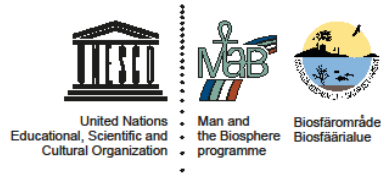
 <p>United Nations Educational, Scientific and Cultural Organization</p> <p>Man and the Biosphere Programme</p>	<h2>PERIODIC REVIEW FOR BIOSPHERE RESERVE</h2> <p>[January 2013]</p>
<h3 style="text-align: center;">INTRODUCTION</h3> <p>The UNESCO General Conference, at its 28th session, adopted Resolution 28 C/2.4 on the Statutory Framework of the World Network of Biosphere Reserves. This text defines in particular the criteria for an area to be qualified for designation as a biosphere reserve (Article 4). In addition, Article 9 foresees a periodic review every ten years, based on a report prepared by the concerned authority, on the basis of the criteria of Article 4 and forwarded to the secretariat by the State concerned. The text of the Statutory Framework is given in the third annex.</p> <p>The form which follows is provided to help States to prepare their national reports in accordance with Article 9 and to update the data available to the Secretariat on the biosphere reserve concerned. This report should enable the International Coordinating Council (ICC) of the MAB Programme to review how each biosphere reserve is fulfilling the criteria of Article 4 of the Statutory Framework and in particular the three functions. It should be noted that it is requested, in the last part of the form (Criteria and Progress Made), to indicate how the biosphere reserve fulfills each of these criteria.</p> <p>The information presented on this periodic review will be used in a number of ways by UNESCO:</p> <ol style="list-style-type: none"> <li>(a) for examination of the biosphere reserve by the International Advisory Committee for Biosphere Reserves and by the Bureau of the MAB International Coordinating Council;</li> <li>(b) for use in a world-wide accessible information system, notably for the UNESCO-MABnet and publications, facilitating communication and interaction amongst persons interested in biosphere reserves throughout the world.</li> </ol> <p>Kindly indicate if any part of this report should remain confidential.</p> <p>The form consists of three parts:</p> <ul style="list-style-type: none"> <li>• Part one is a summary highlighting the main changes in the biosphere reserve during the reporting period.</li> <li>• Part two is more descriptive and detailed, referring to the human, physical and biological characteristics as well as to the institutional aspects.</li> <li>• Part three consists of two Annexes (A): the first Annex (A.1) will be used to update the directory of biosphere reserves on the MABnet. The second annex will be used to provide promotion and communication materials of the biosphere reserve (A.2).</li> </ul>	



The third annex comprises the Statutory Framework for the World Network of Biosphere Reserves.

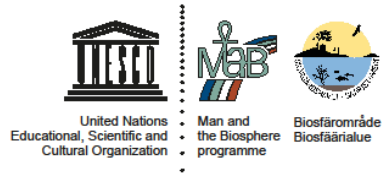
Please provide as many quantitative data as possible as well as supporting documentation to complete the information provided, especially:

- Map(s) clearly showing the zonation (see in particular 2.3.1);
- The legal texts for the different zones.

The form should be completed in English, French or Spanish. Two copies should be sent to the Secretariat, as follows:

1. The original hard copy, with the original signatures, letters of endorsement, zonation map and supporting documents. This should be sent to the Secretariat through the Official UNESCO channels, i.e. via the National Commission for UNESCO and/or the Permanent Delegation to UNESCO.
2. An electronic version (on diskette, CD, etc.) of the periodic review form and of maps (especially the zonation map). This can be sent directly to the MAB Secretariat:

UNESCO  
Division of Ecological and Earth Sciences  
1, rue Miollis  
F75732 Paris Cedex 15, France  
Tel: +33 (0)1 45 68 40 67  
Fax: +33 (0)1 45 68 58 04  
Email: [mab@unesco.org](mailto:mab@unesco.org)  
[www.unesco.org/mab](http://www.unesco.org/mab)



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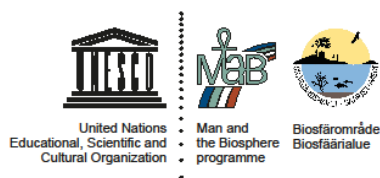
### PART II: PERIODIC REVIEW REPORT

1. Biosphere Reserve
2. Significant Changes in the Biosphere Reserve During the Past Ten Years
3. Ecosystem Services
4. The Conservation Function
5. The Development Function
6. The Logistic Function
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#### Annexes

Annex I: MABnet Directory of the Biosphere Reserves

Annex II: Promotion and Communication Materials – sent by email



## PART I: SUMMARY

- a) **Name of the biosphere reserve:** Archipelago Sea Area Biosphere Reserve, Skärgårdshavets biosfärområde (SWE), Saaristomeren biosfäärialue (FI)
- b) **Country:** Finland
- c) **Year of designation:** 1994
- d) **Year(s) of periodic review(s):** 2005
- e) **Previous recommendation(s) made by the International Co-ordinating Council (MAB- ICC), if applicable:**

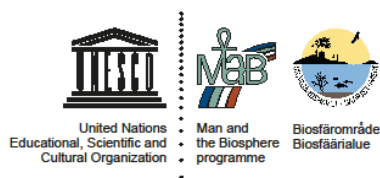
The response by ICC to the 2005 Periodic Review of the Archipelago Sea Area Biosphere Reserve, submitted in 2007, was a recommendation to extend the transition area of the biosphere reserve.

- a) **What follow-up actions are completed and if not completed/initiated, please provide justifications.**

The borders were reviewed and the transition area was enlarged and unified. The enlarged biosphere reserve includes the whole archipelago area, which is lacking permanent road connection in the subregion Åboland (ICC 2010). The administrative municipalities of the area are the Municipality of Kimitoön and the Town of Pargas.

- b) **Update on the implementation of measures to achieve the objectives of the biosphere reserve.**

The Biosphere Office has developed its methods of integrating the three main functions of biosphere reserves in its working processes. Five themes of main concern of the Biosphere Reserve (hereafter BR) have been chosen. These are: cultural landscapes, water conservation, nature tourism, housing and livelihood and branding of the biosphere reserve. The BR produces a yearly action plan where the objectives of the BR work are set. A yearly report is then produced to evaluate the effectiveness of the work in progress. Both the action plan and the yearly report are reviewed and accepted by the steering group of the BR and by the regional Centre for Economic Development, Transport and the Environment (hereafter ELY-Centre). The work



methods used to achieve the objectives are mainly a) Development projects aiming to promote combined ecological, social and economic sustainability b) Fostering local networks for cooperation and communication, linking universities with the regional development c) Education and permanent BR activities in schools d) International collaboration in the MAB –networks.

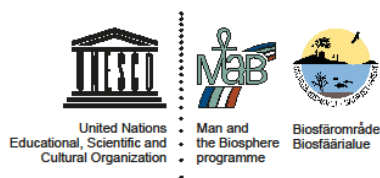
During the anniversary year of 2014, the BR office took many new actions to increase local and regional visibility of the BR and to engage new groups of people in the work of developing the BR. Measures included workshops and seminars, but also the introduction of many permanent PR products such as a BR flag, information boards, a brochure and a mobile exhibition to be lent to public spaces.

**c) Briefly describe the process by which the current periodic review has been conducted:**

The process began in January 2014 by arranging a seminar summarizing the last 20 years of the BR’s history. At the seminar, in addition to a summary of the BR’s activities and changes in management, topics such as tourism development as an important livelihood in the archipelago and changes in the archipelago nature were discussed. The seminar resulted in an anniversary publication published by the magazine “Tidskriften Skärgård”, presenting articles about the Archipelago Sea National Park and the Biosphere Reserve. In 2015, further discussions were held with members of the steering group and other partner organizations and stakeholders of the BR. The coordinators have been responsible for the making of the periodic review and the text being written by both the coordinators and experts from partner organizations.

**d) Area and spatial configuration:**

	Previous report (nomination form or periodic review) and date	Proposed changes (if any)
Area of terrestrial Core Area(s)	3000 ha	No proposed changes
Area of terrestrial Buffer Zone(s)	14 000 ha	No proposed changes
Area of terrestrial Transition Area(s)	19 000 ha	65 000 ha (changed 2010)
Area of marine Core Area(s)	47 000 ha	No proposed changes
Area of marine Buffer Zone(s)	218 000 ha	No proposed changes
Size of marine Transition Area(s)	121 000 ha	193 000 ha (changed 2010)



e) Human population of the biosphere reserve:

	Previous report (nomination form or periodic review) and date	At present (please state date of census or other source)
Core Area(s) (permanent and seasonally)	0 / 0 (2005)	0 / 0 (2015)
Buffer Zone(s) (permanent and seasonally)	100 (2005)	100 (2015) / (area enlarged 2010) seasonal about 5 times
Transition Area(s) (permanent and seasonally)	800 (2005)	3550 (2015) / (area enlarged 2010) / seasonal about 5 times

**f) Budget (main sources of funds, special capital funds) and international, regional or national relevant projects/initiatives carried out or planned.**

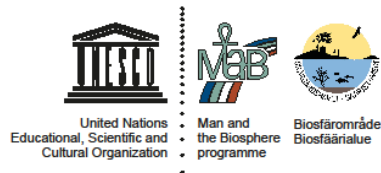
Budget in the previous report (nomination form or periodic review) and date	Current budget
50 000 euro (Office budget) + 1 400 000 euro (main projects) (2005)	62 000 euro (Office budget) + Main projects 2016: 150 958,-

The budget includes payment from the state and from different funds for the regularly arranged events. The projects *Närmat* (Pargas) and *Kustens mat i Åboland* (Kimitoön) are run by the municipalities. *Vårt Skärgårdshav* is run by The National Association of Finnish Islands (FÖSS). We report the budget for projects in 2016, because in 2015 the EU programs were about to start up a new program period.

**g) International, regional, multilateral or bilateral framework of cooperation. Describe, where applicable, the contribution of the biosphere reserve to achieve objectives and developing mechanisms that contribute to the implementation of international or regional bilateral or multilateral agreements, conventions, etc.**

Finland is a member of more than a hundred international environmental agreements. Many of projects activities of the BR have been implementing the goals of international agreements and conventions. Here we will list the most relevant for our BR.

**The European Landscape Convention**, ratified by Finland in 2005, promotes protection, management and planning of European landscapes and organizes European co-operation on landscape issues. In 2014 the government approved the national Cultural Environment Strategy



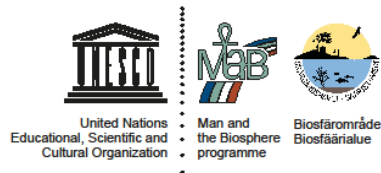
2014–2020, supplemented with an implementation plan in 2015. Two of 156 Finnish areas currently classified as nationally valuable landscapes, are situated in the BR. They represent the cultural landscapes of the country and their value is based on culturally significant natural diversity, cultivated agricultural landscape and traditional architecture. The areas were selected by the government in 1995. Between 2010 and 2014, new inventories were conducted in order to update the network of landscape areas. New areas will be verified during 2016. Several areas that are now proposed to become nationally or regionally valuable are situated within the BR. Furthermore, the BR is part of the Archipelago National Landscape, one of 27 National Landscapes in Finland.

Traditional agricultural landscapes, such as meadows and pastures managed in the traditional way, are special features of the Archipelago Sea. Consequently, the goals of the Archipelago National Park are expanded to protect not only the natural environment but also the culture of the archipelago and the traditional ways of utilizing nature. The BR Office plays an important role in this work and cultural landscapes are chosen as one of the focal themes for the BR. The BR Office contributes by involving private land-owners and animal farmers in the management of the cultural landscapes in the region, by raising awareness of the values of the landscape and promoting education of the management of the landscapes to the local land-owners and entrepreneurs. The BR has been involved in projects aiming to conserve and manage cultural environments and to develop methods to use these areas more effectively, for instance in tourism. The BR currently takes part in a project developing a cultural environment programme for the Åboland region.

**Convention on Biological Diversity.** The current national strategy and action plan “Saving Nature for People”, for the conservation and sustainable use of biodiversity, was approved in 2012. The main objective of the strategy is to stop biodiversity loss in Finland by 2020 and to ensure favorable status of biodiversity and ecosystem services by 2050. The document is based on all of the issues covered by the CBD. It aims to promote ecologically, economically, socially and culturally sustainable utilization and development of biodiversity and natural resources in Finland, without jeopardizing biodiversity, vital needs of future generations, or livelihoods based on natural resources.

Many guidance documents used in the conservation and management of the biosphere reserve, are based on this convention. The BR Office has been actively contributing to the implementation by fostering local cooperation networks, by school cooperation projects, by raising awareness of the value of biological diversity (especially semi-natural landscapes and the marine coastal environment), of the threats to biological diversity (especially marine eutrophication, marine pollution, invasive species and overgrown pastures) and by involving local people in the management and restoration of threatened habitats that are hotspots of biodiversity.

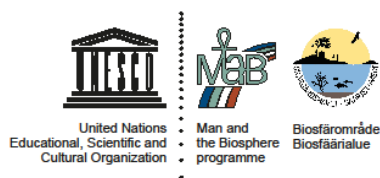
**The Bern Convention, Convention on the Conservation of European Wildlife and Natural Habitats**, is an agreement relating to the conservation of wild animals, plants and their habitats. It is an important basis for EU legislation, such as the Habitats Directive and the Birds Directive, on the basis of which the **Natura 2000 Network** is established. In the Archipelago Sea Area Biosphere Reserve, there are 20 areas listed in the EU's network of protected areas under Natura



2000 in accordance with the EU's Habitats Directive (SCI) (19 areas) and the EU's Birds Directive (SPA) (4 areas). The BR contributes to the management of the Natura sites by being part of projects directed at Natura areas, like EU LIFE projects (see part 4, conservation function).

Finland protects the Baltic Sea through national measures, cooperation with neighbouring states and by means of regional and international cooperation. Several regional cooperation organisations are active in the Baltic Sea region. The most important one for protecting the Baltic Sea is the **Baltic Marine Environment Protection Commission (HELCOM)**, whose members consist of the Baltic Sea coastal states and the European Union. The European Union is also taking steps to protect the Baltic Sea. An important international agreement is **The Helsinki Convention, Convention on the Protection of the Marine Environment of the Baltic Sea Area** is the basis for the Baltic Sea Protection Programme. The programme aims to reduce the eutrophication of the Baltic Sea, improve the ecological state of the nature and water areas of the Baltic Sea and reduce the risks and damage related to the transportation of oil, chemicals and hazardous substances and to preserve the biodiversity of sea and coastal nature. In 2005, the Action Plan for the Protection of the Baltic Sea and Inland Watercourses was approved. One of the measures was an inventory programme for the natural features of the marine and the coastal areas, including the underwater marine environment. The aim of the **EU Marine Strategy Framework Directive** is to more effectively protect the marine environment across Europe. It is the first EU legislative instrument related to the protection of marine biodiversity, as it contains the explicit regulatory objective that "biodiversity is maintained by 2020", as the cornerstone for achieving Good Environment Status (GES). The BR Office is involved in the implementation of the action plan of the Marine Strategy in Finland by rising awareness and strengthening of local networks to promote a good marine environment status.

The condition of the Archipelago Sea is another focal theme of the BR, and the BR has been actively involved in projects aiming to improve the state of the Archipelago Sea and the Baltic Sea as whole (see part 4, conservation function). The BR Office has also played an important role in the cooperation programme Pro-Archipelago Sea, a co-operative environmental research and protection programme that is involved in the implementation of the **Water Framework Directive of EU from 2000** (see 2.3.4).



## PART II: PERIODIC REVIEW REPORT

### 1. BIOSPHERE RESERVE:

**1.1 Year designated:** 1994

**1.2 Year of the first periodic review and of any following periodic review(s) (when appropriate):** 2005

**1.3 Follow-up actions taken in response to each recommendation from the previous periodic review(s) (if applicable), and if not completed/initiated, please provide justifications.**

The borders were reviewed and the transition area enlarged and unified. The enlarged area now includes the whole archipelago area without permanent road connections in the subregion Åboland, belonging to the Town of Pargas and the Municipality of Kimitön (ICC 2010).

**1.4 Other observations or comments on the above.**

The enlargement of the area has had a positive effect on the development of the activities and the visibility of the BR.

**1.5 Describe in detail the process by which the current periodic review has been conducted:**

**1.5.1 Which stakeholders were involved?**

The stakeholders represented in the Steering Committee were all involved in the process.

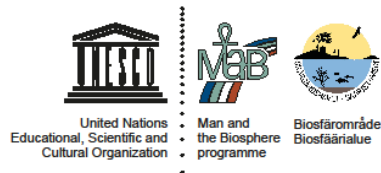
The Centre for Economic Development, Transport and the Environment in Southwest Finland (ELY-Centre), with regional responsibility of the BR management.

Both clerks and local politicians from Pargas and Kimitöön

Metsähallitus Parks and Wildlife Finland, with responsibility of the Archipelago Sea National Park

The University of Turku and the Archipelago Research Institute

The University of Åbo Akademi and the Institute for Archipelago Studies



Other stakeholders involved:

Experts from national organizations like the National Resources Institute of Finland (LUKE) and the Finnish Environment Institute (SYKE), the Regional Council of Southwest Finland and from local organizations like the Professional Fisheries Association of Åboland, Same Boat Leader Action Group and Åboland Archipelago Foundation

Local inhabitants, entrepreneurs, representatives from different associations, researchers and clerks at the 20th anniversary seminar

### **1.5.2 What methodology was used to involve stakeholders in the process (e.g., workshops, meetings, consultation with experts).**

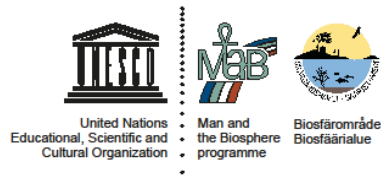
The process was started in January 2014, by arranging a seminar with a summary covering the last 20 years in the history of the BR. At the seminar, topics for discussion came up concerning tourism development and, in particular, change within the nature of the archipelago. The seminar resulted in an anniversary publication published by the periodical *Tidskriften Skärgård*, presenting articles about the Archipelago Sea National Park and the Biosphere Reserve. In 2015 and 2016, the coordinator arranged for similar topics of discussion with partner organizations and stakeholders of the BR. Several experts were consulted.

### **1.5.3 How many meetings, workshops, etc. occurred throughout the process of conducting this review?**

A seminar covering the last 20 years was organized. The Periodic Review process was discussed at a Steering Group meeting and the members, who were involved throughout the process, are experts in different subjects concerning the biosphere reserve. Additional consultations were conducted with e.g. experts from the universities and from local associations.

### **1.5.4 Were they well attended, with full and balanced representation? (Describe participation and stakeholders).**

At the 20<sup>th</sup> anniversary seminar 28.2.2014, about 100 persons attended. The representation of stakeholders and genders were balanced. Among the participants were local inhabitants, entrepreneurs, several local organizations as well as tourist guides, researchers and clerks.



## 2. SIGNIFICANT CHANGES IN THE BIOSPHERE RESERVE DURING THE PAST TEN YEARS:

**2.1 Brief summary overview: Narrative account of important changes in the local economy, landscapes or habitat use, and other related issues. Note important changes in the institutional arrangements for governance of the biosphere reserve area, and changes (if any) in the coordinating arrangements (including the biosphere reserve organization/coordinator/manager) that provide direction for the biosphere reserve. Identify the role of biosphere reserve organization/coordinator/manager in initiating or responding to these changes.**

The reorganization of municipalities in Finland has resulted in the merging of small municipalities into larger ones. The small archipelago municipalities have merged with two larger and more densely inhabited districts into two new boroughs. This has affected both local democracy and the management structure of the BR. Concerning the management of the BR, the reorganization has resulted in a new structure based on a three-part contract for the administration of the BR. Earlier, the coordination of the BR was placed at Region Åboland, a development center for the municipalities in the region of Åboland. Since the eight municipalities in Åboland merged into two, the organization of Region Åboland was abolished. The new, so called Biosphere Office, was established to include the three administrative partners: ELY-center, the Town of Pargas and the Municipality of Kimitoön. The Biosphere Office is located in Pargas, at the Department for Livelihood. The physical office is located in Korpo, in the heart of the BR. This was a step closer to an even stronger involvement of the municipalities, which has been an important goal in developing the management structure of the BR. The reorganization into larger municipalities naturally affect the possibilities for local participation in decision-making, which has resulted in local boards in the former municipalities of Pargas and an archipelago board in Kimitoön. The BR function for enhancing sustainable development in the Archipelago Sea area has now, in the time of centralizations, an even more important role for the former archipelago municipalities.

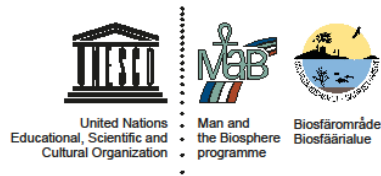
Local economy has been heavily affected by the national and global economy. There has been severe economizing and centralizing of the municipal services, especially in rural areas. The archipelago area is continuously under pressure from reduced services. The small, former archipelago municipalities are still facing a depopulation, which seems to be enhanced by severe cuts resulting in the closing of local schools and the reduction in healthcare services and car ferry capacity. The BR office is largely focusing its activities on strengthening the local society, for example by promoting new niches for livelihood, promoting immigration, and strengthening the sense of belonging among young people of the region. The BR Office has been running development projects for strengthening the diversity of livelihood. The project **Knowsheep** was about strengthening the sheep industry and developing quality sheep products.



© Mikael von Numers

The sheep are also important for the management of the cultural landscape in the region. Another project with a focus on livelihood, **Mathantverk** (a concept of Artisan food), started up an educational program for artisan food entrepreneurs (see 5.10). The coordinator is involved in all kind of developmental work, aiming to keep the archipelago prosperous and inhabited.

The amount of permanent inhabitants is still decreasing, while part-time inhabitants and tourists increase. Increased recreational use of coasts and islands is changing the region in a multidimensional way. In the summer season, the archipelago area is full of people - at some places almost to the limit of social and ecological acceptance. The increasing amount of part-time inhabitants and tourists are of high importance for the local economy. Many entrepreneurs are getting the majority of their income during the summer. During the last 10 years, there has been a more constructive approach among local entrepreneurs towards tourists and the part-time population, in finding new innovative ways to deal with the uneven distribution of customers over the year. Some surveys are showing the benefits of part-time population and what tourism has done. The results have been used for strategically local development work (Annex VI). At the same time, the service structure is challenged by the uneven distribution of customers. In



most cases, the region is well adapted to the situation, but for the authorities responsible for waste-management, ferry connections etc., the situation can be very challenging. The massive amount of summer cottages also has an ecological influence on coastal land use and the public availability of the coastline. Some of these issues have been discussed at the annual public winter meetings of the Archipelago Sea Area. **The Åboland Archipelago Foundation**, in itself an interesting outcome of the development of new tools for promoting sustainable living and livelihood in the biosphere reserve, has presented a new model for sustainable ways to enhance migration and job opportunities on the small islands of the archipelago. The Foundation bought a cultural-historically and socio-economically important property on the small island Brännskär in the biosphere reserve and rented it to a young boat builder and carpenter and his family. In cooperation with the foundation, he has developed an interesting touristic site that is one of the most popular guest harbours in the region today. The attractiveness of Brännskärs is largely based on near nature activities, a cultural-historical imprint and a familiar atmosphere. Today, there are already two families and two active companies on the island (See 5.4, 5.10).

During the last decade, the managed pastures increased due to local measures in the BR. It is still a challenge to preserve the cultural landscapes with a high biodiversity, because of the physical management needed. But the amount of managed pastures both inside and outside the Archipelago National Park has slowly grown. Metsähallitus, the ELY-center and the BR Office have all together, with different measures, promoted the management of the cultural landscape. The EU subsidies for the management of cultural landscapes and preserving biodiversity are of great importance for the results. There is a great interest among both landowners and animal farmers, but the costs of performing the management can be unreasonably high due to the challenging geographical settings.

In recent decades, nutrient pollution inputs to the Archipelago Sea from towns, cities and industrial facilities have declined considerably, thanks to improvements in wastewater treatment. But attempts to curb nutrient inputs from diffuse sources have been less successful. Internal nutrient loading of the sea still affects the sea heavily and slows its recovery. The BR Office is continuously trying to raise awareness of the small acts that people can do for the sea. Much of the work done with children is focusing on questions about sea quality. New growing concerns are the plastic micro particles from wastewater and increased cargo shipping in the Baltic Sea.

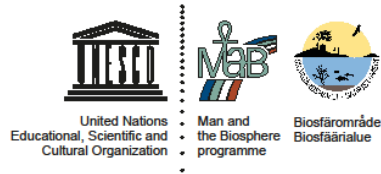


© Maria Carling

Coastal fishery has continued to decrease during the period of the report. The small-scaled fishery is struggling with obstacles like fishing water availability, growing seal and cormorant populations and changes in the balance of fish species. Due to the eutrophication fish catch consisting of low value fish has radically increased. The Natural Resources Institute Finland (LUKE) and the Finnish Environment Institute (SYKE) are preparing a Finnish roadmap for blue bioeconomy with the leadership of the Ministry of Agriculture and Forestry. It is believed that there is great potential in water-related expertise. The ambitious work of John Nurminen foundation is promoting the use of the so called “trash fish”. The possible economic benefits from low-value fish species can develop the fishery in new directions. The increase of export of fish is also of high importance in the development of Blue Economy. The local economy in the BR will eventually benefit of the development of new niches in fishery.

## 2.2 Updated background information about the biosphere reserve.

The ASABR is located in the archipelago of Southwest Finland, inside the borders of two municipalities, Pargas and Kimitoön. The total area is about 5400 km<sup>2</sup>, of which about 85% (4580 km<sup>2</sup>) is water. About 3500 people live permanently within the biosphere reserve. The whole Archipelago Sea (larger than BR) consists of about 13000 islands with the size of a hectare or larger. Rocky islands with low vegetation dominate the landscape. The largest inhabited



islands are connected to the mainland with car ferries and smaller ones with small passenger ferries. 92 of the smaller islands are permanently inhabited and there are many more with summer cottages. The brackish sea is shallow with a mean depth of 23m. In the winter the sea can be covered with ice, but during the last years the winters have been warm and the ice scarce. Some winters the time between open water and ice-covered water can be challenging for the inhabitants of the outer islands.

**Major ecosystem type:** Temperate broadleaf forests or woodlands; Brackish water archipelago (according to Udwards classification system)

**Major habitats & land cover types:** Coniferous forests characterized by Scots pine (*Pinus sylvestris*), spruce (*Picea abies*) and birch (*Betula pubescens*); mull-soil forest with spruce, birch and aspen (*Populus tremula*), characterized by alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*) or oak (*Quercus robur*) and hazel (*Corylus avellana*); wooded and dry meadow including plant species like *Dactylorhiza sambucina*, *Agrimonia eupatoria*, *Dianthus deltoides* etc.; field, heath and rocky meadow with *Cladonia* spp., *Empetrum nigrum*, *Arctostaphylos uva-ursi*; rocky treeless islets with *Allium schoenoprasum*, *Tripleurospermum maritimum*, *Cochlearia danica* etc.; sandy islets with *Urtica dioica*, *Sedum acre*, *Fragaria vesca* etc.; seashore supporting *Angelica sylvestris*, *A. archangelica litoralis*, *Isatis tinctoria*, *Linaria vulgaris*, *Festuca polesica*, *Carex* spp. etc.; Baltic marine area with species such as *Fucus vesiculosus*, *Cladophora glomerata*, *Furcellaria* etc.; agroecosystems with rye, barley, sugarbeet etc.; forestry ecosystems with Scots pine and spruce.

**Bioclimatic zone:** According to Köppen's climate classification, Finland belongs wholly to the temperate coniferous-mixed forest zone with cold, wet winters. The average duration of permanent snow cover is approximately 2-3 months. Sea normally freezes during winter. July is the warmest month (mean 16°C at Utö weather station) and February the coldest (-3.5°C). Mean annual precipitation is slightly above 500 mm.

**Location** (latitude & longitude): 60°N; 22°E

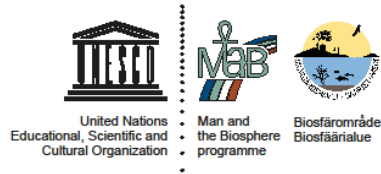
**Total Area** (ha): 540 000

**Core area(s):** 50 000 of which 47 000 water

**Buffer zone(s):** 232 000 of which 218 000 water

**Transition area(s):** 258 000 of which 193 000 water

**Altitudinal range** -105 to +50:



**2.2.1 Updated coordinates (if applicable). If any changes in the biosphere reserve's standard geographical coordinates, please provide them here (all projected under WGS 84):**

<b>Cardinal points:</b>	<b>Latitude</b>	<b>Longitude</b>
Most central point:	8369314,461	2430305,967
Northernmost point:	8474396,187	2354368,901
Southernmost point:	8291307,062	2393171,359
Westernmost point:	8390283,128	2340336,23
Easternmost point:	8377823,121	2543725,554

**2.2.2 If necessary, provide an updated map on a topographic layer of the precise location and delimitation of the three zones of the biosphere reserve Map(s) shall be provided in both paper and electronic copies. Shape files (also in WGS 84 projection system) used to produce the map must also be attached to the electronic copy of the form. Annex maps.**

**If applicable, also provide a link to access this map on the internet (e.g. Google map, website).**

The map is not available on the internet.

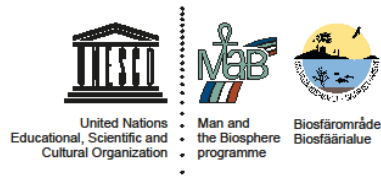
**2.2.3 Changes in the human population of the biosphere reserve.**

**Most recent census data:**

Permanent inhabitants 3535 (2015). Before the revision of the borders by the BR, the population was only 900 persons. With the enlargement of the area the population of the BR increased to 3600 persons (2009). In general, there is a trend of a decreasing population, but the decrease has only slowed down slightly. On the islands without car ferries, there are 363 permanent inhabitants registered and 51 inhabitants are registered on islands without any connection. A bridge was built to Kasnäs in 2011, which was the first permanent connection to mainland from the BR. 79 persons live on Kasnäs Island.

**2.2.4 Update on conservation function, including main changes since last report. (Note briefly here and refer to 4 below).**

There are several conservation programmes that are conducted in the BR for the protection of species and habitats in need of special attention. Several areas are also protected by private conservation areas through e.g. the programme Metso (see 4.2). The Archipelago Sea is included in the NATURA 2000-network as SCI and SPA. In addition, there are 21 other areas in the BR included in the network.



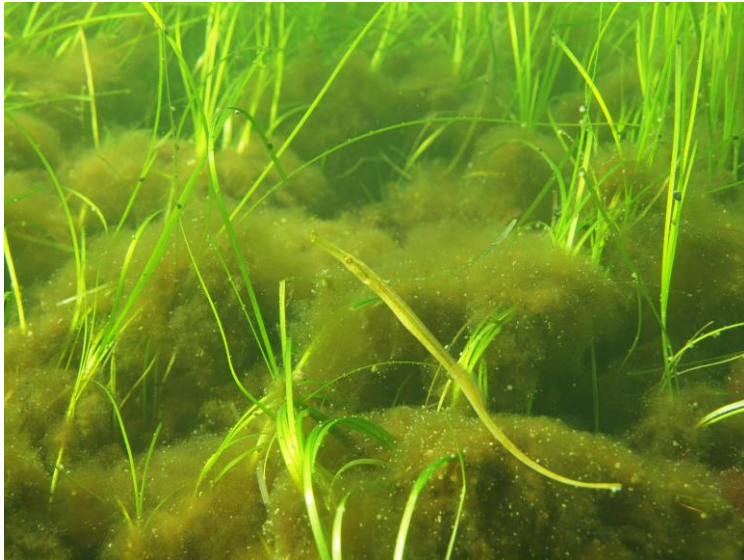
The continuous transformations of the cultural landscapes, due to the depopulation and changes in agriculture, have been a central issue for the BR since the beginning. Since the old cultural landscapes are no longer used by humans as pastures or hay meadows, the open landscapes are becoming more densely vegetated and losing biodiversity. In general, the decrease of human intervention within the cultural landscapes is resulting in a decreasing biodiversity. The national park has a lack of resources for the management of all the overgrown cultural biotopes. Ten years ago, there was also a lack of available farm animals for grazing.

The BR Office has had a central role in promoting cooperation in the management of cultural landscapes, in engaging both new and existing animal farmers. As a result of the work of the BR Office, cultural biotopes on private land have been managed as well, local entrepreneurs have been educated in landscaping and new animal farmers have been involved in the management. The EU subsidies for preserving cultural landscapes and biodiversity are of great importance for animal transportation to the small islands in the outer archipelago. The BR Office, with its sustainable development approach, has been an important link between the economic and ecological values and has functioned as a spider in the web in promoting the management of cultural landscapes in the Archipelago Sea Area. In 2014, as a part of the anniversary program of the BR, a Bioblitz-event was arranged for the first time in the ASABR. The Bioblitz gave tools for integrating environmental education in conservation activities and a new model for cooperation between the national park, volunteers and local stakeholders.

The changes within the marine environment are probably the greatest. Especially habitats like bladder wrack belts, *Fucus vesiculosus*, Sea Grass meadows of *Zostera marina* and blue mussel beds, *Mytilus edulis*, are threatened due to eutrophication and overgrowth of filamentous algae. Also due to eutrophication are the hypoxic areas on the deep bottom of the sea, which are also increasing.

The ecological balance and the structure of the fish fauna have changed due to human activities and the eutrophication of the sea. Fish species with economic value, like flounder and trout, have decreased and others less interesting for the fishery, for example cyprinids, have increased. The cormorant, *Phalacrocorax carbo*, has increased radically due to the nutrient-rich marine environment and is locally a plague to the coastal fishery (see 5.3). Another species that has recovered from a strong population decline is the grey seal, *Halichoerus grypus*. The seal is, however, also a plague for the coastal fishery mainly because of the damage caused to fishing equipment.

Increased awareness of the marine environment is of high importance for the conservation work. The condition of the Baltic Sea and the Archipelago Sea has a negative impact on the biodiversity of the marine habitats. The nutritional input from agriculture and the sewage have clearly decreased, but the positive effects are not yet to be seen. The knowledge of the marine habitats



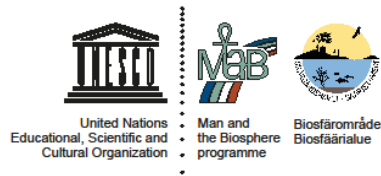
has increased along with the major marine inventories that have taken place since the year 2000 (see 4.3), which is of high importance for the conservation activities. Pro-Archipelago Sea Programme is a co-operative environmental research and protection programme of importance for the ICZM in the BR. The objective of the programme is to improve the state of the water and the coastal area of the Archipelago Sea and to reduce land use conflicts in the area (see 4.3).

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The Biosphere Reserve Office has primarily focused on information about the condition of the sea by various public events. In 2006, a theme year for the Archipelago Sea was organized in conjunction with several partners in the region. Also practical events have been arranged, such as a course in the abatement of oil pollution and events for the cleansing of beaches. In 2007, a seminar focusing on the complexity of the changes in the Archipelago Sea was organized. Great effort has also been on putting out on information about how the treatment of wastewater affects water quality, despite the given advice for different wastewater treatment solutions. In 2010, arrangements were made to enable residents in the BR to apply for funding for the planning of new sewage treatment systems. The ambition was partly to make residents focus on planning to install the best solutions, both environmentally and economically, and partly to entice people to get started with the renewal of the waste-water treatment, required by the law.

### **2.2.5 Update on the development function, including main changes since last report.** (Note briefly here and refer to 5 below).

The Biosphere Reserve Office supports the local development by promoting **local food and small-scale food processing** (see 5.10) in the region. During the last five years, several projects within the food sector have been managed. *Mathantverk* (artisan food) is a new concept especially suited for small-scale surroundings like the archipelago. In cooperation with other regions in Finland, a training program for different trades within the food craftsmanship started in 2013. Currently, the training program runs for the second time and involves an even larger region. The BR is working at several levels: educating and supporting producers in their



businesses, but also supporting networks of direct trade between local farmers and consumers and the HoReCa-industry.

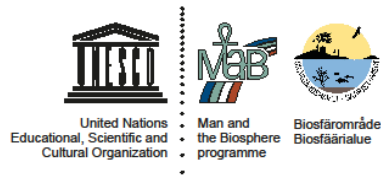
The BR Office has made significant efforts to support **sheep farming** (see 5.3) in the archipelago. This has had a clear positive impact on the sheep industry that has grown during the last decade. The scattered landscape in the archipelago results in small-scaled farming, which, however, gives good preconditions for the production of quality products. The interest for sheep products and quality meat products in general, have increased. However, a processing of these products is necessary, to make them more profitable. In the *Knowsheep* project (funded by EU Central Baltic program), we shared knowledge and practices with Estonia and Sweden in order to facilitate the sheep industry through the whole value chain, including production, processing and marketing of sheep products.

Animal farming in the archipelago has both ecological and cultural benefits, as long as traditional methods are maintained. The BR Office has highlighted the economic aspects of **cultural landscape management** (see 5.10) and encouraged animal farmers to brand their products as quality products, such as meadow meat, if they conduct management of cultural habitats. The BR Office has carried out projects to educate and employ landscaping contractors, and to promote networking among landowners and animal owners. The projects have been funded by EU programs like Leader.

The Archipelago Sea Biosphere Reserve Office pays significant attention to activities that are trying to **cease the depopulation** (see 5.4) of the archipelago. In 2008, the Åboland Archipelago Foundation was founded. The BR Office has administered the establishment of the foundation, with the help of a project funded by the EU Leader program. The Foundation works for a vital archipelago by promoting a sustainable economic, ecological and socio-cultural development in the Archipelago Sea. The BR coordinator serves as secretary in the foundation and the two bodies work in close cooperation, which has opened new opportunities for the BR Office.

The island of **Brännskär** (see 5.10) has become a model for how a viable archipelago can be promoted. Through the development of this model, the BR Office and the Åboland Archipelago Foundation have been able to realize an action that exactly corresponds to the purposes of the BR. The island property was purchased on the free market and leased for all year round accommodation. Brännskär has now been inhabited for more than five years and has been developed into an innovative center for tourism. Several companies are based on the island. All construction work and all activities have been realized in a sustainable manner, by taking into consideration the natural values and the cultural history of the island. The EU Leader program has funded several development projects at Brännskär.

The Biosphere Reserve has not developed into a tourist destination in itself, but the BR Office has participated in the development of **sustainable tourism** (see 5.2) through strategic planning, certification of tourism enterprises in connection with PanParks (see 5.7), development of new nature and culture trails, brochures presenting the history of the villages in the archipelago and information materials about the biosphere area.



### **2.2.6 Update on logistic support function, including main changes since last report. (Note briefly here and refer to 6 below).**

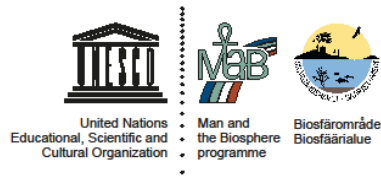
A central task of the biosphere reserve is to support environmental and sustainability education in the area. The BR Office provides such education on its own, but also acts as a link between universities and research institutes and the general public. The continuous project Biosphere goes to school (see 2.4.9), is a good example of educational activities. Environmental education in nurseries has been realized through a project based on the mascots *Gäddan och gänget* (transl. the Pike and its friends), who yearly introduce a new theme for the nursery to work on, for example recycling or clean water issues (see 5.10).

A way of bridging the gap between researchers and the general public, is the regular seminars arranged by the BR Office. In cooperation with the Archipelago Institute at ÅA, the BR Office has developed a special series of seminars – Forum for Archipelago Science, organized twice a year in the BR. The seminars have changing overall topics, and different researchers are invited to give talks about their research or studies in a popularized manner. The BR has an important role of being a neutral arena for sharing knowledge, both traditional and scientific. The Archipelago Sea Winter Meeting was made to create a forum for all those who are interested in the biosphere reserve activities. The winter meetings are nowadays important forums for building bridges and developing cooperation projects. The BR Office has together with local experts and researches developed two mobile exhibitions that are lent to different localities and events.

The BR Office is not directly involved in any monitoring or research activities in the BR, as these tasks are carried out by many different stakeholders. University of Turku (UTU), with its Archipelago Research Institute, Åbo Akademi University (ÅAU), with its field base Korpoström, Metsähallitus Parks & Wildlife Finland, the ELY-Centre and Natural Resources Institute (LUKE), amongst others have very important roles in producing biological information about the BR (see 6.1.). The state of the Baltic Sea is a great focus of the BR Office, as the coastal areas in the BR offer very important resources for traditional livelihoods, tourism, residents and outdoor recreation.

Korpoström Archipelago Centre is a venue where science, art and culture intertwine. The BR Office is actively involved in the activities at the center, as are many of the collaborators of the BR. The center is therefore a place where many cooperation projects are realized. Activities at the center include marine science, management of the national park, traditional handicrafts, art exhibitions and seminars. In 2016, an educational corner for children to discover marine science was opened as a cooperation project initiated by the BR Office.

The BR Office has put a lot of effort in enhancing the visibility of the BR. Communication has been broadened and improved, with an electronic newsletter, a new website and through social media, e.g. Facebook and Twitter. The BR has had its own logo since 2012, which is used to mark out the activities of the BR. A new BR flag and information boards are found at 12 sites in the BR. We have included more stakeholders and target groups and improved our communication within these networks.



The coordinator of the Archipelago Sea BR is co-leading the NordMAB network. Finland is also currently a member of the EuroMAB Steering Committee (2015-2017). The task is shared between Northern Karelia BR and Archipelago Sea Area BR. Furthermore; the BR is active in the Island and Coastal Biospheres network. The Archipelago Sea Area BR has lately organized 2 international BR meetings (NordMAB 2007, NordMAB 2014). Common projects have been carried out with BRs in NordMAB, like North-Carelia/Finland, North-Vidzeme/Latvia, and Western Estonian Archipelago/Estonia. We have also collaborated with Cat Ba BR in Vietnam on sustainable tourism.

### **2.2.7 Update on governance management and coordination, including changes since last report (if any) in hierarchy of administrative divisions, coordination structure.**

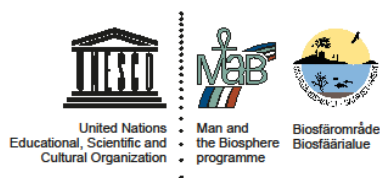
(Note briefly here and refer to 7 below).

In Finland, the Ministry of Environment is responsible for the biosphere reserves on a national level. On a regional level, the responsibility lies with the ELY-Centre (The Centre for Economic Development, Transport and the Environment in Southwest Finland), previously the Center of Environment of Southwest Finland. The ELY-Centre is receiving a yearly payment from the Ministry of Finance for the coordination of the BR. The fixed sum of 50.000 euros was increased to 60.000 euros in 2013. Since the year of 2005, the management of the BR has been based on cooperation between the ELY-Centre and the municipalities. The coordination services have been bought from the municipalities by the ELY-Centre. In the beginning of the period of the report, the coordination was conducted by the regional development center Region Åboland, run by the municipalities. Since 2009, when the boroughs immersed into the two larger municipalities Pargas and Kimitoön, the coordination services have been bought from Pargas. The new coordination arrangement has been very successful, since it has brought the management of the BR even closer to the local society, it has increased the involvement of local stakeholders and strengthened the connection to the local inhabitants. The administrative cooperation based on three-part contract between ELY-center, Pargas and Kimitoön, is giving the “Biopshere Office” a structure. Pargas is in charge of the Biosphere Office, which is rather a cooperative model than a physical place. The coordinator(s) is/are employed by Pargas and the office is financed with the payment from the ELY-centre. All activities are financed with external money applied for by the BR Office or by any of the partners. Both municipalities are committed to support the BR by conducting activities mainly by running development projects.

Metsähallitus Parks and Wildlife Finland are responsible for the Archipelago Sea national park and the management of protected areas.

### **2.3 The authority/authorities in charge of coordinating/managing the biosphere reserve: (Comment on the following topics as much as is relevant).**

#### **2.3.1 Updates to cooperation/management policy/plan, including vision statement, goals and objectives, either current or for the next 5-10 years**



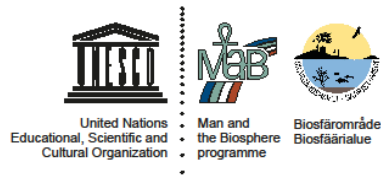
A strategy for the BR was formulated and approved for 2009-2011 and later updated until the year of 2017. The vision states that the Archipelago Sea Area BR is a viable model for sustainable development in coastal and archipelago areas. The partner organisations are committed to cooperate to preserve and develop the archipelago in order to maintain a living and attractive environment in the area. While the high natural and cultural values of the area are accounted for in its development, it is an ideal area for cross-sectional research, education and pilot projects in applied environmental sciences.

Goals:

1. Preserve biodiversity
2. Reduce pollution of the coastal waters and the Baltic Sea
3. Preserve cultural heritage and support traditional livelihoods in the region
4. Promote regional development aiming at a lead position in ecologically sustainable solutions (energy production, business/economy, tourism and Integrated Coastal Zone Management).
5. Promote settlement and livelihood in the archipelago and support a pleasant living environment that attracts settlers, tourists and entrepreneurs.
6. Support construction and maintenance of vertical and horizontal cooperative networks addressing issues that are important for the Archipelago Sea and that promotes communication between universities, decision-makers and local people.
7. Act as a model area for sustainable solutions together with other biosphere reserves in the global network of biosphere reserves.

**2.3.2 Budget and staff support, including approximate average annual amounts (or range from year-to-year); main sources of funds (including financial partnerships established (private/public), innovative financial schemes); special capital funds (if applicable); number of full and/or part-time staff; in-kind contribution of staff; volunteer contributions of time or other support.**

**Biosphere Reserve Office:** The yearly budget consists of a fixed payment by the State, through the ELY-center (60.000 euro/year) and a small contribution based on the needs by Pargas (about 1000 euro/year) and Kimitoön (about 250 euro/year). The coordination is outsourced, administrated by the Town of Pargas and has one full-time coordinator employed. Pargas also supports the office by offering some essential services like translation (swe-fin). Both areas handle project planning and administration for several of the BR projects. They are also contributing to the marketing and visibility of the BR. About 1-2 part-time personnel/year are employed with external project financing. Staff from local partners, like schoolteachers, national



park staff, clerks and researchers, are often doing in-kind contributions at seminars or other events. Also other local people contribute in this way.

**Funds and financing of activities:** All activities and projects are realised by external funding. Funding pathways include EU-programs like Interreg, Leader, other developmental programs of the state, and private funds for cultural, educational and environmental purposes. Some of the activities are conducted by partner organizations of the BR. The BR Office has initiated and been involved in conducting externally financed developmental projects for a total sum of 4 million euros during the last decade. Additionally, the BR is centrally involved in many other developmental projects that are promoting the local society and nature preservation in the Archipelago Sea area.

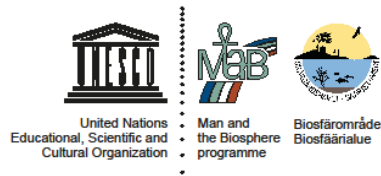
Yearly, the BR Office gets approx. 2500€ from external funds like Svenska Kulturfonden (Fund for Swedish Culture) and Åbolands Skärgårdsstiftelse (Åboland Archipelago Fund) for seminars and workshops.



### 2.3.3 Communications strategy for the biosphere reserve including different approaches and tools geared towards the community and/or towards soliciting outside support.

There is no communication strategy yet, but the communication plan is described in every action plan. The BR Office has many tools for communication. External communication channels are flags and information boards distributed in the area, information in tourist brochures, a BR brochure, social media like FB and Twitter, a home page and a newsletter twice a year (hard copy and e-copy). Local media like newspapers and radio channels are used to reach a broader public. Internal communication is handled mainly by e-mail.

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### **2.3.4 Strategies for fostering networks of cooperation in the biosphere reserve that serve as connections (“bridging”) among diverse groups in different sectors of the community (e.g. groups devoted to agricultural issues, local economic development, tourism, conservation of ecosystems, research and monitoring).**

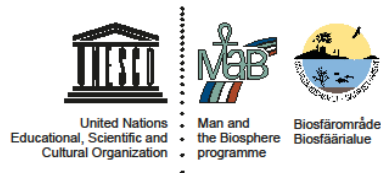
The management of the BR is based on a cooperative model that enhances the bridging function. See 2.2.7 and 2.3.1.

The cooperation programme *Pro-Archipelago Sea* (In Finnish: Pro Saaristomeri–ohjelma) is a cooperative environmental research and protection programme. It was founded in 1999 by different parties concerned about the weak state of the Archipelago Sea, and now has about 70 member groups. The objective of the programme is to improve the state of the water and the coastal area of the Archipelago Sea and to reduce land use conflicts in the area. Another objective of the cooperation is to activate the ICZM actors that have the possibility to improve water quality in the Archipelago Sea and its catchment area. During several years, the BR coordinator has been holding a role as secretary in the sub-network of particularly the Archipelago Sea Area. Other sub-networks concern the catchment areas.

The BR Office has also had a vital role in the Archipelago Sea Cooperation Group for sustainable nature tourism in the Archipelago Sea area. The group is not active at the moment. It was established in connection with the membership in the PanParks network of wilderness areas in Europe that is no longer an active network. The function of the Cooperation Group was to support the Archipelago Sea Area in the certification process for the Panparks network and to promote a sustainable development of nature tourism in the national park and biosphere reserve. The Strategy for Nature Tourism in the Archipelago Sea was the lead document for the Cooperation Group. (See also 2.4.7, 5.2 and 7.5.1).

### **2.3.5 Particular vision and approaches adopted for addressing the socio-cultural context and role of the biosphere reserve (e.g. promotion of local heritage resources, history, cultural and cross-cultural learning opportunities; cooperation with local population; reaching out to recent immigrant groups, indigenous people etc.).**

Since the establishment of the BR, the MAB–programme has been clearly introduced as a programme for the people in the archipelago. The differences, as well as the relations between the nature protection programmes of the protected areas and the agenda of the MAB–programme have been thoroughly explained, in order to emphasize the purpose of the BR to support nature conservation and a sustainable society through voluntary work and cooperation. In the activities of the BR, this overarching vision is realized by focusing on actions for ecological, economic and social sustainability at the same time. Most of the BR projects have, in a way or another, related to issues concerning livelihood and/or residence. In the Management Plan of the ASABR, two of the goals of the BR are specifically focusing on socio-cultural issues; one is to preserve cultural heritage and support traditional livelihoods in the region, the other is to promote settlement and livelihood in the archipelago and support a pleasant living environment that attracts settlers, tourists and entrepreneurs.



A natural balance between traditional and scientific knowledge is always endeavoured through educational activities and seminars. Local people from the occupational group of concern of a specific project are always involved in project planning.

The presence of the BR at the **Korpoström Archipelago Center** gives additional tools for reaching local people. Korpoström Archipelago Centre is a center for science, art and culture alike, united by the archipelago and its nature. Situated in the heart of the BR, the center provides venues for meetings and seminars as well as private events throughout the year. The Archipelago Sea National Park opens up to the south. Metsähallitus Parks and Wildlife Finland has offices at the center, while the University of Åbo Academy/Environment & Marine Biology has a fieldbase in Korpoström. In addition to business and private events venues, the Centre also operates a guest harbour and a restaurant. In 2009, a hotel was also established, offering its customers scenic seaside views. In 2015, **the Åboland Archipelago Foundation** (see 2.1, 5.4, 5.10) was donated the majority of the estate and is now the main owner of the Archipelago Center. The program management is based on local cooperation and the activities are run by several organizations. The Archipelago Center is merging science, art, history, traditions and even popular culture. Until now, the center has supported the promoting of the BR in many ways. In the future, we hope to integrate the concept of the BR in the activities at the center even more, since the center could conveniently be functioning as Biosphere Reserve Center.

As a curiosity, it could be mentioned that Nagu (one of the former municipalities of the BR) has become a model for immigrant integration. The fantastic engagement by the local inhabitants in the integration of refugees has been noted internationally. The coastal society of the Archipelago area has always welcomed guests from afar. With the trend of a decreasing population, people are eager to see new inhabitants finding their way into the society.

### **2.3.6 Use of traditional and local knowledge in the management of the biosphere reserve.**

In the steering committee of the BR, local people are represented through two politically elected delegates from the local communities. The steering committee is responsible for the Action Plan of the BR. At seminars and other educational activities, a natural balance between traditional and scientific knowledge is always endeavored. Different planning processes always involve local people from the occupational group of concern for specific projects.

### 2.3.7 Community cultural development initiatives. Programmes and actions to promote community language, and, both tangible and intangible cultural heritage. Are spiritual and cultural values and customary practices promoted and transmitted?

The management of the cultural landscapes has been of central importance for the BR since the beginning. The cultural landscapes are high in biodiversity and both esthetically and culturally valuable. The management of the ecologically important nature types also promotes the preservation of a cultural heritage. Both the landscapes and the managing methods represent a traditional agriculture.

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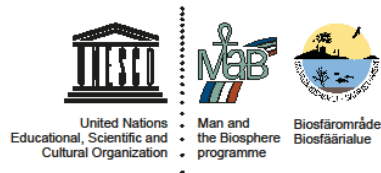
The BR Office has promoted documentation of cultural heritage in different ways. The Åboland Archipelago Foundation has made a documentary film about how life has changed for a man in the archipelago during his life-span of about 70 years, called *Skärgårdsliv förr och nu* (*Archipelago life then and now*, director Jan-Ole Nordlin/Pätkä Productions). The film is based on interviews made in a local dialect of Nagu. The film was shown four times for a local audience and later broadcasted on national television. At all the Archipelago Sea Winter Meetings and Forums for Archipelago Research, both traditional and scientific knowledge is presented. For example, the 2015 Winter Meeting had the interesting theme *Ice and winter in the archipelago*, presenting the more intangible cultural heritage concerning ice knowledge, previously not that



well documented. In the framework of a project called *Skärgården och Människan – kulturen som påverkare av miljön* (*The Archipelago and the Man - the culture influencing the environment*), the BR Office, together with Metsähallitus and some villages of the outer archipelago, produced quality informative material for touristic purposes; a brochure with cultural historical information as well as a study about the history of village life in the

Archipelago of Åboland. Village associations and other similar local societies have an important role in preserving cultural values by arranging traditional events and running local museums.

A regional cultural environmental programme, *Åboland - our common cultural heritage*, is being produced. New inventories of cultural historical constructions are conducted and public events



are arranged to involve local people and promote the development of tourist attractions in connection with cultural historical constructions.

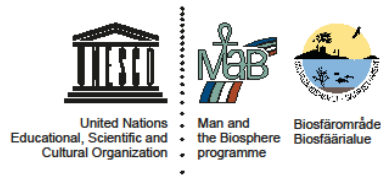
In connection with the year of European Capital of Culture in Turku in 2011, an interesting art project was run in the archipelago. *Contemporary Art Archipelago*, an exhibition across the isles could be encountered from the cruise ships and small boats, along the roads, on a remote islet, in the sea, on the ferries and even in a private home. The theme was the archipelago and its future, as a unique yet changing environment and mode of life. The context of the Baltic Sea was strongly present, yet CAA reflected the unique features of the Archipelago Sea against other similar environments and global changes. The artists examined, among other things, alternative island lifestyles and livelihoods, as well as transformations in ecological and cultural diversity. The art works took the form of e.g. an island's own mobile network, an alternative map on a ferry, personal stories on the changing climate, cinematic sci-fi visions of the archipelago, underwater gardening and a frail meadow of glass.

More than an exhibition, CAA was built on artistic research, collaboration with local inhabitants and institutions, and many public events. The audience could join in on guided tours and talks as well as various local workshops. The symposium *Archipelago Logic: Towards a Sustainable Future* offered a platform for academic interdisciplinary debate at Åbo Akademi University. The audience could take part in all the stages of the exhibition project, while a solid base was built for the continuity of initiated discussions and artistic activities. The BR Office was consulted in many issues concerning the balance between *Man and nature* and all of the artists were working with issues of relevance for the BR. The project demonstrated an interesting approach for cooperation with artists to promote sustainable development and show the natural and cultural values of the region.

### **2.3.8 Specify the number of spoken and written languages (including ethnic, minority and endangered languages) in the biosphere reserve. Has there been a change in the number of spoken and written languages? Has there been a revitalization programme for endangered languages?**

The majority of inhabitants in the Biosphere reserve are Swedish-speaking Finns, speaking Finnish Swedish as their first language. Exact language statistics are not available for the BR as such, except for the two municipalities Pargas and Kimitoön. Pargas is bilingual with a majority (59,9 %) speaking Swedish as their first language, 38,7 % speaking Finnish, and 1,3 % speaks another language (2015). Kimitoön is bilingual with a majority (73 %) speaking Swedish and 27 % speaking Finnish.

An interesting feature of the area is the diversity of Swedish dialects. The permanent settlers of the archipelago traditionally spoke Swedish. Every village had its own dialect that was very different from standard Swedish and constituted their own language systems. In the whole Åboland region, the proportion of Swedish-speakers has declined since the 1950s. Simultaneously, the Swedish dialects have been impoverished. As in many European countries, the dialects have come to resemble the standard language, here Finland Swedish. However, many



language features giving the dialects their unique characteristics, have been preserved. Many people speak a mixture between standard language and dialect, using the dialectal features as markers of local identity. The best preserved dialects in Åboland region are the ones of Iniö and Houtskär villages in the BR. Local people and associations are actively working with preserving the dialects. One example is the book “Läsåbook e hootsjärskå”, written in local dialect by a local cultural association in Houtskär village.

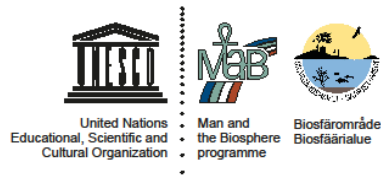
### **2.3.9 Management effectiveness. Obstacles encountered in the management/coordination of the biosphere reserve or challenges to its effective functioning.**

The ASABR has developed its management structure since the nomination. The goal has been to ensure a strong local involvement. From having a top-down management structure, where a regional authority was in charge of the coordination, the role of the municipalities has step by step grown more dominating. The “Office” is administratively placed at the Town of Pargas and the management is based on a contract of cooperative management between the regional authority (today the ELY-Centre) and the municipalities. This successful arrangement has increased the involvement of the local society in the management and activities of the BR. Thanks to the three part contract, the “BR Office” and the coordinator have a plain coordinating function and is only working with issues concerning the BR, which is important for the effectiveness of the management. The management model also includes other partner organisations in the implementation and is strongly supporting new partner organisations to participate and run activities in connection with the BR. The BR office is continuously working to encourage the involvement of new partner organisations and spreading the sense of sharing the responsibility of the BR among all local stakeholders.

The only real obstacle for the management of the BR is the insecure and low financing. It is very good that the state finances the coordination with a fixed yearly payment, but the financial arrangement is reviewed on a yearly basis, which is strongly affecting the continuity. The insecurity makes the planning of activities difficult, not least seeing as the implementation is based on cooperation built on trust between the partners. Luckily, all projects are run by different partner organizations, mostly by the municipalities, and are therefore not totally dependent on the BR Office.

During the last 10 years, many governmental organizations have been re-organized. Now again, we have a forthcoming re-organization of the ELY-Centers, which might affect the management structure of the BR. It is challenging for the small organization of the BR to protect its interests during the process of re-organizing governmental institutions. Nevertheless, every re-organization could bring up a new and interesting solution for the continuation of the BR.

### **2.4 Comment on the following matters of special interest in regard to this biosphere reserve: (Refer to other sections below where appropriate).**



#### 2.4.1 Is the biosphere reserve addressed specifically in any local, regional or/and national development plan? If so, what plan(s)? Briefly describe such plans that have been completed or revised in the past 10 years.

The archipelago and the coastal areas are influenced by many laws, regulations, development plans and management plans. Here, we will list the ones where the BR is mentioned.

In **The Archipelago Programme of the Ministry of the Interior** (*Sisäasianministeriön saaristo-ohjelma, 2007-2010*), it is stated that "The program aims for a better utilisation of the part-time population through systematic development work and to develop island and water tourism into interesting European visiting targets through product development and marketing cooperation. In addition, the program aims at securing island traffic through a well-functioning tendering policy and the developing of national parks and protected areas into features of attraction."

The regional scheme of the Regional Council of Southwest Finland shows the region's desired development in a long-term perspective (20-30 years). The latest version, *Varsinais-Suomen liiton maakuntastrategia - Maakuntaohjelma 2035+/Maakuntaohjelma 2014-2017*, was approved in 2014. The scheme is implemented through the regional programme and the regional land use plan. Every fourth year, a regional strategy is made in Southwest Finland, which consists of the regional scheme and a regional programme: **the Archipelago Programme for Southwest Finland**. The role of the BR Office is recognised under the sections archipelago tourism, archipelago culture and environment.

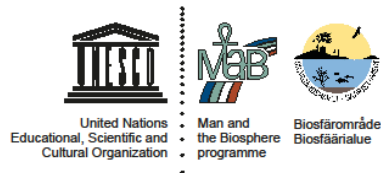
For the archipelago part belonging to the BR, the updated version of the *Southwest Finland Archipelago Programme 2011* supplements and defines the *Southwest Finland regional program 2011-2014* and its implementation plan 2011 - 2012. It is also a compressed and updated continuation of the *Southwest Finland's archipelago program 2006-2008*. The BR Office is mentioned responsible for actions concerning tourism and environment. The Åboland Archipelago Foundation is mentioned as a liable actor in housing.

Concerning tourism and the development of nature tourism, the biosphere reserve is mentioned in the processes of promoting the visibility of local archipelago products. The BR is also mentioned regarding the Pan Parks certifications.

Concerning environmental questions, the vision to preserve vast free beaches for public recreational use through planning is highlighted, which supports an increase in tourism. It is also highlighted that biodiversity and emission free societies is a cause for pride for all islanders and that the condition of the Archipelago Sea has improved, which is an internationally recognized image factor, especially regarding archipelago tourism and high-class accommodations.

Concerning culture, the vision of keeping the bilingual culture - rich in traditions - alive, diverse and international, is highlighted. The vision is a strong identity among the inhabitants and a vital archipelago perceived as a common resource, both nationally and internationally.

In **The Environment Programme of Southwest Finland** (*Lounais-Suomen ympäristöohjelma 2010-2013*), the **Environmental Strategy of Southwest Finland 2020** (*Lounais-Suomen*



*ympäristöstrategia 2020*), and the **Southwest Finland Environmental Strategy 2007-2012**, the Biosphere Reserve Office is mentioned among measures to preserve biodiversity in the Archipelago Sea for future generations. Developing and broadening the biosphere reserve activities, especially with a stronger involvement of the municipalities, will achieve the goals.

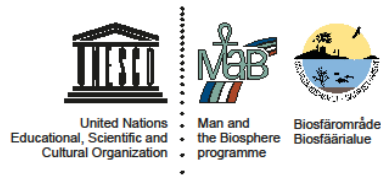
In the **Development strategy of the local LEADER-association 2014-2020** (I samma båt - Samassa veneessa rry, *Utvecklingsstrategi 2014-2020, Skärgården – Aktivt välmående*), the BR is mentioned as an important cooperation partner on the regional level. For the local Leader action group, the BR Office is important for both activating the local society and for spreading information about the rural development programme. In the **Fishing Strategy of the Archipelago Sea 2014-2020** (*Skärgårdshavets fiskeristrategi 2014-2020, Ansvarsfullt producerad fisk från närvattnen*), it is stated, that the BR Office is a key partner of cooperation. BR's operating principles in the archipelago areas follow the same lines as Leader's ways of operating and the strategic objectives of the action group.

According to the **Management Plan of the Archipelago Sea National Park** (*Saaristomeren kansallispuiston Runkosuunnitelma - Stomplan för Skärgårdshavets nationalpark 2000*), the biosphere reserve is of great importance for the Archipelago National Park in many respects. The BR Office promotes the research of the National Park and the transition zone, also benefitting the habitat management and the information activities of the park. Many projects within the biosphere reserve are planned and implemented in consultation with area municipalities, companies, organizations, research institutes, authorities and private individuals. Hereby, the biosphere reserve gives the National Park increased contact with the inhabitants of the respective municipalities.

**Strategy for nature tourism in the Archipelago Sea, Nature Protection Publications of Metsähallitus.** Since the national park is uninhabited, the more expanded Archipelago Sea Biosphere Reserve is also taken into account in this strategy. As stated in the abstract: “A large number of businesses are already registered within the Biosphere Reserve. To ensure the diversity and sustainability of both local businesses and the product offered, planning is needed in addition to monitoring the impacts of tourism. Also, the Archipelago Trail, running through the Biosphere Reserve, has a great significance for regional tourism. A joint quality management is required for allowing visitors to experience sustainable, high-class nature tourism.”

#### **2.4.2 Outcomes of management/cooperation plans of government agencies and other organizations in the biosphere reserve.**

As an outcome of the Strategy for Nature Tourism in the Archipelago Sea, the BR Office has in collaboration with Metsähallitus and the municipalities developed a program for certification of sustainable tourism entrepreneurs in connection with the PanParks Local Business Partner Program. Since the Panpark network is not active anymore, no new certification has been done since 2013. All in all 11 companies in the Archipelago Sea area were certified. All the LBPs are still important business partners for the national park.



In the Environmental Program of Southwest Finland 2007-2012, a proposal was made as an act for improving the preservation of biodiversity in the Archipelago Sea, that the BR should be liaising much more with the municipalities. In 2009, when the municipalities were reorganized and merged into two larger municipalities in Åboland, the management structure of the BR was reviewed and by a new three-part contract the cooperation between all parties was enhanced.

### **2.4.3 Continued involvement of local people in the work of the biosphere reserve. Which communities, groups, etc. How are they involved?**

Since the start of the biosphere reserve, all activities have involved different groups of local actors. The activities have been presented and planned in open forums. Expert groups have been formed, associated with the planning and implementation of projects. The organized seminars and events have engaged the local population, as well as various local associations.

The participation of the local population in biosphere reserve activities has constantly been expanded. Through the seminars and projects of the BR, new and old target audiences are regularly offered the opportunities to meet and influence. Concerning the protection of natural and cultural assets, locals have always been involved in the management of the cultural habitats. The natural commitment decreased with the decline of the traditional livestock business. However, through projects, camps and events, this trend is being counteracted. Nowadays, most of the livestock farmers are, in one way or another, involved in the management of the cultural landscape. Many private landowners are also interested in preserving the cultural landscape with its variety of habitats and species. Moreover, Metsähallitus and WWF go in for voluntary work for the clearing of meadows.

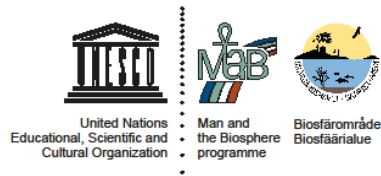


© Archipelago Sea Biosphere Reserve

The awareness of the condition of the sea and the interest for what one can do to reduce the pollution of the sea is constantly growing. Both residents and visitors have an important role in the management of the sea through their actions. The BR Office calls for the protection of the sea in different ways and volunteers have participated in cleaning up beaches and investing in improved wastewater treatments at their properties. For some years, the association Keep the Archipelago Tidy has organized national campaigns to clean the beaches.

Local inhabitants are also reached through cooperation with the third sector. Seminars, other events and projects have been carried out with for example the Arkipelagia Society, the Association of Finnish Islands, the Village Association of Southwest Finland, the local Nature Protection Associations, Keep the Archipelago Tidy and The Åboland Archipelago Foundation.

During the anniversary year, the focus was specifically laid on creating new networks, reaching out and engaging more people in the BR business and strengthening local residents' ties to their local environment. The BR reached out to new groups, such as the annual Archipelago Women seminar involved in cleaning pastures and beaches. By organizing a new event, BioBlitz, the public was engaged in discovering the species of their local environment. Some local residents were also appointed as ambassadors for the biosphere reserve.



Special groups in focus during the past years are:

- Local producers and entrepreneurs (e.g. the projects *Mathantverk* and *Knowsheep*)
- Schools and day care centers, staff, students, children through repeated activities

Summer visitors and part time residents could be reached to a higher degree. Especially retirees could be more involved in the activities of the BR.

**2.4.4 Women's roles. Do women participate in community organizations and decision-making processes? Are their interests and needs given equal consideration within the biosphere reserve? What incentives or programmes are in place to encourage their representation and participation? (e.g. was a "gender impact assessment" carried out?) Are there any studies that examine a) whether men and women have different access to and control over sources of income and b) which sources of income do women control? If so, provide reference of these studies and/or a paper copy in an annex.**

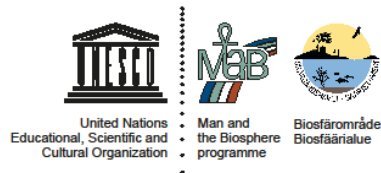
In Finland, the norm is to give equal consideration of interest to women and men on all occasions. According to the law, both genders should be treated equally. Women are well represented in the community organization and in the local governmental councils. In the archipelago, many of the traditional livelihoods have been and are still dominated by men, like agriculture, fishing, maritime service and hunting. Women have traditionally been taking care of the house and family and were often in charge of the finances when their men were out on the sea. When the tourism sector started to grow, women found a good way of earning an income in connection to the family properties by providing accommodation services. Unfortunately, many women also decided to leave the archipelago to study and work elsewhere.

Concerning income and the difference between men and women, there are unfortunately no studies being made on an archipelago level. Generally, women earn less than men, but the conditions in the archipelago are so different that it is hardly possible to compare them to the general public. It could be of greater interest to look at the ownership structure in the archipelago. But unfortunately, no such research has so far been conducted.

Today it seems that the number of women entrepreneurs is growing. Lately, the BR has focused on a new income possibility particularly suitable for women farmers, *Mathantverk*, the concept of artisan food (see 5.10).

**2.4.5 Are there any changes in the main protection regime of the core area(s) and of the buffer zone(s)?**

No larger changes.



#### **2.4.6 What research and monitoring activities have been undertaken in the biosphere reserve by local universities, government agencies, stakeholders and/or linked with national and international programs?**

University of Turku (UTU), with its Archipelago Research Institute, Åbo Akademi University (ÅAU), with its field base Korpoström, Metsähallitus Parks and Wildlife Finland, the ELY-Centre and Natural Resources Institute (LUKE), amongst others (see full list in 6.1) have very important roles in producing biological information about the BR. Extensive nature inventories and monitoring programmes cover water quality, sediment quality, marine biodiversity, archipelago birds, fish and plants.

Metsähallitus Parks and Wildlife Finland carry out monitoring of protected marine and land areas in the BR. Protected species, species which are rare outside nature reserves and species which are easily disturbed or in danger from collectors get special attention. The focus in the BR lies on archipelago bird populations, invasive species, species in traditional landscapes and top predators in the archipelago (sea eagle, grey seal and ringed seal).

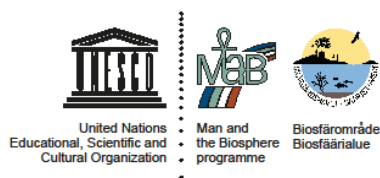
At the universities and research institutes, the focus lies on marine biogeochemistry, biology and ecology, e.g. water quality (eutrophication issues), population biology, effects of introduced species on native fauna, effects of climate change, biodiversity effects on ecosystem functioning, and food web ecology. Modelling studies and studies on management issues have been getting more common. (See more info in 6.2)

The Biosphere Office have important tasks in this context, to popularise and communicate this information to the public.

#### **2.4.7 How have collective capacities for the overall governance of the biosphere reserve (e.g. organization of new networks of cooperation, partnerships) been strengthened?**

The collective capacities have been taken into account in the management structure of the BR and composition of the Steering Group. The goal is to continuously strengthen the use of the collective capacities by developing the management structure of the BR and the management structures of separate activities, such as projects or seminars that are arranged together with partner organisations and by fostering reference groups and networks. Since the 20<sup>th</sup> anniversary, the BR Office has put special focus on developing new forms of partnership.

The establishment of the cooperation group for Archipelago Sea (see 2.3.4, 2.4.2.) strengthen the local cooperation for promoting sustainable tourism. The group handled issues like Local Business Partner program for sustainable tourism/PanParks, the Strategy for Nature Tourism in Archipelago Sea and sharing of information between the national park, the biosphere reserve and the other partner organizations. Both the Local Business Partners of Panparks and the other business partners of the national park are all highly important for the sustainable development of the region.



The cooperation programme *Pro-Archipelago Sea* (In Finnish: Pro Saaristomeri –ohjelma) is a co-operative environmental research and protection programme. It was founded in 1999 by different parties concerned about the weak state of the Archipelago Sea, and now has about 70 member groups. The objective of the programme is to improve the state of the water and the coastal area of the Archipelago Sea and to reduce conflicting land use in the area. Another objective of the co-operation is to activate the ICZM actors who have the possibility to improve water quality in the Archipelago Sea and its catchment area. The BR coordinator has over several years been holding a coordinating or secretarial role in the sub-network of particularly the Archipelago Sea Area. Other sub-networks concern the catchment areas.

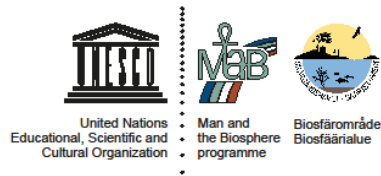
In 2006 and 2007, the BR Office and WWF arranged an education programme for volunteers in cleaning up after oil accidents. Since the cargo shipping traffic is increasing and the probability of accidents is growing, the need of well-prepared volunteers is of high importance for the Archipelago Sea Area.

New models for BR partnership programs were discussed during the anniversary year. The implementation of the BR clearly benefits from partnership with local entrepreneurs and inhabitants. In 2014, the first two ambassadors were nominated to celebrate the anniversary. All stakeholders were challenged to participate in the celebration with an act for the biosphere. The acts were varied from cleaning beaches to donating artisan bread to senior houses in Nagu, and even the local jazz festival, Korpo Jazz, offered two pages on how to take ecological and social sustainability into account during the festival. The BR Office is continuously trying to find easily coordinated models for a partnership with the BR.

#### **2.4.8. Please provide some additional information about the interaction between the three zones.**

In many respects, the BR is important for the Archipelago National Park, which is situated in the core area of the BR. The BR supports scientific research in the national park and in its cooperation area. The BR Office organizes cooperation and financing for development projects, indirectly supporting the NP. Within the BR, many projects are planned and realised together with municipalities, entrepreneurs, organisations, research institutes, governments and individuals, providing the NP with broader communication. Environmental education is carried out both in the BR and in the NP.

International cooperation concerning the interactions between the zones has been planned throughout the project "Coastal Sustainability as a Challenge" (2005 – 2007). The main goal of the project was to strengthen cooperation between the coastal protected areas in the Baltic Sea Region. Many project activities took place at a local level. With the help of these pilot activities, new standards were found for sustainable use of coastal protected areas and for improving communication between protected areas and surrounding societies. As most of the coastal areas have similar problems regarding environmental issues and maintaining sustainable livelihoods, many useful experiences could be shared during the project. In total there were 18 partners involved in this project and these were from five different countries in the Baltic Sea Region,



most of which were BR:s in the NordMAB-network. Among stakeholders, the tourism entrepreneurs and organizations were in a central role. Tourism is connecting the zones to each other on many levels.

The management of the ecologically valuable cultural landscapes in the core zone has a strong connection to the agriculture in the transition zone. The animal farmers provide the nature management of semi-natural meadows with important grazers. The depopulation, especially in the buffer zone, has already had a strong effect with this important connection.

**2.4.9 Participation of young people. How were young people involved in the organizations and community decision-making processes? How were their interests and needs considered within the biosphere reserve? What are the incentives or programs in place to encourage their participation?**

**Cooperation with local schools**

*Biosphere goes to school.* Since 2009, the cooperation between the schools in the BR has been developed. The initiative came from local islanders. The cooperation project aims to find a way of integrating the concept of biosphere reserves in the school program, so that it would be maintained as a continuous part of the education for pupils in the biosphere reserve. The methods used are continuously being developed by the Biosphere Reserve Office, the National Park and Forest Services (Metsähallitus) and by teachers from the schools in the biosphere reserve. The main idea is to include the biosphere reserve and National Park as a part of the school education, by discussing and allowing the pupils to work with multi-disciplinary related subjects that are important for the Archipelago Sea area. A yearly field trip to the National Park is also organized, where pupils from different parts of the archipelago can get together.



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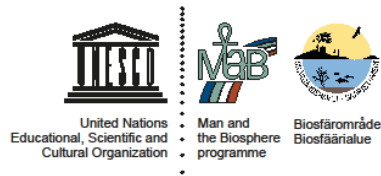
The main goals for the activities are to:

- Increase knowledge about sustainable solutions for Man and Nature in the home region
- Strengthen the local identity and, at the same time, give a more global perspective on the local environment for the children
- Develop multi-disciplinary education for broader perspectives for the children
- Create regional/national/international cooperation
- Increase visibility and knowledge about the biosphere reserve
- Support the use of digital communication tools on internet for the possible cooperation with schools located on other islands

***The pike and his friends:*** An educational program for nurseries that introduces the children to varying environmental and ecological issues of their home-region and the BR. (see 5.10 and 6.4)

***Youth parliament:*** On Kimitoön, a youth parliament consisting of local youth from high schools and college has been introduced. The aim is to encourage the young to participate in decision-making and encourage proposals of new ideas from them within the community.

***Projects:*** A challenge in the region, like in other rural societies, is that young people move away from their local communities in order to find work and education. As a way to combat this problem, Pargas is now the lead partner of the EU Interreg project *RIBS (Rolling Images in Business Startups, 2015-2018)*. The vision of the project is to make entrepreneurship more



attractive for the youth and to give them tools to start their own businesses, so that they can hopefully make their living in the local communities when they grow up. Within the framework of the project, entrepreneurship and media literacy courses are arranged as well as local workshops. Through the project *Egna pengar* (Own Money), Nordiska Skärgårdssamarbetet (The Nordic Archipelago Cooperation) has collected examples of good practices and sought good role models among young adults that have realized their ideas and found ways to make a living in the archipelago/rural areas. Through a Nordic exchange, The Nordic Archipelago Cooperation has passed on useful tools for municipalities and officials to support and facilitate young peoples' livelihoods.

### 3. ECOSYSTEM SERVICES:

#### 3.1 If possible, provide an update in the ecosystem services provided by each ecosystem of the biosphere reserve and the beneficiaries of these services.

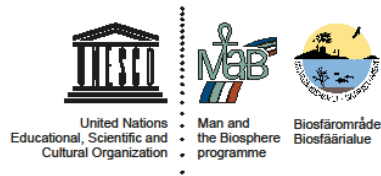
(As per previous report and with reference to the Millennium Ecosystem Assessment Framework and The Economics of Ecosystems and Biodiversity (TEEB) Framework (<http://millenniumassessment.org/en/Framework.html> and <http://www.teebweb.org/publications/teeb-study-reports/foundations/>)).

From the point of ecosystem services, the most important aspect of the Baltic Sea environment, where the BR is situated, is water quality. As a relatively small, shallow and isolated sea, the Baltic Sea is especially vulnerable to eutrophication and other forms of pollution. Clean sea water benefits several other ecosystem services, ranging from fish populations to cultural services such as recreation and landscape.

#### Case study of the ES-Luppi project (2013-2015)

There is an ongoing research of ecosystem service profiles of different habitat types within the Archipelago Sea Area BR. The assessment has been done for nine distinctive, characteristic and culturally impacted habitat types and eight shortlisted ecosystem services that are relevant for recreational use. Ecosystem service profiles are built on stakeholder perceptions, collected from participatory interview surveys conducted in the area during 2013. Interview data includes 78 responses from visitors and residents of the area. Respondents were asked to evaluate the ability of habitat types to produce shortlisted ecosystem services. The aim of this study was to build service profiles on the studied habitat types, based on the knowledge of the actual users of the area. These profiles can further be used to evaluate how well different habitat types can indicate ecosystem services in this area. Data has been analysed and a research article is ready to be published soon (manuscript Viirret et al.).

**Habitat types included in the study:** bladder wrack, bird islet, sand beach, reed bed, seaside meadow, dry meadow, pasture meadow, herb-rich forest and juniper thicket.



**Shortlisted services included in the study (according to the CICES-classification):**  
 Provisional services: Hunting and fishing, Berry, Mushroom and vegetation harvesting, Energy production. Regulation and maintenance services: Quality of water and/or soil. Cultural services: Scenery, Cultural value, Recreational value. All service classes: Biodiversity.

### **A TEEB report for Finland**

In this recently published national TEEB report, the status and trends of the ecosystem services in Finland were demonstrated. It includes several examples that could be applied in the ABR. However, the biosphere reserve was not especially targeted as a case study area in this report. Jäppinen & Heliölä (eds.) 2015: Towards a Sustainable and Genuinely Green Economy. The value and social significance of ecosystem services in Finland (TEEB for Finland). Synthesis and roadmap can be downloaded at: <https://helda.helsinki.fi/handle/10138/152815>

**3.2 Specify if there are any changes regarding the indicators of ecosystem services that are being used to evaluate the three functions (conservation, development and logistic) of the biosphere reserve. If yes, which ones and give details and update.**

#### **FESSI Finnish Ecosystem Service Indicators (2012-2014)**

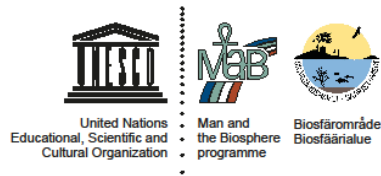
We have not specified any ES indicators for the ASABR. However, a general framework for national ecosystem service indicators has been recently launched, which could be applied also in the biosphere area. The indicators are available online at [www.biodiversity.fi/ecosystemservices](http://www.biodiversity.fi/ecosystemservices) and the results were published in the research article: Mononen et al. 2015.

**3.3 Update description on biodiversity involved in the provision of ecosystems services in the biosphere reserve (e.g. species or groups of species involved).**

See 3.1 description of the ES-Luppi project.

**3.4 Specify whether any recent/updated ecosystem services assessment has been done for the biosphere reserve since its nomination/last report. If yes, please specify and indicate if and how this is being used in the management plan.**

A landscape categorization of the Archipelago Sea was done based on habitat and land cover data and GIS analysis. The results were published in 2015 in a Master's thesis by Ulpu Mankinen from the University of Turku. The Archipelago Sea was divided into different landscape areas and their potential to deliver ecosystem services was discussed. The study generated a landscape classification that can be used to study the total character of the region and its landscape structure. It also serves as an important point of reference for detecting change. It can be used for information about the protection, management and planning of landscapes.



Both the results of the above-mentioned thesis and the ES-Luppi project could help to take ecosystem services and biodiversity into consideration for the management of the area. However, this was not done, neither was it tested during these projects.

Another regional study using the ecosystem services framework was published by Kosenius and Ollikainen in 2012, as part of the PREHAB project - "Spatial Prediction of Benthic Habitats in the Baltic Sea". They analyzed the economic value of changes in coastal habitats in the context of the implementation of the Baltic Sea Action Plan, from habitats in two geographical areas: the Finnish-Swedish archipelago - including the Archipelago Sea Area BR - and the Lithuanian coast. They used the choice experiment method and the willingness to pay for healthy coastal habitats was estimated.

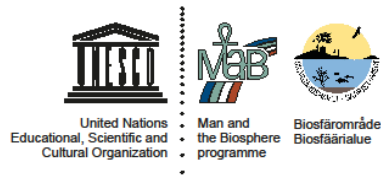
As a part of the Green Islands project (2010-2013), a small-scale interview study of land-owners, entrepreneurs and boat tourists was done at certain islands within the BR. Use, intentional care of ecosystem services, and general attitudes towards nature and environmental issues were mapped.

#### **4. THE CONSERVATION FUNCTION:**

[This refers to programmes that seek to protect biodiversity at landscape and site levels and/or ecological functions that provide ecosystem goods and services in the biosphere reserve. While actions to address this function might be focused on core area(s) and buffer zone(s), ecosystem dynamics occur across a range of spatial and temporal scales throughout the biosphere reserve and beyond.]

##### **4.1 Significant changes (if any) in the main habitat types, ecosystems, species or varieties of traditional or economic importance identified for the biosphere reserve, including natural processes or events, main human impacts, and/or relevant management practices (since the last report).**

The continuous changes in the cultural landscapes, due to the depopulation and changes in agriculture, are important issues for the BR. Since the old cultural landscapes are no longer used by humans as pastures or hay meadows, the open landscapes are growing denser vegetation and losing biodiversity. Nature types such as heaths, coastal meadows, and dry meadows are still quite rare in Finland. In the national park, the management of cultural biotopes, i.e. cutting back vegetation and animal grazing, have preserved valuable habitat types and species. Species that favor high vegetation, e.g. the Greater Butterfly Orchid, *Platanthera chlorantha*, and Three-nerved Sandwort, *Moehringia trinervia*, are increasing, while species common on heaths, e.g. Catsfoot, *Antennaria dioica*, and Alpine Cinquefoil, *Potentilla cranzii*, have almost disappeared. Generally, the lack of human intervention within cultural landscapes results in a decreasing biodiversity. The national park has a lack of resources for the management of all the overgrown cultural biotopes. Ten years ago, there was also a lack of available animals for grazing. The BR Office has had a central role in promoting cooperation in the management of cultural landscapes, in engaging both new and existing animal farmers. The BR Office has also raised awareness about the values linked to the cultural landscapes and has given practical management advice to

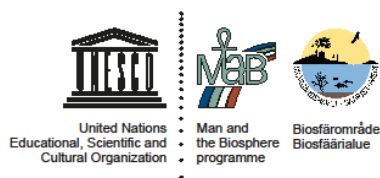


private landowners. The number of managed cultural biotopes is slowly increasing and recently, there have been enough animals available for grazing. The changes in the marine environment however, are probably the greatest. Especially habitats like bladder wrack belts, *Fucus vesiculosus*, Sea Grass meadows of *Zostera marina* and blue mussel beds, *Mytilus edulis*, are threatened due to eutrophication and overgrowth of filamentous algae. Also due to eutrophication, the hypoxic areas at the deep sea bottom are increasing.

The eutrophication has also affected the vegetation of the coastal zone. Species that favor a nutrient-rich environment, e.g. Common Reed, *Phragmites australis*, and the sea aster, *Tripolium vulgare*, are increasing.

Along with the eutrophication of the Archipelago Sea, cyprinid fish populations, such as bream, roach and silver bream, have increased. Large cyprinid fish populations hamper the net and the trap net fishing of more valuable species. Their large numbers can also have a detrimental impact on other fish populations and the delicate balance of the coastal ecosystem. It would be possible to increase the utilization of cyprinid fishes significantly if we could find a viable use for the catch. In practice, fishing is also the only active way of removing nutrients that are already in the sea. Professional fisheries in Finland remove some 500 tons of phosphorous annually from the Baltic Sea. Most of this consists of nutrients that have accumulated in herring and sprat in open sea areas. The fisheries of cyprinids and other under-utilized coastal species are nowadays primarily restricted by the fact that there is insufficient demand for the catch, therefore not commercially viable. Additionally, existing estimates of the numbers and production potential of coastal cyprinid populations are approximate at best.

The species composition in the sea is affected by many factors like the eutrophication, salinity and the introduction of new species that arrive with the marine cargo traffic from other regions. Amongst the new arrivals is the American mud crab *Rhithropanopeus harrisi*, which has rapidly invaded new habitats and is already quite common. The rapid changes in the marine environment, due to human induced eutrophication, are probably also reasons affecting the decrease of the both ecologically and culturally important eider populations of the Archipelago Sea. In the past, the important eider duck hunting always took place in the spring. Nowadays it is forbidden. The male eider ducks arrive in the spring to the Archipelago Sea to mate and later continue north where they spend the rest of the summer. After some decades of successful protection work, the white-tailed eagle population has recovered and increases steadily. The increasing numbers of eagles are putting additional pressure on the eider duck population. Other bird species that have increased are Caspian Tern, *Hydroprogne caspia*, Razorbill, *Alca torda* and Common Tern, *Sterna hirundo*. Two relatively new species for the Archipelago Sea that have increased rapidly are the European cormorant, *Phalacrocorax carbo*, and the Barnacle goose, *Branta leucopsis*. The cormorant has increased radically due to the nutrient-rich marine environment and is locally a plague to the coastal fishery (see 5.3). Another species that has recovered from a strong population decline is the grey seal, *Halichoerus grypus*. The seal is, however, also a plague for the coastal fishery mainly because of the damage caused to the fishing equipment.



**4.2 Describe the main conservation programmes that have been conducted in the biosphere reserve over the past ten years as well as current on-going ones. Note their main goals and the scope of activities, e.g. biotic inventories, species-at-risk, landscape analyses, conservation stewardship actions. Cross reference to other sections below where appropriate.**

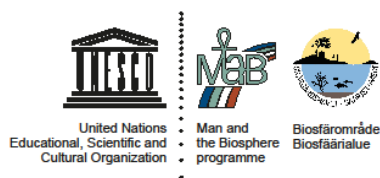
There are several conservation programmes that are conducted in the BR for the protection of species and habitats in need of special attention. The Nature Conservation Act protects all species of birds and mammals not specifically listed as game species or unprotected species. Species other than mammals or birds can be protected by a separate decree. Plants are always protected by a decree. In the Nature Conservation Decree, some of the threatened species are defined as being in need of special protection. In the IUCN Red List classification, these species belong to categories: Critically endangered (CR), Endangered (EN) and Vulnerable (VU). It is forbidden to destroy or weaken habitats which are important to the survival of the species in need of special protection. Metsähallitus conducts or commissions inventories of species on its own or together with the ELY-center. Metsähallitus is responsible for monitoring species on the areas which it manages. In addition, Metsähallitus is also nationally responsible for monitoring a number of threatened species or species which are protected under the EU Habitats Directive or the Birds Directive.

Natural habitats are protected under legislation and international agreements. The Finnish Nature Conservation Act places nine habitats under protection, including broad-leaved deciduous forests and sandy beaches. Broader sets of natural habitats are placed under protection in, for example, national parks. In addition to setting up nature conservation areas, natural habitats can be preserved through sustainable use of natural resources and by taking such habitats into account in land use planning. If natural habitats have been altered, their condition may be improved by means of nature management and restoration.

The aim of the protected areas is to secure the natural features, conserve natural diversity and protect national landscapes, as well as cultural heritage, recreational and hiking areas in the area. Most of the protected areas are included in the Natura 2000 ecological network.

**NATURA 2000 network**

The Natura 2000 network is designed to protect important declining habitat types and endangered species within the European Union, as well as habitats important for wild birds. The habitat types and species of community importance are listed in the annexes of the Habitats and Birds Directives. The Natura 2000 network is to include areas designated by Finland for the conservation of wild birds as special protection areas (SPAs) under the Birds Directive and also areas approved by the EU Commission under the Habitats Directive as sites of community importance (SCIs). The Archipelago Sea is included in the NATURA 2000-network as SCI and SPA. In addition, there are 21 other areas in the BR included in the network.

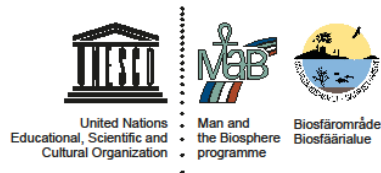


## National Park

A national park is a large, state-owned nature reserve characterized by its diverse or otherwise significant natural features and considered valuable at least on a national level. Such an area must also constitute a significant natural attraction or be important in terms of increasing public awareness and interest in nature. National parks should be permanently preserved by excluding economic activities that would disturb their nature and should be maintained in, or restored to, their natural state. The most important function of national parks is nature conservation, but they may also aim to preserve traditional landscapes shaped by human activity, as well as preserve ecosystems and the constructions associated with them, which is the case in the Archipelago National Park. National parks may stray from the generally accepted principles of protection where the maintenance of a traditional way of livelihood, e.g. coastal fishery or hunting is concerned, as long as these activities do not result in significant or lasting damage regarding the wider conservation aims. In the Archipelago National Park there are certain areas with a temporary strict protection during the bird nesting time.

Within the limitations imposed by the conservation aims, national parks must also be able to contribute to environmental education, instruction and activating environmental awareness by providing the opportunity for independent and guided nature observation. National parks should also facilitate scientific research and monitoring of the state of the environment. In addition, they should offer opportunities for outdoor recreation by providing a public open space and opportunities for hiking and experiencing natural surroundings. All the present national parks are state owned and governed by Metsähallitus. The new Nature Conservation Act allows for parcels owned by other public bodies (such as municipalities) to be annexed to national parks.

The Archipelago Sea NP was established to protect both nature and culture, to secure the utilization of nature, to preserve a vital archipelago, as well as to promote environmental research and general interest of the archipelago. A statutory management plan and site regulation orders are drafted for the national park (Annex III.I). The vitality of the archipelago culture is supported in a variety of ways. For example, the traditional landscapes of the Archipelago National Park are managed actively. Old fisherman's cottages, as well as former properties used by maritime pilots, the Coast Guard and the Defence Forces, have been renovated for interpretational use. Several nature huts have exhibitions of the nature and life on the islands. On many of the islands, there are nature trails that take visitors to explore the most interesting natural and cultural sites, including underwater. Plenty of facilities have been built for boaters and hikers. Tourism-related services are developed and maintained in cooperation with local entrepreneurs. Services offer a livelihood for locals and nature tourism has a significant impact on the economy of the archipelago municipalities. Sufficient information about the cultural heritage should also be available when management and operational plans are drawn up for protected areas. An inventory of the cultural heritage in the area has been undertaken, compiling basic information on landscape, ancient relics, old buildings and structures. Some surveys have been carried out for management planning, especially in nature tourism priority areas and areas that are important for the protection of cultural heritage.



Details on the quantity and quality of environmental education, of recreation and nature tourism are also important basic information necessary for management planning in protected areas. In national parks and other areas where nature tourism and recreational use are significant, the number of annual visits is monitored. In addition, visitor surveys on recreational activities and entrepreneur surveys on business use are carried out in these areas when management plans are drafted. In nature centers, feedback data is collected annually in a specified format, as well as data on the number of guided customers. A customer survey is undertaken every five years. The visitor data and surveys also produce the necessary information for assessment of the sustainability of the recreational use and for calculation of its economic impact on the local communities. In the context of protected area management planning, data is compiled comprehensively on the use of natural resources (reindeer husbandry, hunting, fishing, mineral claims, etc.), as well as on land use rights (rental contracts, etc.) and the permit situation, to serve as a basis for the definition of relevant objectives and measures in the area. In addition, the sustainability of recreational use is assessed by studies of trail erosion and littering levels. Habitat restoration and management have expanded strongly in the last decade. This has increased the need for related monitoring. The basic information on protected areas is gathered using repeatable methods so that it can be used to monitor the long-term effects of active management (Annex III.I)

### **Seal reserves**

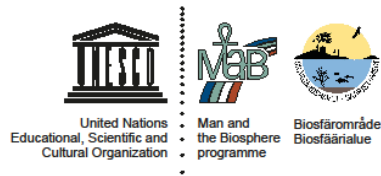
In 2001, seven seal reserves were established by statute in state-owned sea waters and two of them in the Archipelago Sea Area BR. The main purpose of the reserves is to protect Grey Seals (*Halichoerus grypus*) and their habitats. These areas are managed by Metsähallitus. Established seal reserves not only protect but also further the research of seals and the tracking of seal populations. Rocky islets which are the seal's habitat are also valuable marine biotopes. The outer boundary of each reserve is at least one nautical mile (1,852 m) from an islet or a group of islets inhabited by seals.

### **Old-Growth Forest Protection Programme**

Because there is a large number of forest species on the threatened list, it is imperative to protect the remaining old-growth forests in order to preserve working ecosystems and nature's diversity. Old-growth forests are coniferous forests that have remained in their natural state. Typical features of these forests are trees of different ages, an abundance of decaying trees and a continual chain of small changes. There are often old deciduous trees in these forests as well. Areas included in the old-growth forest conservation programme are to be named nature reserves in accordance to the Nature Conservation Act. Entering and walking in old-growth forest reserves are permitted as Everyman's Rights but camping and lighting campfires are forbidden in the conservation regulations for these reserves.

### **Nationally valuable landscapes**

There are 156 areas in Finland that have been classified as nationally valuable landscapes. They represent the cultural landscapes of our country, their value based on culturally significant natural diversity, cultivated agricultural landscape and traditional architecture. According to the national land use objectives set in the Land Use and Building Act, valuable



landscapes must be taken into account in land use planning. For example, they must be marked in the Regional Land Use Plans. However, rural landscapes are threatened by the impoverishment of nature, decay of buildings and unsuitable new construction projects. The changes in agriculture are also causing landscapes to change. The aim of designating landscape areas as valuable is to secure prominent and viable rural landscapes and to arouse public interest in landscape management. The current landscapes were selected in 1995 by a decision-in-principle by the Government. Evaluation of the areas is based not only on the particular features and specialties of the areas, but also on the regional landscape division.

### **Protection areas on private land**

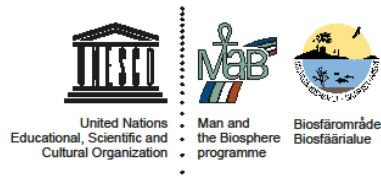
Private nature reserves are established on privately owned land based on the Nature Conservation Act. The landowner can be a private citizen, estate, enterprise, association, foundation, congregation, or municipality, for example. Private nature reserves have already been established since the 1920s and 1930s. Some of these sites have since been acquired for the state, but retain their original designation status. The ELY Centers (earlier the Regional Environment Centers) are responsible for establishing private nature reserves. ELY Centers also coordinate management of private nature reserves, but the role of Metsähallitus as an active participant in management measures, working together with landowners, has increased in recent years. In addition to permanent private nature reserves, temporary reserves may be established, normally for 20 years, by contract between an ELY Centre and a private landowner.

The **Forest Biodiversity Programme METSO (2008–2025)** aims to halt the ongoing decline in the biodiversity of forest habitats and species and to establish stable favorable trends in Southern Finland's forest ecosystems. The objective of the programme is to ensure that Finnish forests will continue to provide suitable habitats for threatened and declining species. The preliminary phase began in 2003, the first phase being in 2008. The METSO programme was extended in 2014 by Government resolution, to continue until 2025.

The METSO programme covers both private and state-owned lands. The programme involves measures to enhance the protected area network and to develop sustainable management of commercial forests. Conservation is based on the landowners' voluntary motivation to safeguard the biodiversity in their forests. It is a collaborative effort between the Ministry of the Environment, the Ministry of Agriculture and Forestry, the Finnish Environment Institute and the Finnish Forest Centre and NGOs.

### **4.3 In what ways are conservation activities linked to, or integrated with, sustainable development issues (e.g. stewardship for conservation on private lands used for other purposes)?**

Within the biosphere reserve, sustainable development has been integrated into several conservation programs, such as the National Park. Apart from nature protection, the task of the National Park is also to promote the development of a vital society, to support environmental



education and to promote recreation in the area. Several areas are also protected by private conservation areas through e.g. the programme Metso (see 4.2).

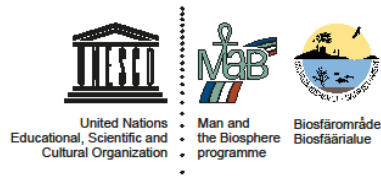
One of the most central themes of the BR is the care of cultural habitats, linking conservation and sustainable development in a natural way. There are several purposes for managing the cultural landscape, but they all serve one another. To protect the ecological values of the cultural biotopes, landscape management such as clearing and grazing is needed. Landscape management also promotes the preservation of the cultural values of the traditional landscape, and has a high value for local residents. Concerning tourism, preserved cultural landscapes are found to be more appealing, and hence having an economic touristic value. In addition, the management of the cultural landscape benefits value for the local economy. This value is based on the EU support one can receive for landscape management, as well as meat from grazing animals, products that are profiled as high quality products.

The Finnish Inventory Programme for the Underwater Marine Environment, VELMU, collects data on the occurrence of underwater marine biotopes, species and communities in Finland's marine waters. The programme contributes to the Baltic marine protection and to the sustainable use of the sea and its natural resources. The marine environment is threatened by various human-induced pressures and activities. While the uses of the sea areas are increasing constantly, the lack of knowledge of the underwater marine environment makes it difficult to allocate various uses in an environmentally sustainable manner. Maritime spatial planning is therefore needed. Such planning is, however, impossible without reliable spatial information about marine species, communities and habitats.

The aim of the inventories is to identify hot-spots of functional and species diversity and sites where species requiring particular protection occur. It will then be possible to safeguard and preserve the underwater biodiversity by protecting the most valuable sites by sustainable allocation of various uses (see also 6.2).

The cooperation programme *Pro-Archipelago Sea* (In Finnish: Pro Saaristomeri-ohjelma) has adopted the concept ICZM (Integrated Coastal Zone Management). Pro-Archipelago Sea Programme is a co-operative environmental research and protection programme. Different parties concerned about the weak state of the Archipelago Sea founded it in 1999. Now it has about 70 member groups. The objective of the programme is to improve the state of the water and the coastal area of the Archipelago Sea and to reduce land use conflicts in the area. Another objective of co-operation is to activate the ICZM actors that have the possibility to improve water quality in the Archipelago Sea and its catchment area. During several years, the BR coordinator has been holding a secretary role in the sub-network of particularly the Archipelago Sea Area. Other sub-networks concern the catchment areas.

In 2014, as a part of the anniversary program of the BR, a Bioblitz-event was arranged for the first time in the ASABR. The Bioblitz took place on the island of Holma in the national park. The Bioblitz gave tools for integrating environmental education in conservation activities and



gave rise to a new model for cooperation between the national park, voluntaries and local stakeholders. The BR Office was coordinating the event.

Large-scale removal of alien American mink has been conducted in the southern parts of the BR since 1992. Actions have been coordinated by Metsähallitus and practical work conducted by local hunters.

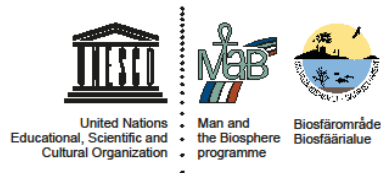
#### **4.4 How do you assess the effectiveness of actions or strategies applied? (Describe the methods, indicators used).**

The effectiveness of the national conservation programmes is followed up by the authorities. Metsähallitus monitors the management plan for the Archipelago National Park, as well as for the other protected areas under the management of Metsähallitus.

Protected area management planning is supported by the monitoring of the state of the protected areas. The monitoring of protected areas managed by Metsähallitus also includes the evaluation of the effectiveness of management procedures and the need for new or corrective measures. The tools of the evaluation comprise:

1. The continuous monitoring of the protected areas and the PA (Protected area) network by means of indicators and parameters
2. The Natura 2000 Site Condition Assessment (NATA) and the updating of Natura 2000 standard data forms
3. The management effectiveness evaluation of national parks
4. The monitoring of the implementation and impacts of the PA management plans as well as proposed measures in the operational plans
5. The monitoring of the sustainability of nature tourism: the setting of the goals for indicators and the limits of acceptable change is carried out in nature tourism plans and the PA management plan
6. The assessment of the state of and the changes in the Natura 2000 and protected area networks in connection to regional master planning
7. The State of the Parks reporting: a report on the state of the PA network produced on a regular basis; can also include an external evaluation of the effectiveness of protected area management
8. Reporting on the Natura 2000 areas required by the EU Habitat Directive: the area of a habitat types or the population of a species and the trends thereof as well as the measures carried out in Natura 2000 areas and outside them and the impacts of the measures on the state of the habitats and species (the next report on the period 2013–2018 will be carried out in 2019)
9. The reporting on the realization of the CBD Programme of Work on Protected Areas (PoWPA): reporting every 3 to 4 years

At the request of Metsähallitus, an extensive international evaluation on the effectiveness of



protected area management in Finland was carried out in 2004. (MEE: Management Effectiveness Evaluation of Finland's Protected Areas)

Finland was the first industrialized country to have the management effectiveness of the protected area network carried out this extensively. The evaluation made in Finland has served as model for other countries when implementing the Programme of Work on Protected Areas of the Convention on Biological Diversity. See more at:

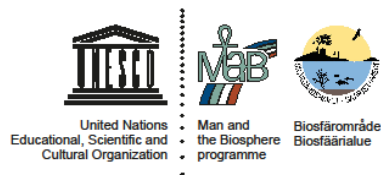
<http://www.metsa.fi/web/en/managementofprotectedareas#sthash.AfMCD8Op.dpuf>

The effectiveness of the activities aimed at promoting the management of cultural habitats, also outside the protected areas, can be measured in the amount of cultural habitats that are managed and in the number of grazing animals in the archipelago. The involvement of local people and volunteers in the conservation activities are measured by the amount of people participating in the events and meetings.

#### **4.5 What are the main factors that influenced (positively or negatively) the successes of conservation efforts in the entire biosphere reserve? Given the experiences and lessons learned in the past ten years, what new strategies or approaches will be most effective for conservation for sustainable development?**

A factor that positively influences the success of preservation of highly natural values is the **increased awareness** of the ecological values, including the knowledge of their identification and the preservation of them. Landowners are proud of their properties and most often willing to take the ecological values into consideration in the management of their land, if they can identify them. