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REPORT

**ON THE SPOT EXPERT APPRAISAL OF THE
MATSALU NATIONAL PARK (ESTONIA)**

12-14 September 2016

*Document prepared
by Mr Michael B. Usher (United Kingdom)*

The European Diploma for Protected Areas (EDPA) was awarded to the Matsalu Nature Reserve in 2003. The EDPA was renewed in 2008 following consideration of a report by an expert, Joe Sultana and appropriate committees in the Council of Europe. The name of the EDPA has been changed to Matsalu National Park.

This report is written in relation to the possibility of the renewal of the EDPA for the period 2018 until 2027. The Secretariat was not present during the on-the-spot visit in September 2016.

1. THE AIM OF THE ON-THE-SPOT APPRAISAL

A letter dated 30 May 2016 from Iva Obretenova, Head of the Biological Diversity Unit, to me stated the following:

“The objective of the on-the spot appraisal is to assess whether the conditions of the site remain the same as when the Diploma was awarded and extended, or whether they have improved or deteriorated.

“I should be grateful if you would accept being the independent expert in charge of the on-the-spot appraisal, visiting the site, meeting relevant stakeholders as per the draft agenda, and preparing a report, including the necessary recommended actions.”

2. INTRODUCTION

It could be said that the organisation of nature conservation and the management of protected areas in Estonia is both rather puzzling to an outsider and complicated. Since Matsalu Nature Reserve was awarded the Diploma in 2003 there have been major changes. Until 2006 the conservation functions were the responsibility of 11 local administrations. During the period 2006-2009 these local administrations were merged into a State Conservation Agency. Planning and decisions were the responsibility of the Ministry of the Environment, and a State Conservation Centre was responsible for management and monitoring.

There was further change during the period 2009 to 2012. The Ministry for the Environment retained the planning function. A newly created Environmental Board was responsible for decisions, as well as management and monitoring on privately-owned land. A newly created State Forest Management Centre (RMK) assumed responsibility for management and monitoring on state-owned land.

Since 2013, further reform of the structures and responsibilities occurred. In outline the responsibilities and structures are:

Planning	Ministry of the Environment
Decisions	Environmental Board
Management	RMK¹ and Environmental Board²
Monitoring	Environmental Board² and a newly created Environment Agency
Enforcement	Environment Inspectorate

¹ Only on state-owned land

² Only on privately-owned land

It seems likely that there might be further changes in the future. In September 2016 the Environmental Board had three departments – the Nature Conservation Department (with semi-natural habitats, species protection and nature conservation planning units), the Forestry Department (which includes a game and fisheries unit) and the Nature Education Department. My impression is that the systems of government are still evolving, even after the 25 years of the post-Soviet era.

Estonia also has a variety of Non-Governmental Organisations (NGOs) which are active in relation to environmental matters. Perhaps the foremost of these is the Estonian Fund for Nature (ELF), but others include an Ornithological Society, a Wetlands Society, a Semi-natural Community Association, MTÜ Põhjakonn (an NGO concerned with frogs and toads), and a Green Movement (this list is not comprehensive, but it indicates the range of NGOs in Estonia).

The programme for the visit is given in Annex 1. Meetings were held with all of the branches of Government and its agencies listed in the box above, as well as with a sample of County and Municipality administrations, NGOs and entrepreneurs.

3. CHANGES TO THE CONDITION OF THE EDPA

This could not be assessed because, with all of the administrative changes, the original document proposing the Matsula Nature Reserve for the award of the EDPA could not be located. Hence direct comparisons were not possible.

However, during the visit I was able to gain an impression of the condition of the National Park. Since 2015 there is a very detailed management plan for the Park, for the period 2015 – 2024, which is 254 pages in length. The plan is written in Estonian, but an English-language translation has been provided to me and this is included as Annex 2. What is certain is that the management plan, when fully implemented, provides not only for the maintenance of the Park's condition but also for its improvement.

Recommendation 1: The management plan for 2015 to 2024 needs to be fully implemented, appropriately funded, and revised before the end of the plan period in 2024.

During the visit I was able to see aspects of the management of the alluvial (flood) and coastal meadows which occur on a broad spatial scale in the National Park, to see the much smaller scale management of wooded meadows and alvar grassland, as well as to observe the large numbers of migrating cranes (*Grus grus*), geese and swans. There was discussion about the wading birds, some species such as ruff (*Philomachus pugnax*) declining and others such as the Baltic subspecies of dunlin (*Calidris alpina schinzii*) with its breeding habitat carefully managed.

