and Alaskan Black Cottonwood/Western Balsam Poplar *Populus trichocarpa*. Of these the larch is the most commonly used, comprising around 40% of plantings and currently covering some 8,600 ha[25].

Previous practice (based on that used in Scandinavia) was initially to plant birch as a colonising species then to plant conifers in amongst them; but this is no longer seen as necessary and the intended plantation species are simply planted in the open ground. All the trees are grown from seed in nurseries in Iceland: there is no import of live seedlings, for reasons of disease prevention.

According to a report received by the Bern Convention Standing Committee in 2008[26], planting rates in the lowlands were increasing every year, and at that time the rate had reached some five million trees per annum. Between 2009 and the present day however, according to the Forest Service that rate has halved, and it currently stands at around 1,000 ha per year.

Although "lowland" forestry is officially defined as that taking place below 400m a.s.l., in practice the nature of the terrain and the climate mostly limit it to land under 100m[27]. Plantable land consists mainly of moorland (60% of the planted area), grassland (11%), "eroded land" (10%) and existing woodland (9%)[28]. The most agriculturally productive land is unlikely to be used for trees. It seems that some 5% of the planting has taken place on wetlands, covering 2,400 ha: according to the Forest Service this would all have taken place prior to 1995 and may not represent the proportion of current planting on this habitat. (Note that the Mission has not explored the distinctions being used for these purposes between e.g. "grassland" and partially-drained wetlands).

Only 3% of afforestation takes place on the Forest Service's own land[29]. Not all of this land is planted yet, but the final proportion of forest cover produced in this way will remain relatively small. There is no plan for the Service to acquire more land, although this might possibly occur in a few instances where a farm that is already in State ownership becomes abandoned.

By far the majority of planting (70%) takes place on farm-owned properties through the grant scheme created under the Regional Afforestation Projects Act (see section 5 below). Municipalities, individual private landowners not requiring grant aid and others account for a further 5%.

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[24] Loftsson et al. (2013), *op cit*. (At one place in this document an end-date of 2100 is mentioned, but all other references to the timeframe cite 2110 instead).

[25] Source: Icelandic Forest Service, based on unpublished data from the Icelandic Forest Inventory.

[26] Bern Convention Secretariat (2008a), *op cit*.

[27] Bern Convention Secretariat (2007b), *op cit*; and Bern Convention Secretariat (2008a), *op cit*.

[28] Source: Icelandic Forest Service, based on a comparison between vegetation cover types from the "Nytjaland" database and information on cultivated forests from the National Forest Inventory. (The figures date from 2005, but the Service has advised that they should still hold good, except for the percentage attributed to wetlands, which is said to have reduced).

[29] The figures in these four paragraphs have been provided to the Mission by the Icelandic Forest Service. They update a previous percentage breakdown contained in Bern Convention Secretariat (2007b), (*op cit*).

The remainder currently occurs through two specific projects. The "Land Reclamation Forests" project is managed by an NGO (the Icelandic Forestry Association) and has been running since 1990 on five-year renewable government contracts (the current one has three years to run and could then be renewed again). The project mainly targets eroded, degraded or marginal land in cities, towns and communities who provide most of the funding. Planting is primarily for recreational and amenity benefit and to help control encroachment of built development onto open space; and some income is generated from Christmas tree sales. This project accounts for 12% of current afforestation.

The second project is the "Hekluskógar" project, said to be the largest birch afforestation initiative in Europe. It was launched in 2005 and is managed jointly by the Icelandic Forest Service and the Soil Conservation Service, with planting taking place on eroded areas around the Hekla volcano in southern Iceland. This accounts for 10% of the national afforestation total.

Lowland inland valleys in the north, east and west of the country appear to offer the greatest scope for extensive planting, but the pace of activity is dictated largely by landowner uptake of grants (see section 5 below), and at current rates of planting according to the Forest Service it will take around 150 years to reach the 5% target. In their view the target will only be met through the addition of large-scale government-funded schemes on eroded lands.

In terms of productivity, the harvesting cycle is estimated to be around 25 years for poplars gown for biomass (fuelwood), 40-60 years for pine and spruce and around 60 years for larch, rising to 80 years on poorer land and/or if grown for timber. Maturing plantations in Iceland is to some extent however still an area of experimentation: growth and survival rates are not fully known and could be highly variable. The Icelandic Forestry Association reported that some accelerated growth as a result of climate warming was already apparent.

Summary

Although the Mission saw maps of the current extent of forestry, it is difficult to assess future intentions in practice, as data and information on this is clearly deficient. It is therefore difficult to be clear about what evidence-base the government will use to support decisions about future planting. Consultees indicated that recent and current rates of planting have declined sharply compared to those in the past, and that they are unlikely to increase again in the near future. Farmers are generally keen to retain a focus on farming rather than to diversify into forestry, although some will do so.

In terms of future planting, the Mission was not shown evidence of a regional or strategic approach, hence there is uncertainty about which areas are proposed for future planting and whether these might overlap with areas of key conservation interest. As noted above, the Mission was shown very impressive and promising work by the Icelandic Institute of Natural History in developing a land-cover map for the country, and this could assist in developing such a strategic approach in the near future.

It is clear that there is a risk that future forestry planting may impact on waterbird populations. This could, however, be avoided by the development of a system of zoning for future planting to avoid areas of importance for birds. This approach should be developed further by the Government of Iceland and its Agencies.

4. LAND USE PLANNING

Later sections of this report address the system of planning controls and specific safeguards available for reconciling forestry policy imperatives and nature conservation policy imperatives in Iceland. The present section briefly introduces the strategic context for decision-making in this area.

Implementation of Iceland's national planning legislation (an Act of 2010 and subsequent Regulations) is administered by the National Planning Agency, a small unit of 23 staff. A National Planning Strategy was adopted earlier in 2016. This contains some broad-brush policies, for example on safeguarding cultivatable land particularly in areas around the capital that are prone to holiday home development; but the provisions it makes for a land classification system have not yet been initiated, and it is too soon to see exactly how the strategy will influence individual decisions taken at more local levels.

The second tier of planning is at the regional level, where provision is made for regional plans. These plans are advisory, hence conformity with them is not mandatory.

The main responsibility for planning decisions rests with Iceland's 74 Municipalities, which together cover the whole of the country. Municipal plans are mandatory and they must be renewed every four years: all but two of the Municipalities currently have such a plan. Development projects (including afforestation projects) must conform to the Municipal plan and they require a permit[30].

Permit applications must include information on location, size and ownership of the area to be planted as well as a general description of vegetation, any areas of nature conservation or archaeological interest and a description of the planned forest or other development. The authority may consult others such as a nature conservation committee, the Natural History Institute, the Environment Agency or NGOs, and it may request more detailed information and/or independent surveys.

These Municipal authorities are therefore the key guardians of policy compliance, but they are highly variable in size and their capacity to engage in this varies accordingly. The Forestry Service and the National Planning Agency have developed joint guidelines on the treatment of forestry in the spatial plans[31]., but otherwise no national guidance on how to treat forestry in day-to-day decision-making appears to be in regular use.

The Forest Service has been incorporated as an agency within the Ministry of Environment since 2008. At the level of Iceland's five regions there are regional afforestation programmes which look 40 years ahead and are subject to review at ten-year intervals. Legislation has recently been enacted and implemented since the time of the Mission and is due to unify these programmes and amalgamate the regional offices responsible for them with the Forest Service at national level.

No instrument currently identifies spatial allocations for where future forestry should be developed, or for example identifies zones of particular soil conditions to determine areas suitable for planting. Rather, and as noted previously, spatial planning is essentially undertaken at the local level only by landowners planning particular developments. In effect, over 75% of the planting that takes place is *ad hoc* and the system regulating it operates in a reactive manner. Most afforestation takes place on farms, and is dependent on the individual landowner deciding to apply for a planting grant (see section 5 below). The forestry authorities currently does not intervene in this with any steering of landowner intentions; although the Planning Agency sees a case for setting out more of a strategic vision of how different land uses should be distributed. The Mission agrees, since this would allow future afforestation and bird distributions to be spatially compared, which would then help in planning to avoid unwanted impacts (see section 9 below).

Guidance and control in these circumstances otherwise rests with two possibilities[32]. One is in the terms of the individual applicant's planting plan, a 40-year agreement negotiated as a condition of the State grant aid. The other is the possibility of refusing the grant application, and this has been done in at least one case where planting was going to damage nature conservation interests (a key site for Arctic Skua in the north). That case however demonstrates the frailty of this sanction, since ploughing and planting went ahead anyway without the grant; and any landowner is free to do this at any time.

Summary

Planning in Iceland is framed by a National Planning Strategy, within which a regional level of plans is to be drafted to guide developments, including forestry. There are currently five Forest Regions across the country, each charged with developing a 40 year plan for afforestation in the Region concerned, and these plans are to be reviewed every ten years. The 74 Municipalities in Iceland (local level of government) have a key role in determining the future scale and location of afforestation, with each of them required to produce a Municipal Plan for developments overall.

[30] Regulation No. 772/2012.

[31] Referred to in Bern Convention Secretariat (2014a), *op cit*.

[32] This refers to planting. Felling is also controlled, by requiring a permit - the permit can attach conditions on the way that felling is done; but the usual condition is simply to require that the forest be replanted.

Updated guidance and advice from the national level to Municipalities is required in order to ensure that an effective locational, indicative strategy is developed for afforestation and to ensure that each of the Municipalities has the capacity to undertake effective evaluation of proposed forestry developments.

5. INCENTIVES AND LANDOWNER PERSPECTIVES

The majority of the plantable low-lying land in Iceland is privately owned, and (as mentioned in section 4 above) the majority of afforestation is not planned strategically, but instead awaits decisions by individual landowners who wish to afforest part or all of their land. They are incentivised to do this by the availability of government grants, enshrined in the legislation[33]. The grants are able to cover up to 97% of the costs of establishment, i.e. planning, advice, planting, fencing, some fence maintenance and a first phase of thinning where required. The contract that is signed attaches to the land and not the landowner, and it is generally perceived as adding to the capital asset value of a farm.

This level of support has existed since before the original Bern appraisal in 2002. Prior to the 2006 Act there was an element provided as a loan rather than a grant: this no longer applies in the same way.

Planting subsidy is the main mechanism available to drive increased forest cover in Iceland. Governments at global level have agreed to phase out or reform any subsidies that are harmful to biodiversity[34], so if this planting grant is deemed to be harmful in that way (see later sections of this report below) then reforms would need to be considered. Grants for drainage are no longer available and those for ditch maintenance will cease after 2016.

