

Mission Report

Ramsar in Greenland

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Summary and Recommendations

1. This Ramsar Advisory Mission was triggered by the planned molybdenum mining development at Malmbjerg, requiring the construction of a harbour, airstrip, road, infrastructure and storage facilities in the north-western part of the **Ramsar site N°389 Heden (Jameson Land)** in eastern Greenland. A specific meeting on this planned development took place in Copenhagen on 16 March 2009, as a first part of the Mission, and concluded that the **environmental monitoring** of the baseline (before work on-site is starting) and the subsequent situations (during the construction and during the operating of the facilities) need **to continue** in order

to quantify the real disturbance and the minimum level of bird habitat compensation needed.

2. A first compensation measure should be the designation of the **Ørsted Dal** area as a new, additional Ramsar site, and the provision of a national instrument for inventory, assessment and monitoring of all Ramsar sites in Greenland. Should the monitoring studies on Jameson Land show that the compensation area in Ørsted Dal will not be sufficient to provide full compensation for the settlement of the birds displaced from the affected Gurreholm area, additional areas of compensation need to be identified.
3. It was also concluded that the planned increased mining activities in Greenland merit a second part of the Mission to Greenland to obtain a first-hand impression of selected Ramsar sites and to address wider development challenges exposing Greenland's Ramsar sites, as well as to develop concrete proposals on how best to manage Greenland's wetlands in an integrated way.
4. On 9-14 June 2009 the Mission visited **Ramsar sites N°384 Kitsissunnguit (Grønne Ejland)**, and **N°381 Aqajarua (Mudderbugten) and Sullorsuaq (Kvandalen)** in order to discuss on-site the work to establish management plans for these frequently visited areas, and to plan the installation of a trail for guided visits on one of the islands of Kitsissunnguit. At the same occasion, an exhibit on this Ramsar site was opened in the museum in Aasiaat, prepared by students of the local high school. The Mission also visited the **Ilulissat icefjord** World Heritage site and discussed with the site manager of the municipality the merits of its designation for the Ramsar List, and strongly recommended the authorities to do so.
5. The on-site visits and the exchanges among the different participants in the Mission allowed addressing also wider issues, concerning the wise use of wetlands in general and all Ramsar sites in Greenland, as well as the potential role that Greenland could play for circumpolar cooperation on Arctic wetlands.
6. The largest part of Greenland consists of glaciers and their forelands, alluvial plains, bogs, mires, rivers, lakes, ponds, marshes, wet grasslands, geothermal springs, estuaries, fjords, shorelines and coastal marine areas - all wetland ecosystems covered by the Ramsar Convention. Not many ice-free areas in Greenland do not fall under the Ramsar wetland definition, or are not functionally linked with wetland ecosystems in their respective hydrological catchment basin. It is therefore crucial that the national biodiversity strategy and policy in preparation do recognize the predominant role wetland ecosystems play in Greenland and request that the services derived from the wetland ecosystems for human well-being are valued and paid for.
7. To this end, it is strongly suggested to extend the current biodiversity hot-spot analysis for the Greenland National Park to the entire area of Greenland, to elaborate a **national wetland inventory** and to give due consideration to wetland ecosystems and their services in the **biodiversity policy** in preparation. In relation to this, it is recommended to update the Ramsar site information contained in the 2001 Ramsar site status report by the National Environmental Research Institute (NERI), based on new on-site visits. This should lead to the elaboration of a

monitoring strategy for Ramsar sites and an analysis of potential future Ramsar sites.

8. The designation of 11 Ramsar sites by the Greenland Home Rule Government in 1988 represented a significant event. In 2001, the NERI report on their status made a number of analyses and recommendations. Based on these, and by including new knowledge obtained since, it is suggested to establish a **national network of Ramsar sites** that fully represents the diversity of wetland types and their key ecological and hydrological functions. Beyond the existing sites important for waterbirds, also sites important for sea bird colonies and marine mammals (seals, whales, walruses) should be considered. Ramsar sites represent an important percentage of Greenland's protected areas. The elaboration of **national legislation** providing rules for their protection and wise use is therefore strongly recommended.
9. Finally, the Mission acknowledges the prominent role fundamental ecological research in Greenland has played and continues to play for a better understanding of the ongoing changes in the Arctic environment, and the need for exchange of this knowledge and know-how at circumpolar level. The Mission suggests that wetland ecosystem services become more centre stage of international cooperation in this period of a rapidly changing Arctic climate, and that Greenland use its engagement in the permanent working group on the Conservation of Arctic Flora and Fauna (CAFF) of the Arctic Council (regrouping 8 countries and indigenous people organisations), and the Danish/ Greenlandic presidency of the Arctic Council to work more closely on wetlands with the Ramsar Convention, possibly through the signing of a Memorandum of Understanding.

Introduction

10. The Ramsar Convention gives special attention to assisting Contracting Parties in the management and conservation of listed wetland sites whose ecological character is changing or likely to change as a result of technological development, pollution or other human interference. This is carried out through Ramsar Advisory Missions, a technical assistance mechanism formally adopted by Recommendation 4.7 of the 1990 Conference of the Parties (formerly known as the Monitoring Procedure and the Management Guidance Procedure). The main objective of this mechanism is to provide assistance to countries in solving the problems at particular Ramsar sites related to the maintenance of their ecological character.

Background - mining development in eastern Greenland

11. The Bureau of Minerals and Petrol (BMP), of the Greenland Home Rule Government, asked the National Environmental Research Institute (NERI), of the Danish Ministry of Environment and Energy, to comment on the Environmental Impact Assessment prepared by the Quadra company proposing to develop mining activities in eastern Greenland. As these activities will affect the northwestern part of **Ramsar site N°389 Heden (Jameson Land)**, NERI asked the Ramsar Secretariat for advice in November 2007.