My overall impression is that the condition of the National Park is certainly as good as when the EDPA was first awarded, and that, with implementation of the 2015 to 2024 management plan, the condition of the National Park is likely to improve.

4. REVIEW OF THE PREVIOUS CONDITIONS AND RECOMMENDATIONS

The Matsalu National Park has been punctilious in reporting annually to the Secretariat of the Bern Convention. During the final discussion session with Kaja Lotman, I discussed the four conditions and five recommendations which had been agreed for the renewal of the award in 2008. My assessment of Matsalu National Park's implementation of these nine topics is given in Annex 3. In summary, I consider that all four conditions have been fulfilled. Also, there has been very considerable progress in implementing the five recommendations; four of these will, however, be repeated in a revised form.

5. NATIONAL PARK STAFF AND FUNDING

Despite the complexity referred to above, co-ordination across the various departments and agencies appeared to work well. Apart from Kaja Lotman, whose role changed on 1 October 2016, the Environmental Board has 9 staff working on National Park issues. The impression is that there is a good balance between the various roles needed for the effective management of the Park – people working on planning, biological issues, practical management, education, the built heritage, etc. Perhaps more surprisingly compared to other EDPAs which I have visited, everyone seemed contented with the resources available and there was no lobbying to include a request for more funds in this report!

My assessment is that morale is good and that, whatever the person's nature of employment, there is a very positive attitude about the National Park.

6. THE SEMI-NATURAL GRASSLANDS

The National Park contains four distinct types of semi-natural grassland, all of which have conservation importance. The two most extensive types are the coastal meadows and the alluvial (flood) meadows. There are more scattered fragments of alvar grasslands and wooded meadows. The extensive meadows are particularly important as feeding and nesting habitats for birds, whilst the two more restricted types of meadows are especially important for their plants and the invertebrates which

rely on those plants. Management of all four types of semi-natural grassland is essential if they are to retain their conservation importance.

Coastal meadows: these will mostly be grazed by cattle, but sometimes by horses or sheep, to keep the vegetation height relatively short. Of particular sensitivity is the structure of these grasslands as a nesting habitat for wading birds.

Aluvial meadows: the conservation importance of these meadows would be reduced either if a hay-cut was not taken and transported off the area or if they were not grazed. The National Park has provided access for the farmers who take a hay crop. Perhaps more work need to be undertaken to find suitable uses for the large quantities of hay which can be removed annually.

Wooded meadows: these are small in size and irregular in shape; hence they are unsuitable for management by large machinery. The National Park will need to work closely with farmers to cut the hay in order to maintain the great diversity of flowering plants in these habitats.

Alvar grasslands: if unmanaged, these could become overgrown with juniper bushes (*Juniperus communis*) and young trees germinating from seed blown in from surrounding trees. To maintain their biodiversity richness they need to be appropriately grazed.

Recommendation 2: Continuing co-operation with the local farmers is essential for the management and well-being of the grassland communities of the National Park. This should be fostered at all opportunities, and liaison with both farmers and others in relation to the use of the hay cut would be beneficial.

7. SCIENTIFIC RESEARCH AND EDUCATION

The National Park provides an excellent variety of habitats, under long-term ownership and management, which can be used for scientific (both natural and socio-economic) research. A list of publications from 2003 to 2006 was included in the previous review of the Matsalu National Park; this has been updated by Kaja Lotman and the list from 2007 to 2016 is included as Annex 4. A comparison of the lists of scientific studies included in the 2007 on-the-spot appraisal report and this report appears to indicate that scientific activity in the Park has decreased during the last 10 years.

The full potential of the National Park for scientific education and research has not been realised. The University of Tartu has a field station located near the National Park and there could be mutual benefits from greater integration of the activities of the two. Although there are inventories of the fauna and flora of the National Park, these are generally not spatially explicit. It might therefore be appropriate to consider whether mapping on a grid square basis (probably using a 1km grid square) would give valuable spatial data on the fauna and flora. This would show how the various species are distributed across the Park, and over time repeat surveys would indicate how species distributions are changing (possibly in response to a changing climate) and allow management to be appropriately modified.