Influence or limits on where and how planting takes place when subsidy is granted (it can also be refused - see section 4 above) are mainly possible in the negotiation of conditions attached to the grant, in a 40-year planting agreement. There is also a fixed budget available for the government to disburse in grants under this scheme each year. This budget is usually fully spent, and the amount available for 2016 represents its first slight increase for some years.

Given the levels of support available, in terms of funding and in terms of advice and infrastructure (for example through the "Forestry Clubs" in different parts of Iceland that are serviced by the Forestry Association), combined with the cultural impetus for afforestation mentioned in section 3 above, levels of uptake of planting grant could be expected to be high. The full disbursement of the national budget each year would certainly seem to suggest that demand is strong, and indeed some planting takes place without grant (and therefore without control) by those who can afford it. According to the Farmers Association there are cases also of properties being bought with the express main purpose of planting trees.

Situations and motivations vary, not least in terms of economics, since there is (among other things) a great variety of farm sizes in Iceland. A typical profile of a landowner who undertakes forestry planting was described to the Mission as an older person wanting to enhance the landscape of a farm before retiring and/or bequeathing it, while also perhaps becoming less able to engage in other forms of land management. Others plant trees as boundary windbreaks, and some to protect fields against damage by geese and swans. These reasons are therefore not based directly on making an economic return from forest products.

Around 700 planting agreements are currently in effect, but only 7-8 new ones are being signed each year, and the annual rate of planting has declined. Despite the apparently strong grant uptake described above, it was said during the Mission that much of the original demand from those wishing

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[33] Currently the Regional Afforestation Projects Act, No. 95/2006.

[34] The global Strategic Plan for Biodiversity 2011-2020 (https://www.cbd.int/sp/) includes as Target 3 "*By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions*". "The Convention" is the Convention on Biological Diversity (CBD), which Iceland ratified in 1994 - but the Strategic Plan has also been adopted or endorsed in other international fora and it is not only a "CBD Plan".

to plant may already have been satisfied. It was reported also that grant-aid for supporting livestock farming is more generous than that for forestry.

This issue of the balance of incentives would be worth further study, particularly to help to inform forecasting of likely future planting rates, and hence the true scale of any potential conflict between forestry and biodiversity conservation objectives.

State-funded "positive" financial incentives for land management in favour of nature conservation (such as the "agri-environment" schemes operated in European Union countries) do not yet exist in Iceland. A recent survey of farmer opinion on incorporation of practices that benefit birds into farm management showed fairly low levels of interest in this, even if it were to be incentivised; but also showed that the farmers value having rich birdlife on their farms[35]. The study therefore concluded that interest might increase, given better familiarity with the possibilities for suitable measures and with the potential options for State support.

Recommendation 13: Given the need, as part of wider ecosystem management, to maintain and restore wetland values and services, as articulated in the Terms of Reference for the Mission; then explore the scope and possibilities for introducing State-funded "positive" financial incentives for land management in favour of nature conservation. This should be informed by research on trends in uptake of existing forms of support and on landowner perspectives concerning the future.

Summary

It is clear that the management of forest planting in Iceland is a "bottom-up" process with landowners and managers deciding whether or not to afforest areas of land. This approach needs to be balanced in future with the provision of clear, strategic guidance from government at the national level, linked to financial and other support so that areas of high conservation value are not impacted by large scale afforestation.

6. SAFEGUARDS (i): PROTECTED SITES AND HABITATS

A new law on nature conservation (to replace the previous Nature Conservation Act of 1999) was approved by the Icelandic Parliament in 2013[36] and was due to come into effect the following year. A change of Environment Ministers led to a re-examination by the Parliament's Environment Committee, causing some sections to be amended (relating to non-native species and the definition of "wilderness") before it came into effect on 15 November 2015.

The new legislation represents a significant modernisation of conservation law in Iceland, introducing concepts such as the precautionary principle and "favourable conservation status" objectives, and better aligning the country's national provisions with those in international Conventions. The Government moreover has emphasised to the Bern Convention Standing Committee its commitment now to "seek *any* options to avoid further loss of biological diversity and the disappearance of rare habitats"[37] (emphasis added).

Protected areas: identification and designation

The 2013 Act provides for an inventory of areas of nature conservation interest to be compiled according to criteria in Article 35 (which includes reference to international significance), and for a "Part A" list of the most important sites to be given special protection as described below[38]. New

[35] Jóhannesdóttir, L, Alves, JA, Gill, JA and Grétar Gunnarsson, T (in prep). Reconciling biodiversity conservation and agricultural expansion in sub-arctic environments. Manuscript submitted for publication.

[36] Law 60/2013 on Nature Conservation, 10 April 2013.

[37] Bern Convention Secretariat (2014a), *op cit*.

[38] Three lists under the Act reflect three stages of this process. "Part C" is an initial inventory of potential areas, "Part B" is a series of five-year designation programmes based on areas selected from Part C, and "Part A" is the eventual list of designated areas.

designation proposals are prioritised in five-year programmes of action (Art 33), and are advertised for public comment, reviewed by the Environment Agency and submitted to Parliament before being confirmed (Art 36).

Currently there are 114 protected areas in Iceland covering more than 2.16 M ha or 21% of the land surface. Over half of this area is accounted for by a single National Park (Vatnajökull), most of which is ice-covered.

A baseline for further site selection (forming the "Part C" inventory under the 2013 Act) is provided by the national habitat mapping work undertaken since 1999 by the Icelandic Institute of Natural History (IINH). Since 2012 this work has formed part of the "Natura Iceland" research project which takes its cue from the European Union's "Natura 2000" protected area system defined in the EU Birds and Habitats Directives. The project includes identification of important areas according to the EU criteria (aligned also with those of the "Emerald Network" under the Bern Convention - see below); and it includes work to improve bird population estimates and status assessments. One of the factors involved in the selection of sites is the potential threat posed by afforestation. Publication of the project's results is expected towards the end of 2016.

One of the items in the Bern Convention Recommendation No. 96 from 2002 concerns the designation by Iceland of areas for inclusion in the Convention's international "Emerald Network" of Areas of Special Conservation Interest (ASCIs)[39]. The process for this involves the development of a national proposed list of ASCIs with accompanying datasets, a systematic evaluation of both the individual sites and the sufficiency of the national list, approval by the Convention's Group of Experts on Protected Areas and Ecological Networks, and finally (if approved) adoption by the Bern Standing Committee[40]. The Bern Parties have agreed a deadline of 2020 for completing the international network.

The Government of Iceland forecast completion of their national list by the end of 2008[41] and then revised this to the end of 2015[42], but this has still not occurred. A register of candidate sites is now not expected to be presented to Parliament until sometime in 2017. Designations (see details further below) are being progressed in tranches, and currently a tranche of ten sites is awaiting consultations among the landowners and municipalities concerned.

> **Recommendation 3**. Accelerate significantly Iceland's work towards its contribution to the international Emerald Network of sites so this can be completed by the end of 2017. Full application of legal protection measures at the national level may need to follow later in some cases, but all other methods should be used to safeguard the nominated sites against the negative impacts of afforestation in the meantime.

Protected areas: protection and management

The following section includes an understanding of the safeguard provisions in the 2013 Act applying to areas that are candidates for protected area status once they are listed in the "Part C" register. Developments which would damage these areas should be avoided unless it is in the public interest and there is no alternative solution (Art 37). The Environment Agency and IINH should also be consulted before permits are granted.

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[39] For an up to date description of this system see Bern Convention Secretariat (2016). The Emerald Network: a network of Areas of Special Conservation Interest for Europe. Explanatory document and compilation of relevant texts. Document T-PVS/PA(2016)4 prepared for the Group of Experts on Protected Areas and Ecological Networks.

[40] Bern Convention Secretariat (2013b). Revised criteria for assessing the national lists of proposed Areas of Special Conservation Interest (ASCIs) at biogeographical level and procedure for examining and approving Emerald candidate sites. Document T-PVS/PA(2013)13 prepared for the 33rd meeting of the Standing Committee, Strasbourg 3-6 December 2013.

[41] Bern Convention Secretariat (2008b), *op cit*.

[42] Bern Convention Secretariat (2014a), *op cit*.

When candidate sites have been included in the five-year programme towards designation ("Part B") they may also benefit from protection by a Ministerial order which can halt a particular potentially damaging operation for up to a year, within which time the intended designation must either be completed or abandoned (Art 37).

Among the safeguards applying to sites once designated (i.e. included in "Part A"), is a provision that decisions on the granting of permits for operations outside a designated area should take account of any effect they might nevertheless have upon it (Art 27). The opinion of the Environment Agency must be sought in such cases, and conditions may be applied to any consent that is granted.

In making judgements about decisions of this kind, the Act requires that the precautionary principle be followed. It expresses this in similar terms to those contained in the Convention on Biological Diversity[43]; although changing the application from "significant reduction or loss of biological diversity" to "serious or irreversible environmental damage" (Art 9).

The existence of a protected area is also a relevant consideration in screening for possible application of the regime for Environmental Impact Assessment (see section 7 below).

The management of Iceland's protected areas, along with enforcement of the legislation, is a responsibility of the Environment Agency. For this role however, apart from seasonal rangers the Agency has a staff complement of ten, plus another ten people covering the two National Parks of Vatnajökull and Thingvellir. Only 14 of the 114 protected areas currently have management plans, but after a hiatus of some years, work is now in hand again to develop plans for a prioritised list of sites (with international importance featuring in these prioritisation decisions).

General protection for habitats

In addition to specifically designated sites, under the 2013 Act certain types of habitats receive a measure of protection wherever they occur. Landscape-scale conservation of this kind can be of particular importance for many of the bird species at issue in the present case, given their often highly dispersed breeding distributions and the large territories that pairs require.

Lakes, springs, watercourses and relatively intact catchments, their natural processes, ecological connectivity and ecosystem services are protected in general against damaging developments, including energy-related developments (Arts 3 and 55). Water abstraction from such areas is also subject to regulation.

Saltmarshes, mudflats, open water bodies of 1 ha or more, peat bogs and other wetlands of 2 ha or more (prior to 2013 this threshold was 3 ha) and ecologically important birch forests are all specially protected wherever they occur, by being subject to development consent restrictions that are designed to prevent damage (Arts 57 and 61).

The provisions described in the preceding two paragraphs should be important for limiting impacts on wetlands from afforestation; although the Mission understood that these provisions of the Nature Conservation Act do not interact with the provisions of the Forestry Act in a way that is sufficiently coherent to give full assurances on this count. The system also depends on proponents submitting the required applications for consent, and reportedly this does not always happen.

At a level of policy (as opposed to legal requirements), since around 1995 it has been the policy of the Icelandic Forest Service not to drain wetlands for afforestation, and the forest establishment grants described in section 5 above do not cover drainage. Policy is less explicit about not *planting* such areas, but the Agency advises landowners that intact wetlands should not be planted.

This leaves a question-mark over the large extent (around 4% of the country) of wetlands which are not "intact" because they have been affected by partial drainage undertaken mainly during the 1940s - 1970s. These areas of "modified wetlands" are often regarded as suitable for forestry and are

[43] The CBD formulation (Preamble para 9) is as follows: "*Where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimise such a threat*". The AEWA Agreement also requires that "*In implementing the measures prescribed in paragraph 1 above* [= maintenance or restoration of favourable conservation status for migratory waterbird species], *Parties should take into account the precautionary principle*" (Art 2.2).

not protected to the same extent as intact wetlands, and yet they can be extremely important as breeding habitat for large numbers of waterbirds.

There have been initiatives for the restoration of degraded wetlands, including by NGOs. One successful example of this (led by Fuglaverndarfélag Íslands) was visited by the Mission team. A wetland restoration committee was set up by the Ministry of Agriculture in the 1990s, and attempts have been made to take a strategic view of priority locations for restoration (mainly in a context of carbon sequestration); but a lack of good historical information has prevented this from being based on documented previous distribution of relevant habitats.

Finally, Article 63 of the 2013 Act prohibits the import and distribution of live non-native organisms unless authorised by the Environment Agency; but there is an exemption to this for plant species used for afforestation.

Summary

It is clear that whilst a system of legal protection exists, its implementation is still at an early stage. Work remains to be done to conclude the implementation of an effective site protection network. This is an urgent priority and should include the completion of Iceland's contribution to the wider Emerald Network. The Environment Agency has a key role in this task: it needs to embrace it with enthusiasm and to undertake the work in a collaborative manner, so that "sign-up" for the outcome is achieved across government.

It is clear that progress has been made with the adoption of the 2013 Nature Conservation Act, but the implementation of the provisions in relation to the protection of habitats in particular still needs to be completed. It is important also that the provisions in other legislation relating to forestry are aligned with the Nature Conservation Act. This will hopefully also have the benefit of encouraging a strategic and joined-up approach to land-use planning more generally.

7. SAFEGUARDS (ii): ENVIRONMENTAL IMPACT ASSESSMENT

The Environmental Impact Assessment Act of 2000 (Law 106/2000) previously provided that any proposed afforestation scheme of 200 ha or more should be subject to an Environmental Impact Assessment (EIA). A size threshold of this kind is not necessarily any guide as to the significance of potential impacts, and it has been widely regarded as arbitrary. In fact the Mission was given to understand that it was based on a proportion of the average farm size, and hence unconnected to any rationale relating to impact as such.

A more acute criticism[44] has been that in practice, proposed afforestation schemes had been artificially subdivided to come under the threshold thereby avoiding the EIA requirement, even though they may be located on contiguous plots and combine to form a much larger total area. Whilst such proposals may have undergone screening, to date no afforestation project in Iceland has been accompanied by a full EIA (and even in the case of those proposed as plots larger than 200 ha it was decided on each occasion that no EIA was necessary). The Mission considers that this situation must change if the requirements of AEWA and Bern are to be met.

During the 2002 on-the-spot appraisal there was discussion about possibly reducing the 200 ha threshold to 50 ha. This was favoured at the time by the Planning Agency and the NGOs, and later a proposal to this effect was presented to Parliament but it was not approved[45].

A change was made to the Law in 2014, to require an outline form of EIA not only for afforestation projects greater than 200 ha but also those located within areas subject to conservation protection. The areas concerned include protected areas plus the more generally protected habitat types mentioned in section 6 above. Individual decisions made in this screening process are not made public. The outline assessment (a "Class B" assessment[46]) involves consultation with the Natural

[44] See for example reports to Bern Convention Secretariat, listed in section 2 above.

[45] Bern Convention Secretariat (2002a), *op cit*; Bern Convention Secretariat (2008a), *op cit*.

[46] The legislation provides for three classes of assessment according to the scale of the projects concerned. Class A covers major projects which are likely to have a significant environmental impact and which will always be subject to mandatory EIA. Class B covers projects that are below the scale thresholds defined in

History Institute and the Environment Agency, and the relating of basic environmental information to the planting plan. Based on this, the Planning Agency can decide that a full "Class A" impact assessment is required. The view amongst foresters is that the costs of this would outweigh the benefits of proceeding to plant. No Class A assessments have been requested, even though several schemes have been put forward in protected areas.

This situation is unsatisfactory on two counts. First, it appears that the mechanisms created by Parliament for properly assessing the environmental impacts of forestry are not being given full effect, either because schemes are artificially scaled to come under the 200 ha threshold or because authorities are reluctant to apply the Class A provisions. Second, the screening criterion based on location within a protected area is not as helpful as one based on "likelihood of impact" would be, since only the latter (as used in many other countries) can embrace projects outside the boundary of such an area which may nevertheless have an impact upon it.

Recommendation 7. Continue to give priority to the screening of afforestation proposals to determine the need for Environmental Impact Assessment according to case-specific judgements concerning the risk of effects on significant ecological values, rather than according to an arbitrary size threshold. Support these decisions with guidelines on factors likely to contribute to such effects (including those that may contribute indirectly, cumulatively and synergistically), and take a precautionary approach where there is uncertainty. Undertake "Class A" assessments under the EIA legislation wherever the circumstances warrant it.

The Mission recognises that if the screening judgements described in the recommendation above are made in the first instance by Municipal authorities, the capacity of the smaller ones to do this may be very limited. Consideration could now be given to options for organising the availability of expert advice for Municipalities, perhaps by doing more at a regional level and allowing for more flexible forms of input from the Planning and Environment Agencies. The greatest additional support however is likely to come from the kinds of strategic advice and information proposed in section 9 below.

Strategic Environmental Assessment

The cumulative effect of several small developments may be the same as the effect of one large development. While the latter might be assessed under EIA provisions based on the nature, size or location of an individual proposal, the former is an example of an issue which can only addressed by applying Strategic Environmental Assessment (SEA)[47].

SEA is also designed to address the assessment of the possible effects of policies, plans and programmes (as distinct from projects). In its original 2002 Recommendation the Bern Convention advised the government of Iceland to "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". This has not been done. Enabling

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Class A for developments such as power plants or quarries but which may nevertheless have a significant environmental impact, and other projects likely to have such an impact. Afforestation proposals of 200 ha or more are normally treated as Class B projects. In such cases the Planning Agency determines whether an EIA is required, based on judgements about the project's nature, size and location. Class C covers more minor projects which are notifiable to the local municipality (as opposed to the National Planning Agency) and in such cases the municipality decides whether an EIA is required. The determining body in Class C or Class B cases in certain circumstances may refer the case for action according to Class B or Class A respectively (ie to the next level above).

[47] The AEWA Technical Committee currently has a high priority task in its work programme, under MOP Resolution 5.14 (2012), to "*develop guidance for assessing the significance of cumulative impacts of multiple wetland losses along species' flyways, and the implications for EIA, SEA and other assessment processes*". Although the nature of the "accumulation" here is slightly different from that described in relation to multiple small forestry schemes accumulating to have the effect of a large one, the principles are similar so the eventual AEWA guidance may provide useful support for implementing SEA in Iceland.

powers for SEA (modelled on the EU's Directive on SEA[48]) were introduced in the legislation in 2006[49]; but like the EU Directive these only apply to public plans and programmes, so policy (and hence the Bern recommendation) is not addressed *per se*.

The SEA Act does, however, cover the 40-year regional afforestation programmes described in section 4 above. The regional Boards are expected to commission the assessments and the Planning Agency should then review them. To date however no such assessments have been undertaken. Municipal plans (see section 4 above) are also subject to SEA, and as far as the Mission is aware no SEAs of these plans have been undertaken either.

Recommendation 4. Implement urgently the provisions in the 2006 legislation for Strategic Environmental Assessment of regional afforestation programmes and of those Municipal plans that cover areas of importance for waterbirds. Undertake the SEA of national forestry policy as originally recommended under the Bern Convention in 2002.

Fuller application of SEA and EIA to afforestation will be assisted by using information generated from the research activities mentioned in section 10 below, and by implementing the priorities recommended in that section.

Summary

It is clear that a system of EIA exists in Iceland, but experience has shown that this has not been fully implemented or used effectively in practice. Using a "risk"-based approach in future (irrespective of the size of proposed developments) is suggested, along with more technical support for Municipalities.

SEA is also a key area for future action. Implementing the steps described above could provide the basis for a strategic approach to planning future afforestation, while also protecting waterbirds and wetland habitats. Without this it is difficult to see how such an outcome can be achieved in a realistic timescale.

8. SAFEGUARDS (iii): GOOD PRACTICE GUIDANCE AND ADVICE

Guidance

Following the Bern Convention's on-the-spot appraisal report in 2002, the Icelandic Forest Service set up a working group of 13 governmental and non-governmental organisations (including conservation bodies) to produce a guidance document on good environmental practice in afforestation. This was duly published in 2003 and is available on the website of the Forestry Association[50]. The guidance is voluntary: it pays special attention to the importance and vulnerability of waterbird species and their habitats that may be affected by planting. The guidance has never been updated, and consultees during the Mission gave differing views as to whether its advice had been followed.

The Forestry Association has also developed guidance for its members and makes this available to others. There are no initiatives to document real-life case examples of good practice, since doing so would be regarded as potentially divisive. The Farmers Association has expressed interest in developing guidance on climate change and wetland restoration.

In 2015 the Bern Convention produced a draft voluntary "Code of Conduct on plantation forestry and invasive alien trees" which contains many principles that are applicable to afforestation in

[48] Directive 2001/42/EC (2001) on the assessment of the effects of certain plans and programmes on the environment.

[49] Strategic Environmental Assessment Act, No. 105/2006.

[50] "Forestry - in harmony with the environment" (2003) - available at http://www.skog.is/index.php?option=com_content&view=article&id=145%3Askograekt-i-satt-vie-umhverfie&catid=24%3Averkefni&Itemid=104

Iceland[51]. All relevant stakeholders are actively encouraged to implement it. In particular it includes provisions relating to avoidance of planting on sensitive sites, restricting planting to areas where alien tree species are already present, limiting the total area of planting, reducing impacts outside planted areas, incorporating climate change into risk models[52] and various aspects of good forest design. It also urges that planting should be prevented (i.e. not just "assessed", c.f. section 7 above) anywhere near (i.e. not just "within") protected areas, wetlands and other key habitats; and it urges the creation of buffer zones.

Recommendation 12. Update and expand existing guidance on good environmental practice in afforestation, to include (for example):

(i) the Bern Convention's draft Code of Conduct on plantation forestry and invasive alien trees;

(ii) more advice (especially to help municipalities) on EIA and planning decisions;

(iii) updated information on the location of sensitive habitats and important sites;

(iv) avoidance of sites that support important bird populations (irrespective of habitat quality); and

(v) setting back plantation boundaries to provide buffer zones for reducing "edge effects" on wetlands.

Advice

As mentioned in sections 4 and 5 above, the majority of forestry planting is undertaken by private landowners with significant State aid, the granting of which is conditional on signing a 40-year agreement with the Forest Service. These agreements can themselves contain conditions, and this affords a key opportunity for information on specific vulnerabilities of the site to be taken into consideration and for specific advice to be given on minimising and where possible mitigating and compensating for negative impacts on nature conservation interests. Advice on relevant surveillance and monitoring in support of these measures may also need to be given. Currently it would appear that these discussions involve only the applicant and the Forest Service; but in future this process should allow more input from additional experts supported by a range of sources of data (for example from IINH).

Recommendation 8. Make full use of the opportunity provided by the negotiation of individual planting agreements with landowners to provide advice and attach appropriate conditions to any grant aid, in order to safeguard (and where applicable enhance) important ecological values.

Develop effective collaboration between IINH and the Forestry Service, to provide an evidence based approach to support locational guidance for forest planting in future; and to build up relevant knowledge and capacities across government.

Summary

The provision of significant grants from the government for afforestation provide an opportunity to include a range of measures to help avoid and mitigate any damaging effects on waterbirds and wetlands. There is a need to update advice and guidance documents and to include a wider range of stakeholders in the assessment of the desirability of any afforestation scheme and of the grant conditions to be attached to it.

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[51] Bern Convention Secretariat (2015b), *op cit*.

[52] See reference in Annex 4 below to potential new climate-related risks in relation to the non-native poplar used in Icelandic plantations.

9. INDICATIVE PLANNING AT A STRATEGIC LEVEL

The Bern Convention Recommendation in 2002 called *inter alia* for a national biodiversity strategy, mapping of high nature value areas and the guiding of forestry to lower value areas. Discussion on these items over the subsequent years has developed into a concept of an "indicative strategy" (or strategies, e.g. at regional level) for forestry itself, which would map areas clearly where there would be a presumption that forestry can be encouraged and areas where it should not be permitted[53]. The knowledge-base which would enable this has been progressively improving (see below), to the point where it would now be technically feasible.

Plans at national level for nature conservation have been adopted for the periods 2004-2008 and 2009-2013, but subsequently these have not been renewed because their main objectives are now subsumed into the process for advancing protected areas under the 2013 law on Nature Conservation (see section 6 above).

Iceland adopted a National Biodiversity Strategy in 2008 and an accompanying Action Plan in 2010. Parties to the Convention on Biodiversity were urged by the Convention's Conference of Parties in 2010 to update and revise their National Biodiversity Strategies and Action Plans (NBSAPs) to bring them in line with the Strategic Plan on Biodiversity adopted the same year[54], but despite a deadline of 2015, Iceland has not yet done this. The Mission is also not aware of any particular programme of activities to implement the existing Strategy and Action Plan.

Recommendation 10. Update Iceland's National Biodiversity Strategy and Action Plan, incorporating provisions relating to forestry policy and migratory waterbirds that reflect the recommendations made in the present report, and setting out a timeline for the future implementation of actions, accompanied by the necessary resourcing commitments.

As mentioned in section 6 above and in Annex 4, the Icelandic Institute for Natural History's "Natura Iceland" project will, in the near future, complete the production of maps of land cover, natural features, water catchments, habitats, species distributions and important nature conservation sites in the country. This will fill an important gap by providing a much improved basis for strategic planning at the national scale.

It is not yet clear how this knowledge-base will be formally linked to the relevant existing planning and decision-making processes, and it would appear necessary for some new arrangements to be instituted in order to ensure that such links become operational.

Iceland's Planning Act (2010) has mandated the production of a "comprehensive" national land-use planning policy, which could be one vehicle for doing this. As mentioned in section 4 above a National Planning Strategy was adopted earlier in 2016, but this is only at a very broad-brush level.

It appears to be generally accepted that if the officially intended overall extent of afforestation in the lowlands remains at 5% of the land surface, this target could in principle be achieved without conflicting with important nature conservation interests. The issue is therefore not simply one of the overall *scale* of planting (if it is limited in this way); but rather is a question of appropriate choice of *locations*. The IINH maps and other data should play a fundamental role in individual decisions to this end (including the application of enhanced good practice guidance and advice as discussed in section 8 above), but also in taking a more *proactive* and *strategic approach* to conflict-avoidance (and environmental benefit) nationwide in future.

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[53] See for example Bern Convention Secretariat (2007b), *op cit*.

[54] Convention on Biological Diversity (2010). COP Decision X/2 on the Strategic Plan for Biodiversity 2011-2020. Nagoya, Japan, October 2010. See paragraph 3(c). Target 17 in the Plan itself foresees updated NBSAPs being in place and being implemented by 2015.

Recommendation 5. Develop a national indicative forestry strategy in the short term, for full implementation over the longer term, which will:

(i) have the aim of meeting current afforestation targets while minimising negative effects on species or habitats of conservation importance (including both intact and modified wetlands);

(ii) use the most recent IINH maps and other data, including waterbird and wetland distribution data and the identified ASCIs, to identify zones of different degrees of presumption for and against planting;

(iii) be linked to the tiered system of decision-making set out in Iceland's Environmental Impact Assessment legislation; and

(iv) be guided by the conservation priorities and good practice standards referred to in the present report.

It is important to stress that the recommendation made above is not necessarily suggesting a more "top-down" system: it is aiming instead for more of a shared common understanding among stakeholders about where and how forestry should occur. Implementation should still involve regional boards, municipal authorities and other local interests; but the existence of a proper indicative strategy will give more clarity, consistency and coherence at national level, as well as giving the requisite assurance about Iceland's compliance with international obligations.

Consultation and coordination

The potential for conflict between forestry and nature conservation in Iceland has created some historical polarisation between those involved on either side of the debate, exacerbated by a typical separateness of their specialised institutions. This was already a prominent concern in the 2002 Bern decision, which recommended the "urgent" introduction of a system of statutory consultation between the forestry, planning and nature agencies, and the promotion of coordination and synergy.

Over 13 years later, similar concerns were still being voiced by consultees during the Mission. In more recent times responsibility for forestry has been brought within the reorganised Ministry for Environment and Natural Resources, which is responsible also for land-use planning and nature protection. In theory this should ensure a more integrated approach, but in practice, segmentation of departments and agencies appears to persist along traditional lines, and even climate change and biodiversity are dealt with more separately than many would wish.

An indicative strategy as recommended above should help towards harmonisation of activities; but formalised systems for liaison, consultation and equitable input to decision-making may also need special attention. Some of these aspects may benefit from external facilitation to help build a sense of common purpose and to ensure the timely development of the strategy

Recommendation 9. Undertake a review of existing formalised systems for liaison, consultation and equitable input to decision-making in planning and management of forestry across the various departments and agencies responsible for forestry, planning, environmental protection and climate change policy; and define specific steps for improving coordination and the coherence of action. Address explicitly as part of this review the supportive role of NGOs, academic experts and civil society.

Summary

The Mission believes that without the development of an indicative forestry strategy, the risks of future planting occurring in areas of high waterbird interest will be too high. In particular the overall scale and number of schemes (especially those in prospect) will not be sufficiently apparent, and it will not be possible to make judgements about potential environmental impacts in a properly-informed way (especially in respect of cumulative impacts). The creation of such a strategy would allow a

better understanding of opportunities and constraints to be developed and shared, both across government departments and more widely.

10. MONITORING AND RESEARCH PRIORITIES

Knowledge about the distribution of birds, habitats and natural features in Iceland has improved in recent times particularly with the "Natura Iceland" work described in earlier sections of this report. This will realise its full value when it is used as a baseline against which to detect and assess change, which in turn will allow the picture to be periodically updated. A programme of on-going monitoring is therefore required.

Under the 2013 nature conservation law the Icelandic Institute for Natural History is responsible for monitoring key elements of Icelandic nature, in cooperation with others where appropriate (for example a significant part of bird monitoring work is undertaken by volunteers, including the annual midwinter bird counts). The Institute is also charged with developing an environmental monitoring plan for the country as whole, including monitoring of protected areas in conjunction with the Environment Agency. Proposals for such a national plan have been put forward and a government decision on this is awaited.

A key constraint that became apparent during the Mission is the Institute's own capacity: it currently has no budget for delivering the work required, and its programmes tend to run for no more than two years at a time. A contract with the Environment Ministry for supporting the implementation of AEWA is under discussion at the time of writing: it would be timely and appropriate to include long-term waterbird and wetland monitoring in that work.

Recommendation 6. As part of the IINH work to support the implementation of AEWA in Iceland (see Recommendation 12), develop and launch with effect from 2017 an appropriately-resourced country-wide scheme for long-term monitoring of waterbirds and their habitats, to:

(i) be capable *inter alia* of detecting changes caused by forestry; and

(ii) be used *inter alia* to help inform judgements about forestry development, by reference to the national and international context relating for example to bird distribution, habitat use and the status and trends of populations.

If designed appropriately, monitoring should be capable of showing any changes in bird populations and/or distributions that result from forestry-related activities. Understanding the ecological *mechanisms* by which such changes come about however is a different matter. As described in Annex 4 of the present report there have been only limited efforts so far to study these mechanisms in Iceland (and the work has not been fully published). Especially given the unique ecology of Iceland, this is seen as a priority for future research, and the results should be used to support best practice in environmentally sustainable forest planning and management.

Recommendation 11. Give priority in future environmental research projects and programmes to gathering better Iceland-specific evidence on the ecological mechanisms by which afforestation may impact upon birds and other biodiversity. This should give particular attention to effects that may be secondary, cumulative, synergistic, indirect or "edge"-related, as well as any complicating factors associated with climate change. Make the findings available to all concerned, and use the resulting knowledge fully in EIA screening processes, good practice guidance and advice on e.g. buffer distances, mitigation measures and options for habitat restoration.

11. RELATING THE MISSION'S FINDINGS TO BERN AND AEWA REQUIREMENTS

International concerns about the potential for incompatibility between Iceland's forestry policy and its Bern Convention obligations have remained largely unresolved for nearly 14 years. In the meantime Iceland has become a Party to AEWA, and the same concerns have arisen in relation to its obligations under the Agreement.

As detailed in this report, the Mission has seen evidence of good progress in many areas, and the people and organisations concerned are to be commended on this. There are still significant areas of weakness however, and in the Mission's view the overall pace of progress remains slower than it should be. Until all the changes to systems and practices indicated in this report as being necessary are completed, a risk of damage to waterbird populations persists.

Elements relating particularly to AEWA

Iceland became a Party to AEWA in June 2013. In joining the Agreement, all Parties commit to the Agreement's fundamental principle of taking measures to maintain migratory waterbird species in a favourable conservation status or to restore them to such a status. According to the Terms of Reference for the present Mission (see section 2 above), a risk of incompatibility between Iceland's forestry policy and its AEWA obligations was perceived potentially to arise (in particular) in respect of the Agreement's Articles II.1 (maintaining species in favourable conservation status); II.2 (the precautionary principle) and III.2 (d) (maintaining a network of habitats throughout migratory ranges). There was also seen to be relevance in Article III.2 (e) (investigating problems and seeking to implement remedies), and in sections of the AEWA Action Plan which concern protected areas (3.2.1), wise use of wetlands and avoiding habitat degradation (3.2.3), habitat conservation strategies (3.2.4) and impact assessment (4.3.1).

Most of these issues are echoed in the various parts of the specific Recommendation adopted previously under the Bern Convention, and so the comments made on those below are applicable. One added aspect is AEWA's reference to the precautionary principle: as discussed in section 6 above, this has been incorporated into the revised Icelandic Nature Conservation Act which came into effect in 2015. To become a reality at the level of implementation, it will need to feature visibly in the day-to-day operation of (for example) the Environmental Impact Assessment regime (see section 7 and Recommendation 7 above).

Another additional element appears in the Mission Terms of Reference, where mention is made of the possible implications for relevant ecosystem services. This has not been considered in any depth, except to acknowledge that there are such implications, for example in light of the fact that Iceland's tourism economy is strongly linked to its richness of natural habitats and wildlife. Research has indicated that Icelandic nature is what attracts most foreign visitors to the country[55], and this link is well appreciated by the public. IINH has identified ecosystem services associated with different habitat types including wetlands; but the Mission has not investigated the details of this.

As mentioned in section 10 above, at the time of writing the Environment Ministry is discussing a proposed contract with IINH for the latter to assist with the implementation of AEWA in Iceland, following the country's relatively recent accession to the Agreement. The Mission supports this move.

Recommendation 2. Finalise and activate as soon as possible the proposed contract between the Environment Ministry and IINH for a project supporting the implementation of AEWA; share details of the contract as soon as possible with the Secretariats of the Agreement and the Convention; consider the scope for involving external facilitation; and include details of an appropriate scheme for monitoring, evaluating and communicating the project's outcomes.

55 Ministry for the Environment, Iceland (2006), *op cit*.

Elements relating particularly to Bern

Recommendation No. 96 adopted by the Bern Convention Standing Committee in 2002 has been the foundation of the long-running international dialogue with Iceland on forestry and waterbirds which has culminated in the present Mission. The text of the Recommendation lists seven recommended actions: these are reproduced below, followed by a summary comment on the present Mission's findings in relation to each one.

(From Recommendation No. 96):

Recommended action 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.

- Finding of the present Mission: In some ways through hosting the present Mission, Iceland has marshalled some of the ingredients of such an assessment, but this is only a start, and otherwise an environmental assessment of the policy has not been carried out. See the discussion in section 7 and Mission Recommendation 4. Note also that the present report has addressed only potential implications for waterbirds and their habitats, whereas the original Bern Recommendation relates to all habitats and species protected under the Convention.

Recommended action 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.

- Finding of the present Mission: The Icelandic Institute of Natural History's "Natura Iceland" project is expected to produce a much improved knowledge base concerning areas of high biological value, and a list of ASCIs, when the results of this work become available later in 2016: see section 6. Significant efforts are required as a matter of urgency to ensure that this information will be systematically used in relevant planning processes and that Iceland's ASCI list is promptly finalised so that Emerald designations can follow - see Mission Recommendations 3, 5, 8 and 12.

Recommended action 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.

- Finding of the present Mission: Some afforestation takes place on eroded land, and a contribution to planting targets is being made in this way; although this is usually not because it has been directed away from areas of high biodiversity value. In fact very little "directing" takes place, given the predominantly reactive nature of the existing systems for control and support - see discussion in sections 3, 4 and 5. Some safeguards are applied to protected sites and habitats including wetlands, but doubts remain about the adequate application of these to partially modified wetlands and their ability to address indirect effects. A more strategic approach is advocated (Mission Recommendation 5) supported by improved guidance and advice (Mission Recommendations 8 and 12), and there is scope for positive incentives also to play a role (Mission Recommendation 13).

Recommended action 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.

- Finding of the present Mission: Forestry, planning and nature protection have all been brought under the Ministry for Environment and Natural Resources, but there is still concern that departments and agencies operate in a less integrated way than they could. See the discussion in section 9 and Mission Recommendation 9, which also addresses consultation (but not appeal mechanisms, which the Mission has not explored).

Recommended action 5:

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

- Finding of the present Mission: Networking as such was not explored, although the Mission is aware that Iceland is implementing a spatial information infrastructure based on the EU INSPIRE Directive[56] which may help. Open availability of environmental data will be important for implementing many of the Mission's Recommendations.

Recommended action 6:

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

- Finding of the present Mission: Iceland adopted a National Biodiversity Strategy in 2008 and an accompanying Action Plan in 2010. The Mission is however not aware of any particular programme of activities to implement these, and they also now require updating. See Mission Recommendation 10.

Recommended action 7:

Designate areas for inclusion in the Convention's Emerald Network of Areas of Special Conservation Interest.

- Finding of the present Mission: Some progress in identifying sites has been made, but successive timeframes for completing designations have seriously slipped - see section 6. Accelerated efforts are required - see Mission Recommendation 3.

Recommendation 1. Following the issuance of the recommendations by the 36th meeting of the Bern Convention Standing Committee (15-18 November 2016) and by the 12th meeting of the AEWA Standing Committee (31 January - 1 February 2017), develop a schedule and clear programme of work to implement the recommendations in this report. This should include details (for each one) of the lead person responsible, along with the timetable (with key milestones where applicable) and the means by which progress will be monitored and evidenced. These should be submitted to the respective Standing Committees through the AEWA and Bern Convention Secretariats by 30 April 2017.

It is hoped that acceptance by the Bern Standing Committee will signify that the schedule and proposed programme of work supersedes the Committee's Recommendation No. 96 of 2002. Progress will be reviewed by the Standing Committees of the Convention and the Agreement on an annual basis thereafter. *[See section 11]*.

[56] Directive 2007/2/EC (2007) on establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).

12. RELATING THE MISSION'S FINDINGS TO ITS AGREED OBJECTIVES (TERMS OF REFERENCE)

As described in section 2 above, the scope of the joint Mission to Iceland was agreed between the Icelandic Ministry for the Environment and Natural Resources, the AEWA Secretariat and the Bern Convention Secretariat in a Terms of Reference document which specified six objectives (see Annex 3). (Other parts of that document covered the background to the case and an initial outline programme for the Mission, both of which have been incorporated into other parts of this report).

The findings in this report respond to the six objectives as detailed below.

Objective 1: *"To assess the projected impact of the Icelandic forestry policy on the populations of AEWA-listed migratory waterbird species, on their habitats, in particular wetlands, and their ecosystem services".*

- Findings of the present Mission: This objective covers a large part of the work done by the Mission, and the relevant findings are discussed throughout sections 3-10 and Annex 4 of this report. See also paragraphs 1-7 of the Summary.

Objective 2: *"To identify and consider the possible cumulative impacts on the waterbird habitats alongside possible afforestation from other factors, such as agricultural conversion, recreational infrastructure development and climate change, including climate-induced regeneration of natural tree species".*

- Findings of the present Mission: A brief consideration of cumulative impacts involving factors other than forestry is contained in paragraphs 15-16 of Annex 4.

Objective 3: *"To consider whether the Icelandic forestry policy complies with the obligations of Iceland under AEWA and Bern".*

- Findings of the present Mission: This issue is the focus of section 11 of the report. See also paragraph 10 of the Summary.

Objective 4: *"To review the progress made so far by the Government of Iceland in response to Bern Convention Recommendation No. 96 (2002) and to assess its contribution to addressing the points of concern as indicated in that Recommendation".*

- Findings of the present Mission: This issue is a major part of section 11 of the report, which enumerates the Mission's findings in relation to each of the seven elements of the Bern Convention Recommendation. See also paragraph 9 of the Summary.

Objective 5: *"To compile recommendations to the Government of Iceland on practical measures for the future planning, evaluating, consulting upon and implementing afforestation activities in Iceland, as well as maintaining and restoring wetland values and services; so that such developments will take place in ways which will be compatible with the Party's obligations under AEWA and Bern, in relation to the conservation of migratory waterbirds and their habitats".*

- Findings of the present Mission: The Mission has made a total of thirteen recommendations arising from its visit to Iceland and its review of the issues. These are presented together at the head of this report, and also individually in the relevant sections of the report where they arise from the analysis. See also paragraph 8 of the Summary.

Objective 6: *"To propose a monitoring plan for the implementation of the recommendations".*

- Findings of the present Mission: The proposal for this monitoring plan is contained in the Mission's Recommendation 1 (see report section 1).

13. CONCLUSION

It is hoped that a real willingness now exists to develop forestry in Iceland in a manner that minimises negative impacts on populations of waterbirds and on wetlands, and that this report is seen as providing the basis for this.

The Mission suggests that there is considerable scope to avoid further impacts of this kind by implementing the measures outlined in this report, including funding an effective monitoring regime for waterbirds and wetlands; putting in place an effective network of protected areas for waterbirds and wetlands, including by completion of the Emerald Network; using existing habitat mapping to underpin a national indicative forestry strategy using a zonal approach to future planting and guiding forestry away from areas of high waterbird interest irrespective of the habitat classes involved; and using government funding to encourage forestry to develop in this environmentally friendly way. Such an integrated way of working should be supported by enhanced guidance from all levels of government (national to local) and by assessing the cumulative effects of such developments irrespective of the size of individual projects.

It is clear that large areas of the Icelandic lowlands have been subject to agricultural intensification including widespread drainage in the past. Whilst this has resulted in modification of many areas of wetland, these areas still remain as wetlands, holding very significant populations of breeding waterbirds overall and being important habitats in their own right. It is important that conservation action for waterbirds includes these areas in future. It is apparent that there is an opportunity to demonstrate how the agricultural system in these areas can be used to support waterbird populations in the future while also proving to be productive in agricultural terms. Indeed, it seems that most farmers wish to retain a farming livelihood rather than to move into forestry. This is a good basis on which waterbirds and farmers can coexist positively in future.

Importantly, the Mission was informed about a variety of changes and possible changes in the future management of forests and of forest planting. Notable among these is the recent move to empower local communities in terms of approving forest schemes below a certain size limit. Whilst this move will allow local "buy-in" to any scheme, it is important too to retain an overview of the total number and extent of schemes. It seems that guidance, advice and support will be required from the national level on how assessments of such proposals should be undertaken in order to minimise any impact on waterbirds and wetland areas. Such support should be provided as soon as possible.

Finally, it is a firm conclusion of this Mission (and a view shared by those consulted) that solutions to the problems identified in this report are eminently achievable, given sufficient political and administrative will. Taken together, and if acted on promptly, the suggestions made here could form the basis of the fully effective implementation of Bern and AEWA's requirements as far as forestry and waterbirds in Iceland is concerned. This could mark a fresh beginning; and given all the lessons learned along the way, Iceland could then acquire a position of positive international leadership on these issues.

ANNEX 1. ACKNOWLEDGEMENTS

The implementation review processes operated by both AEWA and the Bern Convention are dependent on broad and open engagement by the host governments involved and by a variety of relevant stakeholders in each case. Particular thanks for hosting the joint Mission to Iceland are due to Björn Helgi Barkarson and Sigurður Á. Þráinsson of the Ministry for the Environment and Natural Resources, who expertly undertook the overall coordination of logistical and other arrangements.

The Ministry, the Forest Service, the Planning Agency, the Institute for Natural History, Fuglaverndarfélag Íslands and the Royal Society for the Protection of Birds all provided useful information in advance of the Mission; and Jolanta Kremer (UNEP/AEWA Secretariat) and Ivana d'Alessandro, Veronique de Cussac and Eladio Fernandez-Galiano (Bern Convention Secretariat/Council of Europe) contributed invaluably to the preparations.

The success of this Mission is mainly due to the hugely constructive spirit in which it was approached by all of the individuals and institutions named in Annex 2 below, and the Mission team expresses its profound gratitude to them all.

ANNEX 2. MISSION PROGRAMME, PARTICIPANTS AND CONSULTEES

The **Mission team** comprised the following personnel:

Prof Colin Galbraith	Independent international expert and Chair of the review.
Mr Dave Pritchard	Independent international expert and report compiler.
Mr Sergey Dereliev	Technical Officer, UNEP/AEWA Secretariat.
Ms Iva Obretenova	Secretary of the Bern Convention, Bern Convention Secretariat.

Consultations in Iceland were held with the following:

Ministry for the Environment and Natural Resources

Ms Sigríður Auður Arnadóttir	Permanent Secretary
Mr Björn Helgi Barkarson	Head of Division, Dept of Land and Natural Heritage.
Mr Sigurður Á. Þráinsson	Head of Division, Dept of Land and Natural Heritage and AEWA National Focal Point.

National Environment Agency

Ms Þórdís V. Bragadóttir	Specialist, Department of Nature.
Ms Kristín S. Jónsdóttir	Specialist, Department of Integration.
Ms Sigrún Ágústsdóttir	Head of Department of Integration.

Icelandic Forest Service

Mr Þröstur Eysteinsson	Director.

National Planning Agency

Mr Jakob Gunnarsson	Head of Department of Environmental Assessments.
Ms Birna Árnadóttir	Planning specialist for Department of Municipality Planning.

Icelandic Institute of Natural History

Mr Jón Gunnar Ottósson	Director and Bern Convention National Focal Point.
Mr Trausti Baldursson	Director of Ecology and ConsultancyDepartment.
Mr Kristinn Haukur Skarphéðinsson	Head of Zoology, Wildlife Ecologist.
Mr Guðmundur Guðmundsson	Animal Ecologist.
Mr Ólafur K. Nielsen	Ecologist.

Icelandic Forestry Association

Mr Brynjólfur Jónsson	Director.
Mr Aðalsteinn Sigurgeirsson	Board Member.

Icelandic Farmers Association

Mr Sigurdur Eythórsson	Director.

Fuglaverndarfélag Íslands (BirdLife in Iceland)

Ms Hólmfríður Arnardóttir	Director.
Mr Tómas Grétar Gunnarsson	Director of South Iceland Research Centre of the University of Iceland and Board Member of Birdlife in Iceland.
Mr Jóhann Óli Hilmarsson	Board Member of Birdlife in Iceland.

Royal Society for the Protection of Birds (BirdLife in UK)

Mr Lloyd Austin	Head of Conservation Policy, RSPB Scotland.

University of Iceland

Ms Þóra Ellen Þórhallsdóttir	Professor in Biology at the University of Iceland.

PROGRAMME

23 May 2016 (pm)	Arrival in Reykjavik; meeting of the Mission team.
24 May 2016 (am)	Meeting with Ministry for the Environment and Natural Resources.
(pm)	Meeting with Icelandic Institute of Natural History.
	Meeting with Fuglaverndarfélag Íslands.
25 May 2016 (am)	Meeting with National Planning Agency.
	Meeting with Icelandic Forest Service.
(pm)	Meeting with Icelandic Forestry Association.
	Meeting with University of Iceland.
	Meeting with Icelandic Farmers Association.
	Meeting with National Environment Agency.
	Briefing for field visits.
26 May 2016	Field visits to examples of forested sites, new planting sites, wetlands and other conservation areas, eroded areas and farms; accompanied by representatives of Environment Ministry, Forest Service, Natural History Institute, University, Fuglavernd and RSPB.
	Locations:

- Þingvellir
- Lyngdalsheiði
- Laugarvatn
- Múli
- Ofan Gullfoss
- Reykholt/Flúðir
- Pollengi - horft yfir
- Spóastaðir
- Sandlækjarmýri
- Friðland í Flóa

27 May 2016 (am)	Meeting with Ministry for the Environment and Natural Resources.
(pm)	Meeting of the Mission team.
28 May 2016	Departure from Reykjavik.

ANNEX 3. MISSION TERMS OF REFERENCE

1. Introduction

Iceland is second only to Russia in its importance as a breeding ground for migratory waterbirds in the AEWA region. Most of these species are subject to possible impacts from large-scale state-subsidised afforestation of the lowlands, an issue which has been the focus of international attention since 2001 through the Bern Convention.

A risk of incompatibility between Iceland's forestry policy and its AEWA obligations potentially arises (in particular) in respect of Agreement Articles II.1, II.2 and III.2 (d). Sustainable solutions however appear possible through impact assessment, habitat protection, restoration, strategic planning and exchange of experience with other Parties who have experience of analogous situations. This AEWA Implementation Review Process, in conjunction with the Bern Convention, will offer a coordinated mechanism for assisting the Government to elaborate practical strategies for implementing the Icelandic forestry policy, particularly with regard to lowland afforestation, in ways which are compatible with its obligations under the Agreement.

2. Background

2.1 Icelandic afforestation policy, legislation, and recent changes

Icelandic forestry policy, under laws 32/1991, 93/1997, 56/1999 and currently 95/2006, expresses a target of afforesting a minimum of 5% of each region's lowlands (land below the 400m contour) by the year 2040 (the target is contained in the legislation itself).

Such afforestation predominantly involves non-native species such as larch, spruce, pine and poplar, though some native birch is also planted. The purpose is mainly for timber production, though some planting is also undertaken to provide windbreaks around fields, and other social and environmental benefits (including carbon capture) are also cited.

The plantable lowlands consist mainly of grasslands, wetlands and heath, plus some cultivated areas. Most of this is privately owned, and afforestation is subsidised by government loans covering 97% of establishment costs, with landowners retaining 85% of their income on forest product sales. Suggestions have been made to accelerate planting by incentivising it still further, eg by providing for owners to generate annual revenue by leasing their land to a forestry fund (see http://www.althingi.is/altext/143/s/0273.html - in Icelandic).

Forest authorities reportedly consult environmental authorities "to ensure that no species of animals will be threatened due to afforestation" (Government reports to Bern Convention, 2001 and 2014). Forest authorities have undertaken not to drain undisturbed wetlands; but this leaves at risk of afforestation those large areas of wetlands that have experienced some drainage in the past but remain of extremely high value. In 2014 the Environmental Impact Assessment Act 106/2000 was amended so that now all afforestation projects regardless of size are subject to EIA screening process. Also the National Planning Act 123/2010 was amended so now forestry projects are subject to a permit from the municipality. A total of three afforestation projects over 200ha in size and five afforestation projects in protected areas have undergone EIA screening process resulting in the conclusion that a full EIA was not necessary for these projects.

A revised nature conservation law (60/2013) was approved by Parliament in 2013, including strengthened measures for wetlands and other habitats. The Parliament postponed its entry into force until November 2015, implementing some amendments.

In 2007, a committee established by the Ministry of Environment recommended expanding birch woodland to cover 10% of the land area; and in 2013 a similar committee produced a national Forestry Strategy (see http://www.skogur.is/media/ymislegt/Stefna-skogar.pdf - in Icelandic) proposing a new target of 12% forest cover by 2100. Legislation to enshrine this new target in statute is yet to be enacted.

2.2 Projected impact on breeding migratory waterbirds

Iceland is second only to Russia in its importance as a breeding ground for migratory waterbirds in the AEWA region, and in Europe it is equalled only by the Netherlands in its shorebird breeding density. It supports the most important breeding populations in Europe for six species of waders, and is the second most important country for three. For six subspecies it hosts proportions of the breeding populations ranging from 85-100%. The entire population of the Greenland White-fronted Goose stages in lowland areas of Iceland on spring and autumn migration.

Four species (Black-tailed Godwit *Limosa limosa*, Dunlin *Calidris alpina*, Snipe *Gallinago gallinago* and Redshank *Tringa totanus*) are classed by BirdLife International as having an unfavourable conservation status in Europe. Black-Tailed Godwit is classed by IUCN as globally Near Threatened (though increasing, including the Icelandic subspecies), and is the subject of an AEWA Single Species Action Plan. Black-tailed Godwit and Dunlin are identified as priority species within CAFF's Arctic Migratory Bird Initiative.

All the migratory waterbird species, for which Iceland holds particular importance, rely on open ground habitats, especially lowland wet habitats which are now much reduced due to drainage. These are the same areas that are targeted by afforestation. Assessments for the Bern Convention (2001-2008) conclude that afforestation could have a negative impact on 20 species for which Iceland holds internationally important populations, including those for which it is the most important country in Europe. The species most at risk include Golden Plover *Pluvialis apricaria*, Black-tailed Godwit, Whimbrel *Numenius phaeopus*, Redshank, Dunlin, Snipe and Greenland White-fronted Goose *Anser albifrons flavirostris*. Up to 23 of Iceland's 61 Important Bird Areas could be affected.

Wider secondary effects (water depletion, eutrophication, acidification, spread of the invasive alien Nootka Lupin *Lupinus nootkatensis* and other invasives, and especially habitat fragmentation and predation) are also of concern; as is the compounding of other ongoing pressures on habitat in the species' ranges (climate change, scrub regrowth on abandoned grazing lands, etc.).

Impacts on Icelandic birds will be felt in countries that share the same flyway, potentially compromising conservation efforts in those countries - particularly in the UK and Ireland (whose entire populations of wintering Greylag Geese *Anser anser* and Black-tailed Godwits come from Iceland, and where most of Iceland's Golden Plovers, Snipes and Redshanks overwinter), but also elsewhere in Europe and Africa.

2.3 Potential incompatibility with obligations under AEWA

Iceland became a Party to AEWA in June 2013. In joining the Agreement, all Parties commit to the Agreement's fundamental principle of taking measures to maintain migratory waterbird species in a favourable conservation status or to restore them to such a status. A risk of incompatibility between Iceland's forestry policy and its AEWA obligations potentially arises (in particular) in respect of AEWA Articles II.1 (maintaining species in favourable conservation status); II.2 (the precautionary principle); and III.2 (d) (maintaining a network of habitats throughout migratory ranges). There is relevance also in Article Art III.2 (e) (investigating problems and seeking to implement remedies), and in sections of the Action Plan which concern protected areas (3.2.1), wise use of wetlands and avoiding habitat degradation (3.2.3), habitat conservation strategies (3.2.4) and impact assessment (4.3.1).

2.4 History of the case under other international frameworks

Iceland ratified the Ramsar Convention in 1977, the Bern Convention in 1993 and the Convention on Biological Diversity in 1994. The Standing Committee to the Bern Convention (its governing body) has taken an interest in the Icelandic forestry policy, particularly with regard to lowland afforestation, since 2001, and mandated an "on the spot appraisal" which reported in 2002, confirming the potential threat to migratory waterbirds. Based on the outcomes of the on-the-spot appraisal the Standing Committee of the Bern Convention adopted Recommendation No. 96 (2002), urging the Government of Iceland to undertake seven specific actions, including impact assessment, habitat protection and strategic planning.

BirdLife International submitted reports to the Bern Convention in 2007 and 2008, noting that some research work had advanced, but otherwise alleging that the satisfactorily implementation of any of the seven points of Recommendation 96 had been lacking. The Government detailed some measures it was taking to gather information, and reported the adoption of a National Biodiversity Strategy. In light of the newest developments described above, the issue was raised again with the Bern Standing Committee in December 2013. The Committee agreed to review the issue in 2014, in the context of monitoring the implementation of the 2002 Recommendation.

Reports were submitted by both the Government and BirdLife International to the 34th meeting of the Bern Convention Standing Committee in December 2014. The Committee took note of these reports and congratulated the Icelandic authorities for accepting to undergo an AEWA IRP. It also confirmed the readiness of the Bern Convention for joining and contributing to the IRP visit as well as instructed the Bern Convention Secretariat to report back on the findings of the IRP mission at the next meeting of the Standing Committee in December 2015.

3. Objectives of the AEWA IRP mission

The principal objectives of the AEWA IRP mission to Iceland are:

- to assess the projected impact of the Icelandic forestry policy on the populations of AEWA-listed migratory waterbird species, on their habitats, in particular wetlands, and their ecosystem services;
- to identify and consider the possible cumulative impacts on the waterbird habitats alongside possible afforestation from other factors, such as agricultural conversion, recreational infrastructure development and climate change, including climate-induced regeneration of natural tree species;
- to consider whether the Icelandic forestry policy complies with the obligations of Iceland under AEWA and Bern;
- to review the progress made so far by the Government of Iceland in response to Bern Convention Recommendation No. 96 (2002) and to assess its contribution to addressing the points of concern as indicated in that Recommendation;
- to compile recommendations to the Government of Iceland on practical measures for the future planning, evaluating, consulting upon and implementing afforestation activities in Iceland, as well as maintaining and restoring wetland values and services; so that such developments will take place in ways which will be compatible with the Party's obligations under AEWA and Bern, in relation to the conservation of migratory waterbirds and their habitats;
- to propose a monitoring plan for the implementation of the recommendations.

4. Expected outputs

Following the objectives of the mission, the IRP mission team will produce a report of its findings containing, amongst other things, a set of recommendations. The report will be submitted to the AEWA Standing Committee for consideration. At its discretion, the Standing Committee will make recommendations to the Government of Iceland.

This report will be also submitted to the attention of the appropriate bodies of the Bern Convention.

5. Provisional lists of mission team participants and other stakeholders to be involved with their respective roles and responsibilities

5.1 IRP mission team

- Independent international expert
- Independent local expert
- Report compiler

- UNEP/AEWA Secretariat
- Bern Convention Secretariat

The mission will be led by the UNEP/AEWA Secretariat and the independent international expert will assume chairing functions. The members of the IRP mission will be interviewing the other involved stakeholders and will be requesting information, as needed. Under the overall responsibility of the independent international expert assisted by the report compiler, the IRP mission team will be producing the mission report with input from all its members.

5.2 Other stakeholders

- Icelandic Ministry of Environment / Iceland Forest Service
- Icelandic Institute of Natural History
- University of Iceland
- Icelandic Forestry Association
- Fuglavernd (BirdLife Iceland) / BirdLife International / RSPB
- Local land owners

These stakeholders will be requested to meet the IRP mission team during the visit to Iceland and to be interviewed. They may be also requested to provide information in oral or written form before or after the visit. The Ministry of Environment will be invited to comment on the draft report.

6. Provisional dates and itinerary

23-27 May 2016

Day 1 (23May)	Arrival in Reykjavik; meeting of the IRP mission team
Day 2 (24 May)	Meetings with the Ministry of Environment, the National Planning Agency, the Icelandic Institute of Natural History and representatives of regional afforestation programmes
Day 3 (25 May)	Meetings with the Iceland Forestry Service, Fuglavernd (BirdLife Iceland) / BirdLife International / RSPB, the Icelandic Forestry Association and the University of Iceland
Day 4 (26 May)	Field visit to afforested areas and areas planned for afforestation and meetings with local land owners; meeting of the IRP mission team
Day 5 (27 May)	Departure from Reykjavik

7. Preparatory phase and contact points

The preparatory phase for the on-the-spot assessment mission will commence once the Terms of Reference have been agreed between the UNEP/AEWA Secretariat and the Icelandic Ministry of Environment. Throughout this phase the Ministry of Environment, and possibly other stakeholders, will be requested to provide information, references and documentation in English to the IRP mission team in order to allow for effective preparation.

The contact point for the IRP mission will be the UNEP/AEWA Secretariat represented by the AEWA Technical Officer Mr. Sergey Dereliev (sergey.dereliev@unep-aewa.org; tel.: +49-228-815-2415). The contact point for the Icelandic Ministry of Environment will be Mr. Björn Helgi Barkarson (bjorn.helgi.barkarson@uar.is; tel.: +354-545-8600).

8. Funding and organization

Funding for covering costs of the IRP mission team will be generated through the UNEP/AEWA and Bern Convention Secretariats and international logistical arrangements will be done and/or coordinated by the UNEP/AEWA Secretariat. UNEP/AEWA Secretariat will cover the fees for the consultants, while their travel and per diems will be covered by the Bern Convention Secretariat. The Icelandic Ministry of Environment will be requested to organize and provide local logistics, such as arranging meetings scheduled with all stakeholders, provide local transportation for the IRP mission team free of charge, field visits, including transportation for all participants free of charge.

9. Tentative time schedule

January – May 2016	Preparatory phase
(end) May 2016	Visit of the mission to Iceland
June – September 2016	Production of the draft report
(mid) September 2016	Consultation of the draft report with the Icelandic Ministry of Environment
(mid) October 2016	Finalization of the report
(early) November 2016	Submission of the report to the AEWA Standing Committee and the appropriate bodies of the Bern Convention

ANNEX 4. ICELAND'S WATERBIRDS AND THEIR VULNERABILITY TO THE IMPACTS OF FORESTRY

Species, numbers and distribution

Iceland is second only to Russia in its importance as a breeding ground for migratory waterbirds in the AEWA region. It supports the most important breeding populations in Europe for six species of waders, and is the second most important country for three. For six subspecies it hosts proportions of the breeding populations ranging from 85-100%. The entire population of the Greenland White-fronted Goose stages in lowland areas of Iceland on spring and autumn migration.

Table A4.1: Key waterbirds (excluding seabirds) in Iceland[57]

Species	Numbers in Iceland	Proportion of wider population/s
BREEDING		
Greylag goose *Anser anser*	20,000-30,00 pairs	16-17% of European population.
Whimbrel *Numenius phaeopus*	600,000-750,000 individuals	c75% of the European population and 99% of the world population of the *islandicus* subspecies.
Golden Plover *Pluvialis apricaria*	930,000 individuals	42-54% of the European population.
Ringed Plover *Charadrius hiaticula*	30,000-50,000 pairs	23-25% of the European population. 45-52% of the world population of the *psammodroma* subspecies.
Black-tailed Godwit *Limosa limosa*	47,000 individuals	15-18% of the European population. 59% of the African-Eurasian Flyway population. 100% of the world population of the *islandica* subspecies.
Redshank *Tringa totanus*	150,000 - 400,000 individuals	18-23% of the European population. 100% of the world population of the *robusta* subspecies.
Purple sandpiper C*alidris maritima*	90,000 individuals	36-40% of the European population. 100% of the world population of the *littoralis* subspecies.
Snipe *Gallinago gallinago*	180,000-300,000 pairs	16-19% of the European population. 95% of the world population of the *faroensis* subspecies.
Dunlin *Calidris alpina*	200,000-300,000 pairs	53-67% of European population. 85-95% of the world population of the *schinzii* subspecies.
Red-necked Phalarope *Phalaropus lobatus*	30,000-50,000 pairs	23-35% of the European population.
Grey Phalarope *Phalaropus fulicarius*	40-50 pairs	Small populations compared with world population of c2M, but of important local interest in the region.
PASSAGE		
Greenland White-fronted Goose *Anser albifrons flavirostris*	22,200 individuals	100% of the world population.

[57] Sources for data in Table A4.1:

Reports to meetings of Bern Convention Standing Committee (various years) – see reference details in Section 2 above.

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

Wilson, J (2014). Arctic Migratory Birds Initiative: Breeding bird species in the in the low and high arctic - priority species for Iceland. Unpublished.

Delany, S, Scott, D, Dodman, T and Stroud, D (Eds) (2009). An atlas of wader populations in Africa and Western Eurasia. Wetlands International, Wageningen, The Netherlands.

Wetlands International (2015). Waterbird Population Estimates. Online database at http://wpe.wetlands.org/

Breeding bird densities are higher in Iceland than in many other countries, being equalled in Europe for shorebirds only by The Netherlands[58]. The highest densities are in the flatter areas of the south-west and north-east of the country, peaking in wetland habitats for Dunlin, Snipe, Whimbrel and Black-tailed Godwit, in grassland for Oystercatcher and Redshank and in nutrient-poor heathland for Golden Plover[59].

Importantly, the Icelandic Institute for Natural History (IINH) has been engaged in a research and data collation project from 2012-16 ("Natura Iceland") which expects to produce national distribution maps for key species[60] and improved population estimates to update those in the table above.

Conservation status

Four of the wader species in Iceland are classed as having an unfavourable conservation status in Europe (Black-tailed Godwit, Dunlin, Snipe and Redshank)[61]. Black-Tailed Godwit is classed as globally Near Threatened (though increasing, including the Icelandic subspecies)[62], and is the subject of an AEWA Action Plan[63]. Black-tailed Godwit and Dunlin are identified as priority species within CAFF's Arctic Migratory Bird Initiative[64]. Golden Plover, Dunlin (specifically the *schinzii* subspecies), both of the phalaropes and Greenland Whitefront have been identified by the Bern Convention as species in need of specific habitat conservation measures[65], and the Greenland Whitefront is also the subject of an AEWA Action Plan[66].

Of the six wader species which are at substantial risk from forestry (see below), the population estimates of two (Dunlin and Snipe) have decreased significantly, while the population estimates of four (Black-tailed Godwit, Golden Plover, Whimbrel and Redshank) have increased significantly. These changes are however thought generally to reflect improved population estimation methods rather than actual changes in the populations themselves[67], except in the case of Black-tailed Godwit[68].

Threats and impacts in Iceland

As mentioned above, the appraisal for the Bern Convention in 2002 concluded that afforestation with non-native tree species in Iceland had a clear potential to have negative effects on the populations of 20 species for which Iceland holds internationally important populations. Other threats exist, not least the possible impacts of climate change; but afforestation is seen as the most extensive and immediate threat to these birds.

All the migratory waterbirds concerned rely on open ground habitats, especially wetter vegetated areas and mainly below the 200m contour. Open lowland areas are also those potentially subject to afforestation, which eventually makes the habitat unsuitable for these birds and displaces them. The consequent reduced overall extent of suitable habitat (which is already suffering from other factors - see below) reduces the numbers of birds the country can support.

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[58] Amalds, A, Gudmundsson, J, Oskarsson, H, Brink, SH, and Gisladottir, FO (2016). Icelandic inland wetlands: characteristics and extent of draining. Wetlands: June 2016; Society of Wetland Scientists.

[59] Jóhannesdóttir, L (2013). Comparing biodiversity of birds in different habitats in South Iceland. MS thesis, Agricultural University of Iceland.

[60] Black-tailed Godwit, Redshank, Dunlin, Red-necked Phalarope, Snipe, Golden Plover, Whimbrel, Ringed Plover, Oystercatcher, Purple Sandpiper, Arctic Skua, Rock Ptarmigan, Meadow Pipit, Redwing, Wheatear, Common Redpoll and Snow Bunting.

[61] BirdLife International (2004). Birds in Europe: population estimates, trends and conservation status. BirdLife International, Cambridge, UK.

[62] IUCN Red List for birds, ver 3.1 http://www.iucnredlist.org .

[63] AEWA (2008). International Single Species Action Plan for the conservation of the Black-tailed Godwit. AEWA Technical Series No. 37.

[64] Wilson, J (2014), *op cit.*

[65] Bern Convention Standing Committee (1998). Recommendation No. 6 (1998) on Species requiring specific habitat conservation measures. Adopted by the Standing Committee at its 18th meeting, 4 December 1998, Strasbourg; and amended at the Committee's 31st meeting on 2 December 2011, Strasbourg.

[66] AEWA (2012). International Single Species Action Plan for the conservation of the Greenland White-fronted Goose. AEWA Technical Series No. 45.

[67] Bern Convention Secretariat (2002b), *op cit*; Bern Convention Secretariat (2007a), *op cit*.

[68] Delany et al., (2009), *op cit*; and IINH comments during the mission.

Some particular aspects of habitat use by waterbirds in Iceland are apparent. Snipe use open forest (mostly native birch) as well as marshes and wet meadows, and thus appear more varied in their habitat use in Iceland than they are for example in the UK - hence some caution is required in extrapolating assumptions on this from one country to another. Studies specifically in Iceland however show that Snipe, Dunlin, Whimbrel and Black-tailed Godwit occur in their highest densities in wetland areas (with the Godwit favouring shrubbier wetlands), while the highest densities of Oystercatcher and Redshank are in grassland and of Golden Plover in nutrient-poor heathland[69]. The Greenland White-fronted Goose depends on marsh vegetation: it is known to be particularly site-faithful when staging in Iceland on migration and hence is especially vulnerable if displaced[70].

The quality and extent of wetland habitat has already diminished dramatically over the years. Almost half of the wetland area that previously existed in Iceland has been lost since the time of settlement[71]. After the second World War this accelerated significantly with subsidised drainage for agricultural purposes. An important resource of around 900,000 ha of inland wetlands nevertheless remains, constituting just under one-fifth of the vegetated surface of the island. Of this remainder nearly half has itself been affected by drainage in some way, rising to 70% in the lowlands and 90% in the southern lowlands[72,73]. Restoration efforts are now being made in several places.

Although remaining intact wetlands are obviously a key conservation asset and are recognised as such by habitat protection laws and policies in Iceland (see section 6 of the present report), many areas that have suffered some partial drainage (including those classified by the Agricultural University as "semi-wetland") are also among the most important breeding waterbird sites in the country, and are highly vulnerable to afforestation.

BirdLife International has recognised 61 Important Bird Areas in Iceland and considers that as many as 23 of these could be affected by afforestation. Direct damage has already been recorded in at least two cases[74].

Wider secondary, indirect and "edge" effects around plantations are also of concern. These include potential water depletion, eutrophication, acidification, leaching or drift of pesticides, spread of the invasive alien Nootka Lupin *Lupinus nootkatensis* and other invasives, as well as habitat fragmentation and exacerbated predation.

The self-sown spread of trees to areas adjacent to plantations is evident, and this extends the "footprint" of a plantation's impact. Concerns in this regard have already been noted in respect of Sitka Spruce *Picea sitchensis*, Lodgepole Pine *Pinus contorta* and the recently introduced willow *Salix alaxensis* from North America[75]. Spread of Sitka Spruce was witnessed during the Mission at some of the sites visited. The commonly-planted poplar *Populus trichocarpa* seeds prolifically, but thus far has not spread naturally. Its germination is thought to be prevented by the brevity of the Icelandic summer, but serious consideration should be given to the potential for this situation to change dramatically with future changes in climate.

Few empirical studies of impacts on birds from afforestation specifically in Iceland have been carried out. Reference was made during the Mission to one study in 2005 (based on several hundred sample plots in two areas of the south and west of the country) and one in 2012 (based on a large lakeside hill-slope larch plantation which had replaced former native birch cover)[76]. These studies,

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69 Jóhannesdóttir, L (2013), *op cit*.

70 Wilson, HJ, Noriss, DW, Walsh, A, Fox, AD and Stroud, DA (1991). Winter site fidelity in Greenland Whitefronted Goose *Anser albifrons flavirostris*: implications for conservation and management. Ardea 79:287–294.

71 Ministry for the Environment, Iceland (2006). Welfare for the Future - Iceland's national strategy for sustainable development. Statistical indicators 2006.

72 Arnalds et al. (2016), *op cit*.

73 Ministry of Agriculture Wetlands Committee (2006). Wetland restoration 1996-2006. Report.

74 Bern Convention Secretariat (2007b), *op cit*.

75 Bern Convention Secretariat (2015b). Code of Conduct on plantation forestry and invasive alien trees - second draft. Document T-PVS/Inf(2015)1 prepared by G Brundu (University of Sassari) and DM Richardson (University of Stellenbosch) for the 35th meeting of the Standing Committee, Strasbourg, 1-4 December 2015.

76 Both studies remain unpublished, and references are not available.

along with other experience reported to the Mission, indicate that some birds of open-ground habitats initially benefit from fenced exclusion of grazers, but as saplings grow, species such as Golden Plover and Whimbrel disappear. As plantations become established, species such as Redwing and Redpoll move in, accompanied by the Goldcrest, a recent colonist in Iceland which has followed the spread of conifers. Generally the internationally important wetland species suffer at the expense of commoner species.

Impacts from forestry are not felt in isolation. In many cases they will combine with other pressures on bird populations (such as agricultural intensification) to produce compound, cumulative or synergistic effects. The interactions between these influences may be complex, sometimes accumulating undetected until a "threshold" is reached, at which point the habitat or population concerned ceases to be viable.

Two main compounding impacts can be mentioned for Iceland, namely habitat change due to vegetation succession (birch and willow scrub growth) on land where grazing activity has been reduced or abandoned; and climate change. Other factors such as hydroelectric schemes, housing development and predation by escaped North American mink have been cited In the case of migratory species, any threats occurring in other parts of their range must also be taken into account.

Those international migration links mean that impacts on birds breeding and staging in Iceland will be felt in countries that share the same flyway, potentially compromising conservation efforts in those countries For example the entire wintering numbers of Greylag Geese and Black-tailed Godwits in the UK come from Iceland, and the UK is also where most of Iceland's Golden Plovers, Snipes and Redshanks overwinter. Implications also extend to countries elsewhere in Europe and Africa.

Summary

It is clear that Iceland holds very significant populations of threatened waterbirds and has large areas of high quality wetland. Birds nesting and staging in Iceland form a key part of the wider flyway population of the species concerned. It is known from elsewhere that afforestation of wetland habitats can cause significant negative impacts on waterbird populations. These changes may be both direct (e.g. habitat destruction) and indirect (e.g. acidification and edge effects).