12. In April 2008, Birdlife Denmark (*Dansk Ornitologisk Forening*), one of the five Ramsar international organisation partners (IOP), copied their letter to the Bureau of Minerals and Petroleum, about the plans to construct a harbour, a road and airstrip facilities in the northwestern part of Heden Ramsar site, to the Ramsar Secretariat. In the letter, they express their concern about the disturbance to be created to moulting geese. This triggered a consultative meeting of the national Ramsar focal points in Greenland and Denmark (*Inge Thaulow* and *Sten Asbirk*) with Ramsar's senior adviser for Europe (*Tobias Salathe*) in early May 2008, at the occasion of the 6th European Ramsar Meeting in Stockholm. Further consultations among them took subsequently place by correspondence and during the 10th meeting of the Conference of the Ramsar Parties (COP10) in Changwon, Republic of Korea, in late October 2008.
13. Responding to one of the requirements addressed in Article 2.5 of the Ramsar Convention, the Greenland Home Rule Minister for Mineral Resources and Environmental Matters, *Kim Kielsen*, formally wrote to the Ramsar Secretariat on 8 December 2008, invoking Greenland's "*urgent national interests*" to develop the exploitation of a molybdenum deposit at Malmbjerg. He stated that, given the local circumstances, the socio-economically important mining project outside of the Ramsar site would require the construction of an airstrip, port, road and storing facilities inside the Ramsar site on Jameson Land. His letter and the attached background statement were accompanied by a 36-page report prepared by NERI, providing a "*Preliminary assessment of the impact of Quadra Mining on birdlife in the Heden Ramsar site and proposal for a replacement area*".
14. Subsequent correspondence between the Ministry and the Ramsar Secretariat led to a meeting in the Greenland Representation in Copenhagen on 16 March 2009 between the Spatial and Environmental Planning Agency, i.e. the Ramsar administrative authority in Denmark (*Sten Asbirk*), the Bureau of Minerals and Petroleum (*Deputy Minister Jørn Skov Nielsen, John Telling, Ole Fjordgaard Kjær*) and the Department of Infrastructure and Environment, i.e. the Ramsar administrative authority in Greenland (*Inge Thaulow*) of the Greenland Home Rule Government, the National Environmental Research Institute (*Jesper Madsen, Christian Martin Glabder*) and the Ramsar Secretariat (*Tobias Salathe*). This was the occasion to present and clarify the Malmbjerg mining issues in detail. During the meeting, a common understanding was reached under which conditions the further development of the Malmbjerg mining project and related activities comply with the requirements of the Ramsar Convention.
15. The preliminary assessment report by NERI (cf. paragraph 13), based on literature research and first field investigations in July 2008 (thus compiling *ex ante* baseline data), showed that the construction works and the operating of the infrastructure to be installed are likely to negatively affect the **Gurreholm** area which holds the richest bird concentrations of the Ramsar site in the wet lowlands with a large number of lakes, rivers and marshes. The planned developments are likely to result in the displacement of a large number of pink-footed geese (*Anser brachyrhynchus*) which use the undisturbed area for moulting and breeding, and a number of other breeding birds, including the near threatened Sabine's gull (*Larus sabini*) and whimbrel (*Numenius phaeopus*). Continuation of the field surveys and monitoring of the bird populations are therefore required in order to enable the specialists to

quantify the real disturbance and the minimum level of bird habitat compensation needed.

16. During the meeting it was agreed that the designation of the **Ørsted Dal** area as a new, additional Ramsar site provides a first important step to compensate for the proposal to reduce the Heden Ramsar site by the seriously affected Gurreholm area. However, to this end, field surveys need to be continued, and their future results will have to show, if the Ørsted Dal area will be sufficient to provide full compensation for the settlement of the birds displaced from the affected Gurreholm area. Otherwise, additional settlement areas for displaced birds, e.g. in the Hold With Hope area north of Jameson Land (where field investigations took place in July 2009 and will take place again in June 2010), need to be identified and added to the existing Ramsar site.
17. The meeting agreed that the overall aim of the compensation measures is to respond to Article 4.2 of the Ramsar Convention, requesting Parties to “*compensate for any loss of wetland resources, and in particular create additional nature reserves for waterfowl and for the protection, either in the same area or elsewhere, of an adequate portion of the original habitat*”. This can be translated into the objective that no net decline of the affected species should occur as a result of the activities linked to the Malmbjerg mining project, and that natural habitats, comparable to those to be affected in the Gurreholm area, will have to receive lasting legal protection, e.g. through their designation as Ramsar sites. Such legal protection should be applied as a priority to those habitats for which the continued monitoring will show that they have the capacity to support additional, displaced birds from Gurreholm.

Scope of this report

18. The background statement, supporting the invoking of “*urgent national interests*” to develop mining activities at Malmbjerg, states that Greenland has a small human population with a fragile economy, based essentially on a grant from the Danish Government and on fishery. Declining fishing revenues and the fragility of this industry lead the Greenland Government to search for other economic opportunities, notably the mining of Greenland’s rich oil (offshore) and mineral deposits.
19. The plans by the Greenland Government to establish an aluminium smelter and to extract offshore oil and minerals, such as gold, iron, diamonds, rubies and others, from Greenland’s soils are intended to complement the fragile hunting and fishing economies by new industries and to make the country economically more self-sufficient. These plans emerged at a significant moment when the Greenland Government moved (on the National Day of 21 June 2009) from thirty years of “Home Rule” to “Self-Governance”, providing it with more autonomy from Denmark.
20. With the planned increasing mining activities in Greenland (currently, about 70 exploration licences were delivered) and their likely consequences of increasing pressures on the existing Ramsar sites, it was suggested that a Ramsar Advisory Mission should visit the country briefly, not necessarily to look *in situ* at the specific case of the Heden Ramsar site (which was substantially detailed during the meeting in Copenhagen on 16 March 2009), but to obtain a first-hand impression to

address wider development challenges exposing Greenland's Ramsar sites, as well as to develop concrete proposals on how best to manage Greenland's wetlands in an integrated way.

21. The remainder of this report therefore focuses on the following topics:
 - national policies in place or under development to cover wise use and conservation of wetland ecosystems and their services and their integration into national sustainable development strategies and socio-economic development plans,
 - progress with the development and implementation of a strategic framework for the Greenland contribution to the List of Wetlands of International Importance (Ramsar sites),
 - development of a national programme to build and increase capacities for wetland wise use, in particular through communication, education, training, participation and public awareness (CEPA), and
 - Greenland's role and contribution to international cooperation on wetland wise use in the wider Arctic region.

Wetland wise use in Greenland

22. The largest part of Greenland's non ice-covered land is uninhabited, without installations and devoid of human activity. Due to the logistical difficulties to reach much of this land, biodiversity information, notably on the distribution (in space and time) of flora and fauna species, is still of a very general nature (except for some hunted species), and most often based only on data collected during occasional surveys and field visits, rather than provided through repeated inventories and regular monitoring schemes. However for the commercially exploited species of fish and crustaceans, for some species of birds and marine mammals and for the larger populations of reindeer and muskoxen in western Greenland, monitoring plans are in place.
23. Despite this inherent limitation of baseline data, the Greenland Institute of Natural Resources was able to publish in 2003 a first biodiversity country *study* (Technical Report N°55). Such country studies normally constitute an important first step in the process of elaborating a national biodiversity strategy. Based on this, a biodiversity *policy* document is now in preparation. It should contain specific implementation targets for the period 2010-2015.

A wetland strategy for Greenland

24. The Parties to the Ramsar Convention have identified wetlands (inland and coastal) as key life support systems, in concert with agricultural lands and forests (both are largely absent in Greenland), beyond their status as habitat for important plant and animal species, as vital elements of national and global ecosystems and economies. To draw attention to wetlands, particularly by legislators and the public, the Parties consider the articulation of specific goals and objectives and the identification of clear responsibilities in a national wetland policy document to be an effective tool. This was formalised through the adoption in 1999 of "*Guidelines for developing and implementing National Wetland Policies*," by Resolution VII.6, available at www.ramsar.org or in Ramsar Handbook 2 on "**National Wetland Policies**".

25. It is therefore suggested that the national biodiversity strategy in preparation for Greenland become also a **national wetland strategy**. The reason for this being that glaciers and their forelands, alluvial plains, bogs, mires, rivers, lakes, ponds, marshes, wet grasslands, geothermal springs, estuaries, fjords, shorelines and coastal marine areas are all wetland ecosystems covered by the Ramsar Convention. Looking at the country map, there are not many uninhabited areas in Greenland that do not fall under the Ramsar wetland definition, or are not functionally linked with wetland ecosystems in their respective hydrological catchment basin.

Taking stock of Greenland's wetlands

26. According to Greenland's National Report submitted prior to Ramsar's 10th meeting of the Conference of the Parties in 2008 (COP10), no comprehensive *National Wetland Inventory* is yet available, and information about wetland status and trends is only available for some sites. It is therefore suggested that the authorities plan the elaboration of a comprehensive inventory of all existing wetland types (cf. above) and their distribution in Greenland as a priority. To this end, the Parties to the Convention have adopted in 2005 "*An Integrated Framework for wetland inventory, assessment and monitoring*" (by Resolution IX.1), available at www.ramsar.org or in Ramsar Handbook 11 on "**Inventory, assessment, and monitoring**". The Parties consider that these activities provide the basis for many aspects of successful implementation of the Convention. Disposing of a comprehensive national wetland inventory will not only provide important information on biodiversity and living natural resources, but also on hydrology and the hydrological services provided by these ecosystems, notably in the context of a changing Arctic climate.
27. The global Millennium Ecosystem Assessment was an international work programme that focused on the benefits people obtain from ecosystem services, how changes in ecosystem services have affected human well-being and how ecosystem changes may affect people in future decades. Its synthesis report on wetlands and water, published for Ramsar COP9 in 2005, provides an overview and key messages for wetland management and conservation. The associated Ramsar experts notably underline the urgent need for cross-sectoral focus, integrated river basin management approach and for valuing and paying for the services derived from wetland ecosystems.
28. Greenland's biodiversity study of 2003 lists homeothermic springs and saline lakes as sensitive environments in need of protection. Other information presented therein concerns wetland areas important for hunting and fishing, for spawning, maturing and feeding of commercially important fish, for dispersed and colonial breeding and moulting of specific wetland-related bird species, including seabird breeding cliffs, and for calving and wintering of marine mammals in near-shore wetland areas. All these areas need to become important biodiversity-related elements of a future **national wetland inventory** and integrated assessment.
29. To this end, the current inventory of biodiversity hotspots in the territory of the National Park in north and north-eastern Greenland should be extended to cover the entire country. It is important to have such baseline data in view of increased pressures on the land and sea, due to expanding mining activities and tourism, including hunting and fishing in coastal waters that are likely to become more easily

accessible due to the warming climate. Until recently, a number of populations of hunted sea birds and mammals were exposed to significant increases in hunting pressure (by improved means of transport and equipment). However, over the last years improved legislation has been developed, and information campaigns about sustainable use of living resources were carried out. For a number of these populations, new data show that their decline has stopped and that hunting does not reduce the population size.

30. However, concern remains about the need to preserve the most important sites in the life cycle of these populations, for breeding, calving, haul-out, moulting, etc., and the need to protect specific populations with improved and specifically adapted hunting regulations that still need to be further elaborated, namely concerning hunting methods, bag limits and hunting seasons.

Extractive industries touching wetland areas

31. In 2008, the Parties to the Ramsar Convention have adopted Resolution X.26 on “Wetlands and extractive industries”. It provides a general operative framework that refers to a number of major issues to be considered. Notably, it makes reference to the detailed “*Guidelines for incorporating biodiversity-related issues into environmental impact assessment legislation and/or processes and in strategic environmental assessment adopted by the Convention on Biological Diversity (CBD), and their relevance to the Ramsar Convention*” adopted by the Ramsar Parties in 2002 by Resolution VIII.9, available at www.ramsar.org or in Ramsar Handbook 13 on “**Impact assessment**”).
32. The Resolution on “Wetlands and extractive industries” also urges to **value ecosystem services** at an early stage, in order that the full range of these services is considered in cost-benefit analyses related to all phases of extractive industrial activities, with particular attention to the potential costs associated with the post-closure phase of extractive activities. It furthermore urges to ensure that the boundaries of designated Ramsar sites are accurately delineated and mapped, and to engage with relevant private sector interests to strengthen corporate social and environmental responsibility programmes, and to undertake appropriate communication, education, participation and awareness (CEPA) activities in order to ensure that all relevant public and private sector bodies associated with extractive industries are aware of obligations under the Ramsar Convention regarding the wise use of wetlands and the maintenance of their ecological character. The Mission therefore strongly suggests to undertake such valuation studies, to delineate and map more accurately the boundaries of Greenland Ramsar sites, and to plan and implement specific CEPA activities (cf. also below in paragraph 60).

Ramsar sites in Greenland

33. It was a significant event in 1987 when the Home Rule Government in Greenland proposed eleven wetland sites for designation under the Ramsar Convention. This was formalized by the National Forest and Nature Agency of the Ministry of Environment, i.e. the Ramsar national administrative authority in Denmark, through the submission of information on these sites to the Convention Secretariat on 27 January 1988, for their incorporation in the Ramsar List. Since then, these

eleven Greenland sites (covering together 1,340,000 ha) are globally recognized as Wetlands of International Importance.

A legal instrument for Ramsar sites in Greenland

34. Outside of the extensive National Park in north-eastern Greenland (covering 43% of Greenland's ice-free area and incorporating two Ramsar sites), the remaining nine Ramsar sites make up 61% (1,250,000 ha) of the surface of Greenland's protected areas (2,060,000 ha, or 5% of Greenland's ice-free area outside of the National Park). This means that the category "Ramsar sites" covers a substantial part of Greenland's protected areas. It is therefore suggested that a specific **national legal instrument** be developed to clarify the protection status of Ramsar sites in Greenland and to set out national rules for their wise use and conservation.
35. The great advantage of the Ramsar Convention (in comparison to other international legal instruments) is the flexibility the Convention provides to adapt the legal protection status of internationally designated Ramsar sites at national level to the local needs and traditions, as long as the national legal protection is compatible with Ramsar's principle of wise use. The wise use of wetlands notably allows sustainable exploitation of wetland resources, including hunting and fishing in Ramsar sites. Therefore, existing hunting regulations in Greenland (e.g. for breeding bird reserves), and the designation of "areas important to wildlife" by the Bureau of Minerals and Petroleum in relation to mineral exploration, and others could be used as a basis to develop a national legal instrument for the protection of Ramsar sites.
36. When listing the Greenland Ramsar sites more than twenty years ago, almost exclusively waterbird criteria (*sensu stricto*, excluding seabirds) seem to have guided the selection of sites (but were not always formally referred to in the documentation submitted). In 2001, NERI published an extensive status report on the Greenland Ramsar sites. A very commendable analysis indeed. Regarding waterbirds, the report concludes that "*Greenland has special international responsibility for a number of species and separate populations of waterbirds. [...] Especially among the species: northern fulmar, white-fronted goose, pink-footed goose, light-bellied brent goose, barnacle goose, Iceland gull, ivory gull, Arctic tern, little auk, Brünnich's guillemot, king eider and common eider Greenland holds significant large proportions of the populations. In general there is little information on population dynamics and trends available for Greenland birds. An exception is the goose populations. [...] These populations have, with few exceptions, increased in numbers. The Greenland breeding populations of common eider and Brünnich's guillemot have on the other hand shown considerable declines through the 20th century and in the case of the eiders since even late in the 18th century. Over exploitation in the form of hunting, egg collection and disturbance are believed to be the reasons for these population declines*" The report further states that "*The information on bird numbers in the Ramsar sites is of a very varying quality, ranging from actual counts made on location to very rough estimates based on occasional visits*" and mentions that particularly the "*coastal part of the West Greenland Open Water Area (60°-67°N) is an extremely important winter habitat for seabirds*". Recent counts of the Greenlandic eider duck (*Somateria mollissima*) population show that the decline seems now to be stopped. This is probably linked to better legislation and information and increasing local involvement.

37. The report then provides a site-by-site analysis and updated information on bird counts. In conclusion, it proposes specific management measures and some revisions for the existing 11 Ramsar sites, based essentially on waterbird criteria (i.e. Ramsar Criterion 5: 20,000 waterbirds and Criterion 6: 1% of population). The proposal includes the deletion of one site (as it does not fulfil Criterion 6 any longer) and the extension of two existing sites, to better cover the habitats used by the waterbirds. Based on waterbird criteria, the report similarly describes four potential new sites and lists 12 additional potential new Ramsar sites, nine of them selected essentially because of their importance for seabirds (*Alcidae*).
38. Based on this updated information in the 2001 status report, the Ramsar administrative authority in Greenland submitted updated “*Ramsar Information Sheets*” (RIS) for the existing 11 Ramsar sites to the Convention Secretariat on 14 May 2002 (without enacting any of the territorial proposals made in the report).
39. Resolution VI.13 (adopted in 1996) urges the Contracting Parties to update RISs at least every six years and to send these updates to the Convention Secretariat. In practical terms, the Secretariat suggests that the site managers, via the national Ramsar administrative authorities, provide any necessary update regarding specific points in the RIS at their earliest possible opportunity to the Secretariat. Such ‘rolling updates of RISs’ avoid to devise substantial work programmes for the revision and updating of all RISs for the entire country at the same time. However, care has to be taken when sending - complete or partial - updates to the Secretariat, to use only the currently valid version of the RIS, i.e. avoiding outdated RIS formats.
40. All RIS updates for the Ramsar sites in Greenland (and Denmark) date from early 2002 and need therefore updating. Greenland has informed the Secretariat that the update is being developed. The Secretariat therefore looks forward to receive soon from the national authority **updated Ramsar Information Sheets**, according to the latest version available at www.ramsar.org.

Towards a comprehensive list of Greenland Ramsar sites

41. The need to update information on the existing Ramsar sites provides an opportunity to reflect on the wider requirements expressed in the “*Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands*”, adopted by Resolution VII.11 and updated by Resolution VIII.10, available in Ramsar Handbook 14 on “**Designating Ramsar sites**”. Notably the following issues may point to useful ways how to implement the above-cited guidelines for adopting a systematic approach to identifying priority wetlands for Ramsar designation:
42. Each Contracting Party to the Convention should establish a national network of Ramsar sites that fully represents the diversity of wetland types in the country and their key ecological and hydrological functions. National Ramsar site networks form an important contribution to the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and services. This means that the national list of Ramsar sites should contain representative examples of all wetland types occurring in Greenland (cf. the list above in paragraph 25).

43. Careful consideration should also be given to consider all of the Ramsar Criteria (cf. Handbook 14) and all types of wetland-dependent species. In this context, threatened species (*Criterion 2*), important species for the Arctic (or Greenland) biogeographical region (*Criterion 3*), seabirds (*Criteria 2, 3, 4, 5 and 6*), fish (*Criteria 7 and 8*) and sea mammals (*Criteria 2, 3, 4, 9*) could all be used, in addition to the restrictive group of waterbirds used so far (*Criteria 2, 3, 4, 5, 6*) to justify the site designation criteria. It is important to stress that **all applicable criteria** should be used, even if they are converging on the same species or populations. A site holding at least 1% of a wetland-related animal population (*Criteria 6 and 9*), is most likely also fulfilling *Criterion 2*, if the species concerned is a threatened one, or *Criterion 3*, if the species is important in a biogeographical context, or *Criterion 4*, if the site supports critical stages of the species' life cycle (nursery, breeding ground, etc.).
44. Also when updating the Ramsar Information Sheets, care should be taken to use all relevant (animal and plant) species dependent on the wetland site under consideration, notably including, besides waterbirds and seabirds, also sea mammals (whales, seals, walruses), crustaceans, fish and shellfish where applicable. Notably those species (or subspecies) of which Greenland hosts an important part of the global population and therefore carries a global responsibility for their survival.
45. Besides the species criteria to be applied in full, the need to apply *Criterion 1* where possible is stressed. It may be justified through the presence of specific wetland ecosystems, such as hot springs, salt lakes, particular mire or other ecological communities, islands, coastal and marine areas being particularly representative for the Arctic region, or particularly rare or unique in Greenland or the Arctic. The hydrological functions and importance of the wetland ecosystem should also be highlighted, and were applicable, cultural services (spiritual and religious, historical, archaeological, aesthetic, educational, leisure and recreation values) provided by the wetland should also be used to justify for *Criterion 1*.
46. Given the suggestions listed above, it is likely that an updated Ramsar List for Greenland would include a substantially enlarged area and number of Ramsar sites, covering all major wetland types occurring in Greenland and a representative sample of the most important wetland-dependent species, as outlined in the detailed guidelines for designating Ramsar sites in Ramsar Handbook 14. A concrete example of a possible new type of Ramsar site in Greenland is the Ilulissat case addressed by the Mission and detailed below.

Managing Ramsar sites

47. The 2001 status report on Greenland Ramsar sites further recommended the development of specific management plans including monitoring programmes and the revision of the boundaries of each site. The mission noted with satisfaction that for three of the existing Ramsar sites specific management plans are under preparation and will enter into force in 2010, notably covering the two Ramsar sites visited by the Mission (cf. below). Based on the requirements listed in Resolution V.7 on "*Management planning for Ramsar sites and other wetlands*" and further guidance (and references to related Resolutions) provided in Handbook 16

“**Managing wetlands**”, it is urged that similar management plans should be developed for all Ramsar sites in Greenland.

48. When the existing sites were selected over twenty years ago, their (terrestrial) boundaries were often based on limited information and sometimes only represent a line on a map. In cases where better information on the distribution of ecosystem elements and species on the ground is now available, it is suggested that Ramsar site boundaries be revised. First concrete proposals to this end were already made in the 2001 report. Such revisions should be in line with the guidance provided in Handbook 14, and notably also take into account the relevant aspects of Resolution VIII.21 on “*Defining Ramsar site boundaries more accurately in Ramsar Information Sheets*” and Resolution VIII. 22 on “*Issues concerning Ramsar sites that cease to fulfil or never fulfilled the Criteria for designation as Wetland of International Importance*” adopted in 2002 and available at www.ramsar.org.

Ramsar site N°384 Kitsissunnguit (Grønne Ejland)

49. The Ramsar site consists of an archipelago of four groups of flat, basaltic islands (covering 6,190 ha, including the near-shore marine area), legally protected in 2008 by an Executive Order of Conservation. The site hosts Greenland’s largest breeding colony of Arctic tern (*Sterna paradisea*, up to 22,000 pairs). These birds migrate in August about 20,000 km (!) southward to spend the northern winter in the *Antarctic*, before coming back in May-June. What more spectacular way than their migration to illustrate the inter-linkages addressed by the Ramsar Convention across the globe? The site is a priority target for the programme of Danish Cooperation for Environment in the Arctic (DANCEA). The Ministry of Environment allocated specific funding for the development of a management plan, to be completed in 2010. Besides the site management plan and the preparation of a legal framework for its implementation, the project supports also the development of awareness and information material and is developing a proposal for educational and sustainable tourist activities on the islands, taking their natural and cultural heritage into account. The work is undertaken together with the local authorities, hunter and fishermen organisations, schools and the high school, museum, tourist office and the interested public.
50. On 9 June 2009, the Ramsar Advisory Mission had the opportunity to participate in the opening of the poster exhibition “*Kitsissunnguit an open conservation*” prepared in an innovative way by students from the Aasiaat high school, combining aspects of Kitsissunnguit’s nature and cultural history with modern forms of communication. The exhibits address issues such as the presentation of the volcanic island and its Arctic tern colony (‘*a superhero of the local ecosystem*’, and ‘*100 grams that fly around the Earth*’), how the area is divided, what we are allowed and we are not allowed to do, and the cultural history of the islands.
51. During the on-site visit on the following day, the Mission focused on the vulnerability of the breeding birds and how to avoid their disturbance when planning the establishment of a trail for guided visits. The Executive Order of Conservation for the Ramsar site introduced a zoning of the site and lists specific access regulations to the different islands. The Mission believes this to be a feasible instrument to protect the islands and their birds, to assure a sustainable use of their natural resources and to provide a needed framework for guided visits. Guided

visits will allow to educate people from the nearby towns, who traditionally visit the islands individually to collect tern eggs (now forbidden), to hunt (allowed only outside the breeding season in certain zones) and to fish (allowed in certain zones and at certain times), about the need to regulate such activities within sustainable limits, i.e. applying Ramsar's wise use principle. By addressing these issues in an exemplary way, it is hoped that the legal and operational management of this Ramsar site will become a model for others to follow.

Ramsar site N°381 Aqajarua (Mudderbugten) and Sullorsuaq (Kvandalen)

52. The Ramsar site (covering 22,350 ha) covers a unique combination of different wetland types, including a flat river valley with many braided river arms, ponds, marshes and mires (Sullorsuaq) leading to a shallow marine bay with mud and sand flats exposed at low tides and salt marshes in the higher parts (Aqajarua) and a sandy and gravelly coastal stretch with barrier beaches and a lagoon and dwarf scrub heath on its higher landward parts (Qaamassoq). Along the river valley rise a large number of homoeothermic springs. The main criterion for Ramsar listing is the importance as a moulting area for king eider ducks (*Somateria spectabilis*) (Aqajarua) and white-fronted geese (Sullorsuaq).
53. The site shows a number of management issues which are also of relevance for other Greenland Ramsar sites. Waterbird-related criteria were significant reasons for its Ramsar listing. However, at that time, reference was made to rather old indications of numbers of moulting king eiders that were never confirmed since. Data quantity and quality is still scarce. For a number of logistical reasons, it was not feasible to organize regular on-site censuses at the most appropriate time in the annual cycle of the main species concerned, despite the efforts during the most recent years to undertake more frequent on-site visits. With the absence of more systematically collected census data, it is indeed difficult to understand the important fluctuations in the numbers of key species occurring at the site. Reasons to call for a systematic, standardised monitoring plan for all Greenland Ramsar sites and other important bird areas, in order to better understand these factors. Ramsar sites in Greenland are large and some are very isolated and difficult to reach what makes the collection of data relatively expensive. However, first experiences in other countries with involving the local community to collect regular data, have shown to be economically feasible and beneficial.
54. Good experiences were made in Greenland with the involvement of local organisations that could probably be asked to collect in a more systematic way data on the Ramsar sites. The establishment in 1999 of a joint working group among hunters and biologists, coordinated by the Greenland Nature Institute, provided increased manpower and capacity to adequately monitor the Greenland common eider population, a popular game species. Such regular and structured population monitoring allowed a better understanding of the eider ecology and the reasons for its decline over several decades. This led to the adoption of better hunting regulations and was followed by a spectacular population recovery in Greenland. A success story that possibly shows a way forward how to tackle management issues regarding waterbird populations for which Greenland has an important international responsibility.

55. Another management issue mentioned in the 2001 Ramsar site status report concerns possibly significant human disturbance of moulting birds by fishers, hunters and other visitors (including campers) to the shallow bay and the coastal terrestrial Ramsar area in summer. The elaboration of a management plan, based on improved baseline data, currently under way with support from the DANCEA project for the Ramsar sites in the Disko bay (cf. above), needs therefore to propose regulations for such pressures, acceptable to all stakeholders and compatible with the conservation objectives. A draft Executive Order for the Conservation of this site will be submitted to public evaluation during 2010.

Potential Ramsar site Ilulissat icefjord

56. The mission had also the opportunity to visit the World Heritage (WH) site Ilulissat icefjord and to discuss the merits of its Ramsar listing with the site manager of the local authorities. The sea mouth of Sermeq Kujalleq, one of the few glaciers through which the Greenland inland ice cap reaches the sea, was inscribed as a natural property in the World Heritage Convention List in 2004, as it fulfills *WH Criterion vii*, i.e. it contains a superlative natural phenomena, the combination of a huge ice sheet and a fast moving glacial ice-stream calving into a fjord covered by icebergs, and areas of exceptional natural beauty and aesthetic importance, and *WH Criterion viii*, because it is an outstanding example representing a major stage of the Earth's history, the last ice age of the Quaternary Period, and shows significant ongoing geological processes, such as one of the fastest (19m per day) and most active ice streams in the world with an annual calving of over 35 cubic km of ice, accounting for 10% of the production of all Greenland calf ice, more than any other glacier outside Antarctica.
57. Including the Ilulissat icefjord in the Ramsar List of Wetlands of International Importance would indeed be fully compatible with the "*Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance of the Convention on Wetlands*", (cf. paragraph 41 above). Given its 'outstanding universal value' recognized by the World Heritage Convention, the site would easily fulfil *Ramsar Criterion 1* as a representative, rare or unique example of a wetland type in the Arctic biogeographical region. Under this criterion, the specific hydrological consequences of the calving glacier on the ecology of the Disko bay waters (salinity, temperature, biological production) should be highlighted, as well as cultural and socio-economic considerations, notably the important tourist attraction beyond the floating iceberg landscape, by including also the potential of close encounters with sea mammals (whale watching, etc.).
58. An Ilulissat icefjord Ramsar designation should be complementary to the World Heritage site and would therefore have to include, besides the actual WH site, also the part of the open waters of Disko bay most important for biodiversity, because of its particular ecology downstream of the calving zone of the glacier. This additional marine aquatic part should be delineated based on Ramsar's biodiversity-related criteria, referring to the presence of threatened species (*Criterion 2*), important populations for the Arctic biogeographical region (*Criterion 3*) or to species using this specific area for foraging, spawning, reproduction, growth, migration, etc., such as fish, sea birds and mammals (*Criterion 4*). Quantitative criteria for birds and sea mammals may apply (*Criterion 5, 6, 9*). As the area is

important for an economically significant halibut fishery, *Criteria 7 and 8* on fish should probably also be used.

59. Overall, a preliminary analysis promises that an Ilulissat icefjord Ramsar site would promote this outstanding example of a glacier-related coastal wetland (Ramsar wetland type A) at global and national scales. Through specific communication, education and awareness activities, the particular services and needs of these ecosystems could become a model for other site managers to get inspired and to follow the good example.

Capacity building and outreach (CEPA)

60. The only way to reduce wetland degradation and loss is to gain collaboration and cooperation of individuals, organisations, and groups in society to act on the drivers responsible for wetlands loss. To reach out to these actors, beyond the already converted, CEPA plays an important role to develop this collaboration and change in society. CEPA stands for Communication, Education, Participation and Awareness, but means also capacity development, empowerment, partnerships, action, and adaptive learning and management. Through Resolution X.8 the Ramsar Parties adopted in 2008 already the third consecutive “*Programme on communication, education, participation and awareness (CEPA) 2009-2015*” specifying specific goals and key result areas. Additional annexes to the Resolution clarify the roles and responsibilities of the CEPA national focal points and provide a tool to identify actors and monitor the implementation of Ramsar’s CEPA Programme at national level. This shows that CEPA activities, planned in an integrative way at national level, are considered essential elements for effective Ramsar implementation by the Contracting Parties.
61. The status report on Ramsar sites in Greenland 2001 states that there is very little recognition of the Ramsar sites, and that an information campaign would therefore be appropriate. It suggested to update and revise the original information leaflet produced by the Greenland Home Rule Government in 1990, and that the Ramsar sites need to be marked in the field with signposts at popular landing sites. Another suggestion concerned the proposal that the Greenland press and television would produce a series of short information spots on the Ramsar sites.
62. Eight years later, the Ramsar Advisory Mission was able to participate in the opening of a first exhibition on a Greenland Ramsar site (Kitsissunnguit, cf. paragraph 50 above). This should be complemented by the production of a specific leaflet for visitors to the site, in conjunction with the establishment of a visitors’ trail (cf. paragraph 51 above), most usefully in three languages (Greenlandic, Danish, English). It is furthermore suggested to investigate the opportunity to prepare similar information and awareness materials for other Ramsar sites, especially those likely to be visited by the public in increasing numbers.
63. Such activities could go hand in hand with the preparation of a national wetland CEPA plan and campaign, as outlined in Ramsar Handbook 4 on “**Wetland CEPA**” (3rd edition 2006 soon to be updated to include the text of Resolution X.8 cited above). In this context, the launching of national (in the capital Nuuk) and local actions (where feasible near Ramsar sites) for the celebration of World Wetlands Day is strongly suggested. If the date of 2 February is not considered to

be best suited, due to the icy climate likely to reign at this time of the year, another date, more appropriate to attract a larger public, could be selected, e.g. at the end of the school season in late spring. The active involvement and support by non-governmental partners (conservation, hunting, fishing organisations, etc.) for World Wetlands Day activities should actively be sought, as well as support from the business sector, willing to sponsor specific activities or to undertake wetland restoration and management projects themselves in coordination with the national Ramsar administrative authorities. To this end, the nomination of a suitable candidate as a national CEPA focal point from the NGO sector is strongly suggested. Possibly, even a permanent wetland exhibition, or a dedicated wetland information centre could be established in the capital Nuuk, where the largest part of the Greenland population lives.

Greenland in the wider Arctic environment

64. The Mission was able to recognize the amount of fundamental studies already undertaken on the ecology and biodiversity of Greenland that led to a better understanding of the Arctic environment and the effects of the ongoing climate changes. As outlined above, these studies often concern wetland ecosystems addressed by the Ramsar Convention. Among other parts of the circumpolar Arctic region, Greenland is arguably one of the areas best covered by fundamental scientific investigations supported by major American and European institutions. Thus, the increased understanding of the functioning and the management of Arctic wetland ecosystems elaborated in Greenland, can certainly be helpfully shared with the other members of the Arctic Council, as similar situations probably occur in Alaska, Canada, the Faroe Islands, Iceland, Norway, Sweden, Finland and the Russian Federation.

Conservation of Arctic Flora and Fauna (CAFF)

65. In this context, a more formal cooperation on wetland-related issues between the Ramsar Convention and the permanent working group of the Arctic Council on the Conservation of Arctic Flora and Fauna (CAFF), chaired from 2006-2009 by the Mission leader, *Inge Thaulow*, was evoked. Notably the Arctic Biodiversity trends report, to be published in 2010 as a contribution to the UN International Biodiversity Year, and the full Arctic Biodiversity Assessment, scheduled for completion in 2013, provide concrete opportunities to include wetland-related information. It is therefore suggested that the Greenland Government take the lead in facilitating such coordinated approaches at circumpolar Arctic and national levels.
66. Most recently, the European Commission started to address a number of challenges of rapid change in the Arctic, based on the understanding that some ecosystems and species are clearly at risk, particularly those specially adapted for life on the sea ice and migrating species from Europe, such as birds, whales and fish (some of which are of high commercial value) which depend on the high productivity of the Arctic ecosystems in summer for foraging and reproduction. The EU goals include helping to prevent and lessen the impact of worldwide economic activity on the Arctic, such as pollution from land-based sources, integrating environmental concerns in all policies and developing ecosystem-based management of human activities.

67. The suitability to focus on specific issues related to Arctic wetlands within the framework of the Nordic-Baltic Wetland Initiative, operating under the Ramsar Convention, may also be assessed, as it concerns a substantial number of the member countries of the Arctic Council.
68. And finally, it is suggested by the Mission that the Danish national Ramsar administrative authority initiates contacts with the Government of the Faroe Islands in view of the possible designation of Ramsar sites in this part of the Kingdom, given the fact that the Faroe Islands probably contain several important wetlands that fulfil the Ramsar criteria.

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Itinerary and people met

- 8 June *evening*: **Tobias Salathe** flies from Geneva to Copenhagen airport (overnight stay)
- 9 June *morning*: TS flies to Kangerlussuaq and Aasiaat
afternoon: meeting in the Sømandshjemmet with **Inge Thaulow** (mission leader, Ramsar focal point in the Department of Infrastructure and Environment, now Department of Domestic Affairs, Nature and Environment of the Government of Greenland), **Sten Asbirk** (Danish Ramsar national focal point in the Spatial and Environmental Planning Agency of the Ministry of Environment), **Tom Christensen** (project manager in the Danish Polarcenter, part of the National Environmental Research Institution, NERI), **Carsten Egevang** (scientist, Greenland Institute of Natural Resources), and **Naja Habermann** (site manager, Ilulissat Municipality)
evening: opening of the exhibition on Kitsissunnguit Ramsar site at Aasiaat high school
- 10 June *full day* transfer by boat from Aasiaat to Ilulissat with an extended visit of the Kitsissunnguit Ramsar site (with the five experts listed above)
- 11 June *full day* visit of Aqajarua and Sullorsuaq Ramsar site by boat with the five experts listed above plus **Anette Clausen** (Bureau of Minerals and Petrol of the [then] Greenland Home Rule Government)
evening: on the way back to Ilulissat a short visit by boat of the seabird breeding cliffs (inventory N°69049 in NERI Report 170) at the south-eastern end of Kangerdluk bay (Langebugt)
- 12 June *morning*: meeting on mining and wetland sites at the Hotel Icefiord in Ilulissat with *Anette Clausen, Tom Christensen and Inge Thaulow*

early afternoon: meeting with *Naja Habermann* and the above on the Ilulissat icefjord

late afternoon: on-foot visit of the terrestrial part of Ilulissat icefjord World Heritage site close to Ilulissat town

- 13 June *morning:* visit of Ilulissat town and facilities
afternoon: on-foot visit of a different terrestrial part of the Ilulissat icefjord WH site with *Inge Thaulow* and *Tom Christensen*
- 14 June *morning:* return travel by ferry from Ilulissat to Aasiaat
afternoon: concluding meeting at the Søndshjemmet with *Inge Thaulow* and *Tom Christensen* about the mission conclusions and recommendations
- 15 June *full day* return flight with the two above to Kangerlussuaq and Copenhagen, TS stays overnight in the airport hotel
- 16 June *morning:* TS flies to Geneva and returns to the office