External scientific advice might be needed in order for the National Park's scientific values, both for research and education, to be achieved. It would therefore be appropriate to consider the establishment of a Scientific Advisory Group consisting of a relatively small number of scientists drawn from Estonia and possibly also from neighbouring countries. This Group might only meet only occasionally, but it could consider the strategic scientific use of the National Park, review research proposals and results, and provide any other scientific advice requested.

Recommendation 3: In order to achieve the full potential of the National Park for scientific research and education, a Scientific Advisory Group should be established. The Group would provide strategic advice and, when requested, review the quality of research proposals and scientific results and provide other scientific advice.

8. HUNTING AND INVASIVE SPECIES

These might appear to be rather different issues, but there are links between them.

Invasive species can be divided into two groups – invasive species which have naturally colonised the area and alien invasive species. The golden jackal (*Canis aureus*) is now believed to

come into the former group as a native, invasive species, having spread naturally westwards into Estonia and the Matsalu National Park. Because of its predation on animals grazing the grasslands, and hence conflicts with farmers, a strong case could be made for managing the number of golden jackals within the National Park.

There are, however, several alien invasive species such as the giant hog-weeds (*Heracleum sosnowskyi* and *H. mantegazzianum*), American mink (*Neovison vison*), raccoon dog (*Nyctereutes procyonoides*) and round goby (*Neogobius melanostomus*). It is in the interests of the National Park that these should be managed to minimize their effects and eliminated wherever possible. Clear guidelines have been published by the Council of Europe in relation to policy and management issues around invasive, alien species – see the publication by Monaco, A. & Genovesi, P. (2014)¹.

Hunters can be very helpful allies in the management and control of invasive species. Hunters have been financially supported in a small way to control American mink and raccoon dogs on the islands in Matsalu Bay, and well as being able to control the wild boar population in those parts of the National Park which are classified as ‘conservation zones’ or as ‘limited management zones’. Hunting is not permitted in those parts of the National Park classified as ‘strict nature reserves’.

Recommendation 4: Although hunting will always be severely restricted and confined to limited areas within the National Park, co-operation with hunters is essential for the management and control of invasive species.

Recommendation 5: Whilst alien invasive species can threaten the biodiversity of the National Park, they should be controlled and, as far as practically possible, eliminated. An early warning system should be established so that the arrival of potentially invasive species can be noted and management action taken at an early stage.

9. CLIMATE CHANGE

Much of the ecological value of Matsalu National Park lies in its very low altitude. The sea in Matsalu Bay is extremely shallow, often being less than 0.5m deep. The alluvial (flood) grasslands are often no more than 1m above normal sea levels. They are flooded in the spring when the sea ice prevents the drainage of the land. This flooding can on rare occasions result in water up to 3m deep over these grasslands. This very flat topography leads to the important mosaic of shallow water, reed beds and grasslands, all conducive to the importance of the National Park for its resident, breeding and migratory bird populations.

Information on the amount of sea level rise which might be expected is given in Watson, C.S. *et al.* (2015)². Using satellite data the average sea level rise from 1993 to mid-2014 was 3.2 mm per year, although various corrections reduce this to between 2.6 and 2.9 mm per year (all of these estimates have confidence limits of plus or minus 0.4 mm). Set against this rise in the level of the sea is the isostatic rebound of this part of the Baltic coast. However, the net change is that the low-lying areas of the National Park are increasingly likely to be inundated by the sea.

Whilst the National Park Authorities can do nothing about mitigation to ameliorate the likely effects of climate change, some adaptation to changing conditions within the National Park is possible. During the time-frame of the current management plan, when sea level might be expected to rise by between 20 and 30 mm, it would be useful to develop an adaptation plan for both the habitats and the infrastructure of the National Park. Examples of adaptation in protected areas, funded by European Union LIFE projects, can be accessed at

http://ec.europa.eu/clima/publications/docs/life_climate_change_adaptation_en.pdf, where it can be seen (page 4) that Matsalu National Park comes in zones of medium and high environmental sensitivity to climate change.

Recommendation 6: By 2024 prepare a climate change adaptation plan for the National Park.

10. PUBLIC ACCESS, AWARENESS AND EDUCATION

There is public access at a number of points around the National Park, and 8 observation towers are located at Keemu, *Penijõe*, Suitsu*, Kloostri, Rannajõe, Haeska, Kiideva* and Puise. Those towers marked ‘*’ are associated with hiking trails of varying lengths up to about 7 km. There are 3

longer hiking routes in the region of Penijõe (c. 17 km), on the southern shore of Matsalu Bay (c. 23 km) and on the northern shore of the bay (c. 79 km). It would also be useful to explore possibilities for creating further hiking trails to demonstrate the differing aspects of the National Park (habitats, management, species), and for educational visits by schools and other educational groups.

Recommendation 7: For national and International visitors printed guides to the hiking trails and hiking routes should be available in Estonian and other major European languages and, when the opportunity arises, the number of trails could be increased.

The Visitor Centre at Penijõe provides a useful introduction to many aspects of the National Park, and its continued maintenance and the renewal of exhibits needs to be considered. It contains material of value to both school parties and to the general public.

11. CULTURAL HERITAGE

The cultural heritage of the counties in which Matsalu National Park is located is well catered for. Activities encompass traditional methods of farming and animal husbandry, as well as fishing and a number of craft activities (for example, embroidery is exhibited in Lihula Manor). The guide book to Matsalu National Park³ contains several pages on the cultural heritage and on the buildings and other cultural objects located within the National Park's boundaries.

12. CONCLUSIONS

The two main impressions following the visit to Matsalu National Park are (1) that there is considerable biodiversity within the National Park and (2) that the National Park is being well managed. The National Park Authorities, NGOs, local communities and entrepreneurs have demonstrated their interest in the whole spectrum of heritage values, both natural and cultural. Added to that, there is considerable support for the National Park from the four surrounding communities – Hanila, Lihula, Martna and Ridala (Lääne County).

I therefore recommend that the European Diploma for Protected Areas, first awarded to Matsalu National Park in 2003 and renewed in 2008, be further renewed. My recommendation is that no conditions are attached to the renewal, but that 7 recommendations, as outlined in the report and listed in Annex 5, are attached to the renewal.

REFERENCES

¹ Monaco, A. & Genovesi, P. (2014). *European Guidelines on Protected Areas and Invasive Alien Species*. Council of Europe, Strasbourg and Regional Parks Agency – Lazio Region, Rome.

² Watson, C.S. *et al.* (2015). Unabated global mean sea level rise over the satellite altimeter era. *Nature Climate Change*, **5**, 565-568 (doi:10.1038/nclimate2635).

³ Anonymous (2016). *Matsalu National Park, Lääne County*. Environment Board, Penijõe, Estonia.

Annex 1: On-the-spot expert appraisal of the Matsalu National Park Programme, 11 to 14 September 2016

Sunday 11 September 2016

Travel from Edinburgh to Tallinn; accommodation in the Metropol Hotel, Tallinn.

Monday 12 September 2016

1. Met by Kaja Lotman (Head of Hiiu-Lääne-Saare region, Environmental Board) at the Metropol Hotel. She accompanied me during the majority of the meetings listed below, except on the morning of Tuesday 13 when I was accompanied by Nele Söber (Terra Maritima – an NGO active in 6 municipalities around the Matsalu National Park) – see <http://visitmatsalu.ee/> for details of visiting Matsula.

2. Meeting with Leelo Kukk (Deputy Director General of the Environmental Board) and Tarvo Roose (Head of Nature Conservation Department, Environmental Board) – see <http://www.keskkonnaamet.ee/eng/acivities/nature-conservation/> for details of the Nature Conservation Department of the Environmental Board.

3. Meeting with Hanno Zingel (Advisor, Ministry of Environment) - see <http://www.envir.ee/en/contact> for information about the Ministry of the Environment.

4. Drive from Tallinn to the Matsalu National Park, and view of the semi-natural grasslands, Kasari River, etc.

5. Meeting with Kristjan Tõnisson (Head of Nature Conservation Department, State Forest Management Centre (RMK)) – see <https://www.rm.ee/organisation/contact-information/nature-protection-department> for details of the Nature Protection Department of RMK.

6. Meeting with Aleksei Lotman (expert on marine environment protection and environmentally friendly farming, Estonian Fund for Nature (ELF)) and Silvia Lotman (Head of Executive Committee and expert on nature conservation, Estonian Fund for Nature) – see <http://elfond.ee/en/about-elf/people-in-elf> for information about the staff in ELF.

7. Accommodation at Kodade Farm (<http://www.kodade.ee/en/>).

Tuesday 13 September 2016

1. Meeting with Kirsi Loide (Nature Conservation Planner, Environmental Board).

2. Meeting with Ilona Lepik (Conservation Biologist [species], Environmental Board).

3. Meeting with Krista Kallavus (Cultural Heritage Adviser, Environmental Board).

4. Meeting with Olavi Vainu and Kaarel Kaisel (Environment Agency, Bird Ringing Centre) – see <http://www.keskkonnaagentuur.ee/et/kontaktid> for information about staff in the Environment Agency.

5. Meeting with Kaie Kattai (Land Management Specialist, Environmental Board).

6. Meeting with Marju Pajumets (Visitor Management, State Forest Management Centre).

7. Meeting with Marika Mann (entrepreneur, Estonian Nature Tours – <http://www.naturetours.ee/>).

8. Meeting with Martin Zobel (Professor of Plant Ecology, University of Tartu – http://www.botany.ut.ee/planteco/en/staff/martin_zobel).

9. Meeting with Magnus Källe (Planning officer, Municipality of Lihula) and Kristina Kukk (Information Officer, Municipality of Lihula) – see <http://www.lihula.ee/kontaktid> for information about Lihula Municipality.

10. Drive from Penijõe (the National Park Centre) to Haeska, stopping *en route* to see alvar grassland, a wooded meadow, and further semi-natural grassland.
11. Talk with Trinus Haijtema, ornithologist and voluntary bird watcher – see <http://www.visitmatsalu.com/> for Trinus' personal website.
12. Short boat ride into the Matsalu Bay to see migrating cranes and geese.
13. Accommodation at Tuulingu Holiday House (<http://www.tuulingu.ee/pgs/eng/index.html>).

Wednesday 14 September 2016

1. Unaccompanied walk among the coastal meadows at Haeska.
2. Meeting with Anne Sula (Nature Use Specialist, Environmental Board) and Tõnis Ruber (Forestry Specialist, Environmental Board).
3. Meeting with Tõnis Ulm (Head of the Läänemaa Office, Environment Inspectorate) – see <https://www.kki.ee/est/?part=html&id=48> details of staff).
4. Meeting with Neeme Suur (County Governor, Läänemaa County) – see <https://laane.maavalitsus.ee/kontakt> for details about the County Administration).
5. Detailed discussion with Kaja Lotman regarding previous conditions and recommendations, invasive alien species, climate change implications, and overview of the on-the-spot appraisal.
6. End of the visit.
7. Accommodation in Haapsalu.

Annex 2: Translation of the Summary of Matsalu National Park's Management Plan from Estonian into English

The management plan first gives an overview of the nature, land-use, stakeholder groups, legal status, research and monitoring in the National Park. Matsalu is one of the five National Parks in Estonia, its area is about 48 860 hectares and it includes shallow Matsalu Bay, part of Väinameri Sea, lower reaches of Kasari river together with its flood-plain that includes several thousand hectares of alluvial meadows, large reed-bed in the delta of the river and Eastern part of the bay as well as several smaller ones along the shores, islets, various meadows and woodlands. Nature has been shaped largely by the post-glacial land up-lift as well as historic land uses like agriculture, forest cutting and reed-harvesting. Land ownership includes both private and public lands. Stake-holder groups involve public bodies (including those in charge of management), academic institutions, environmental NGOs, farmers, fishermen, hunters, nature tour operators, reed cutters, and local inhabitants and land-owners. All the activities referred to above are possible within the Park, but legislation and the Park rules put significant constraints on all of them in order to avoid damage to nature. The National Park has been awarded European Diploma of Protected Areas, it is also a Ramsar site, a HELCOM MPA and part of Natura 2000 network. Research and monitoring has a long history in Matsalu, including thorough mapping of vegetation and habitats, long term bird counts (migrating, nesting, moulting, wintering), as well as mammal, amphibian and reptile, fish, invertebrates (both terrestrial and aquatic) and fungi research, and data collection on historic and present human uses.

Chapter 2 of the plan is dedicated to most important valuable features of the Park, factors impacting these, the respective conservation objectives and measures to secure their favourable conservation status. Bird species listed as important conservation features include Lesser White-Fronted Goose (*Anser erythropus*), Baltic Dunlin (*Calidris alpina schinzii*), Eagle-Owl (*Bubo bubo*), White-Tailed Eagle (*Haliaeetus albicilla*), Ruff (*Philomachus pugnax*), Bittern (*Botaurus stellaris*), Bewick's and Whooper swans (*Cygnus columbianus* and *C. cygnus*), Great Snipe (*Gallinago media*), Black-tailed Godwit (*Limosa limosa*), Little Crake (*Porzana parva*), Avocet (*Recurvirostra avosetta*) and many others. The habitat demands and threats vary between these species significantly but the legal protection offered by the Park is deemed beneficial to all. Illegal activities are considered low-priority threats, as the incidents of this kind are rare. Loss of open meadow habitats as well as related loss of mosaic landscape patterns is however a serious threat to many. Measures to counter-act these are largely in place, most importantly a scheme for semi-natural habitat restoration financed by the Environmental Investment and an agri-environmental sub-measure for semi-natural habitat management financed as part of RDP. These have reduced and to some extent reversed habitat loss but in spite of this several most demanding species are still not in favourable status. Additional measures are therefore proposed that include clearing especially most wet parts of open meadows and increasing mosaic water available in the reed-beds, as well as keeping up water-table levels in the flood-plain during the spring. Some species apparently need also measures to control predation even though these are not as important as the habitat management. More details about the measures are presented in the chapter 4 of the Plan that is dedicated to the conservation actions (see below).

In addition to birds many other animals of conservation interest like eight species of bats (*Myotis dasysneme*, *M. nattereri*, *M. daubentoni*, *Eptesicus nilssonii*, *Pipistrellus nathusii*, *P. pipistrellus*, *Plecotus auritus*, *Nyctalus noctula*), two species of seals (*Phoca hispida bottnica* and *Halichoerus grypus*), otter (*Lutra lutra*), natterjack toad (*Bufo calamita*), several fish species are listed as valuable features of the Park. To these also the protection offered by the Park appears to be beneficial. Natterjack toad however is not in favourable status and measures to restore the habitats like shallow open pools and short-grass pastures, as well as reintroductions are foreseen. Also measures like protection of bat habitats and reduction of seal disturbance are foreseen. More details about the measures are presented in the chapter of the Plan dedicated to the conservation actions (see below). Many protected plant species, including several orchids - frog orchid (*Coeloglossum viride*), lady's-slipper (*Cypripedium calceolus*), red helleborine (*Cephalanthera rubra*) musk orchid (*Herminium monorchis*), fly orchid (*Ophrys insectifera*) and others – as well as marsh angelica (*Angelica palustris*) and two species of ferns - maidenhair spleenwort (*Asplenium trichomanes*) and wall-rue (*Asplenium ruta-muraria*) - are represented in the Park. Several measures are foreseen that are mostly related to protection of the habitats (see below).

Matsalu National Park includes many habitats of conservation interest listed in Annex I to the Habitats Directive, here listed with shortened names and Annex I codes: sandbanks covered by water (1110), estuaries (1130), mud- and sand-flats (1140), coastal lagoons (1150), shallow inlets and bays (1160), reefs (1170), annual vegetation on drift lines (1210), perennial vegetation on stony banks (1220), islets (1620), coastal meadows (1630), dry heaths (4030), juniper formations (5130), water courses (3260), dry grasslands on calcareous substrates (6210), lowland species-rich grasslands (6270), alvars (6280), alluvial meadows (6450), wooded meadows (6530), calcareous rocky slopes (8210), old broadleaved forests (9020), wooded pastures (9070), and deciduous swamp woods (9080). These varied habitats require also very complex management. Many of these are meadow and/or pasture habitats that require mowing and/or grazing as part of management. Current management must continue as top priority while restoration and enhancement measures are also required. In wooded habitats presence of old and dead trees must continue to be secured but in addition to that measures to restore mosaic semi-open and light-rich character of the habitat are advisable. On the coast-line and in the reed-beds mosaic presence of open water should be restored. More details on conservation actions required to secure the favourable status of the habitats are presented in chapter 4 (see below).

Matsalu National Park also has landscape and cultural values that need to be maintained by continued cooperation with local inhabitants. The habitat conservation measures are also helping to maintain the landscape. The landscape-scale view however helps not only to secure cultural heritage and visitor experience but also helps in conservation of species that require different habitats for nesting, feeding, stop-over and so on, and is therefore also part of ecosystem-based approach to management.

Chapter 3 of the plan is dedicated to visitor infrastructure and promotion nature conservation among the visitors, and builds on the previous. Infrastructure is described and main measures to keep it usable are presented. Infrastructure includes the main visitors' centre at the Park headquarters, several nature trails, (bird) watching towers and information boards. More details of the actions required for maintenance are presented in chapter 4.

Management actions are presented in detail in chapter 4 of the Plan. The first sub-chapter is dedicated to monitoring and research needs connected to management and needed in order to assess the management effectiveness. Monitoring of the nesting eagles and eagle-owls, ground-nesting birds, migrating geese, swans and cranes, bitterns and crakes, bats, seals, amphibians, protected plants, coastal sea, protected plant communities and landscapes are foreseen; significant part of it is covered by National environmental monitoring scheme but some additional counts are advisable in order to secure up-to-date information. Additional research needs include assessment of impacts of predation on ground-nesting birds, inventories of bat habitats, protected plants, lichens and fungi, invertebrates, forest habitats and springs, as well as mapping of cultural heritage – info exists on all of these but it is not deemed to be fully sufficient. Also research and development in the field of sustainable use of wetland biomass is required, as despite significant progress in recent years (including heating Lihula town with alluvial meadow hay) there is still significant surplus, and this is hampering efforts of the habitats' management. Also further monitoring of visitors and development of visitors' infrastructure are needed to improve the management of visitation and nature education.

Species management actions include control of invasive species like giant hog-weeds (*Heracleum sosnowskyi* and *H. mantegazzianum*), American mink (*Neovison vison*) and raccoon dog (*Nyctereutes procyonoides*), and on the other hand reintroductions of endangered natterjack toads. Most important for the future of the wetland however are the habitat management actions, which include restoration of open-water mosaics in the reed-beds, renaturation of the flooding regimes, clearing meadow and pasture habitats from encroaching bush, regular grazing and mowing of pastures and meadows; these are described in detail, subdivided by habitat type and priority. Landscape management includes actions like continued agricultural use of the fields and upkeep of the Park. Related to habitat management are also the investments into necessary machinery, animals and infrastructure, as there is still need for more and better grazing or mowing, especially in the wet or hard to access parts. Visitor infrastructure maintenance is also described in detail, as well as activities related to nature education. Need to renew the regulation and proper enforcement are also reflected, as well as creation of a stakeholder panel.

Provisional budget up to 2024 is also presented as a table in a separate sub-chapter. This however must be seen more as an indication rather than prescription, since it is not possible to foresee the costs precisely for such a period.

Chapter 5 describes how the data, including results from monitoring and inventories are to be used for assessment of the management efficiency.

The bibliography includes over hundred entries that have been used for putting the Plan together.

Annex 3: Review of the Conditions and Recommendations made for the renewal of the European Diploma for Protected Areas in 2008

Condition 1. The ongoing land reform process shall not in any way change the present characteristics of the National Park or be detrimental to the Park's biodiversity. There appear to have been no problems. There are still about 50ha of land for which the ownership is uncertain and which might be claimed by a private land owner. The task of determining land ownership is the responsibility of the appropriate Municipality. However, in the interim, such land can be managed by the Environmental Board. It is anticipated that the process of determining ownership will be completed within 2 years.

Condition 2. Maintenance of meadows, particularly the coastal ones, shall continue to be given high priority. The on-the-spot visit confirmed that the meadows, semi-natural grasslands, are being appropriately managed. In at least one place a new bridge has been built so that local farmers can have access to cut hay and transport it off the site. The coastal meadows are being grazed, largely by cattle. It can be confirmed that this condition has been fulfilled.

Condition 3. The National Park's management shall have the necessary funds to continue its monitoring, enforcement and environmental activities. Given the global economic position, my impression is that the Matsalu National Park had been adequately funded. There are areas where greater allocation of funds could have been useful, such as in the analysis of data, but overall the priority of managing semi-natural habitats has been maintained. Again, I confirm that this condition has been fulfilled.

Condition 4. Private open land shall not be developed in any way that would be incompatible with the aims of the Park. The Municipalities deal with applications for development. They recognise the aims of the National Park, and there is always a two-way interaction. Broadly speaking, no development has been allowed except in the immediate vicinity of villages already within the National Park's boundary, and even then the encouragement is to renovate existing buildings. This condition has been fulfilled.

Comment on the four conditions. The Government, its Agencies and the National Park Administration have made considerable efforts to fulfil all four of these conditions. It therefore seems inappropriate to continue these forward into the 2018-2028 period, and hence they are not repeated in this report.

Recommendation 1. Co-operation with the farmers should continue, and where possible increase, particularly in the form of support for traditional uses like grazing or mowing. There was certainly good evidence of the co-operation with farmers, with abundant evidence of both cutting of the meadows and grazing with cattle (and, to a lesser extent, with sheep and horses). I plan to retain this recommendation, but in a slightly different format.

Recommendation 2. The National Park's management shall continue to play a social role to help the local people within the Park's boundaries develop activities compatible with the aims of the Park, such as bird-watching, handicrafts and restoration of the historical heritage. Discussions with County and Municipal authorities, and also with the Estonian Wildlife Fund, Terra Maritima, Marika Mann (Estonian Nature Tours) and the owner of Tuulingu, have indicated that there is good liaison with local people. There are two particular highlights – (1) the involvement with the Matsalu Film Festival¹ in Lihula (the 2010 catalogue shows that there were 147 events in the week-long programme and the 2016 festival was being held during the week following my visit) and (2) the award in 2015 of the European Charter for Sustainable Tourism in Protected Areas. Although it might be true that more effort could be of mutual benefit, overall this recommendation has been successfully implemented.

Recommendation 3. Potential external threats from industry, agriculture, tourism and development should be continuously monitored and a buffer zone in which hunting is prohibited should be established around the National Park. Because of zoning of the National Park, there is a *de facto* buffer zone around the areas of greatest conservation interest. Hunting is largely prohibited, although there is a need to control invasive species. Hunters have therefore been encouraged to control wild boar, to eliminate racoon dogs and mink especially on the islands in Matsalu Bay, but

there is a potential future problem with the golden jackal (which is discussed in the text of the report). A new recommendation will be made.

Recommendation 4. Continue the programme for the elimination of alien species. Work on invasive species continues, partly outlined above. This issue is discussed in the text of the report and a new recommendation will be made.

Recommendation 5. Reinforce the programme of scientific studies. Scientific studies have continued as outlined in the National Park's annual reports. However, scientific work could be considered in a more strategic context and hence a revised recommendation will be made.

Comment of the five recommendations. There has been considerable progress with implementing these five recommendations. Conditions within the National Park are never static and hence it is appropriate to revise and refresh any recommendations which are still appropriate. With this in mind, four of the five previous recommendations will be retained, but in a revised format.

¹ The first 10 years of the film festival are described in a book published in 2012, entitled *Esimesest kümnendani: 10 aastat Matsalu loodusfilmide festivali*.

Annex 4 : Matsalu National Park's bibliography, 2007-2016.

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H. Pehlak, 2014. Colour marking of Baltic Dunlin *Calidris alpina schinzii* in Estonia in 2010-2013.

Annex 5 : List of the Recommendations.

The overall recommendation is that the European Diploma for Protected Areas, first awarded to Matsalu National Park in 2003 and renewed in 2008, be further renewed. In renewing the European Diploma for the period 2018 to 2027 I recommend that the following seven recommendations are attached.

Recommendation 1: The management plan for 2015 to 2024 needs to be fully implemented, appropriately funded, and revised before the end of the plan period in 2024.

Recommendation 2: Continuing co-operation with the local farmers is essential for the management and well-being of the grassland communities of the National Park. This should be fostered at all opportunities, and liaison with both farmers and others in relation to the use of the hay cut would be beneficial.

Recommendation 3: In order to achieve the full potential of the National Park for scientific research and education, a Scientific Advisory Group should be established. The Group would provide strategic advice and, when requested, review the quality of research proposals and scientific results and provide other scientific advice.

Recommendation 4: Although hunting will always be severely restricted and confined to limited areas within the National Park, co-operation with hunters is essential for the management and control of invasive species.

Recommendation 5: Whilst alien, invasive species can threaten the biodiversity of the National Park, they should be controlled and, as far as practically possible, eliminated. An early warning system should be established so that the arrival of potentially invasive species can be noted and management action taken at an early stage.

Recommendation 6: By 2024 prepare a climate change adaptation plan for the National Park.

Recommendation 7: For national and International visitors printed guides to the hiking trails and hiking routes should be available in Estonian and other major European languages and, when the opportunity arises, the number of trails could be increased.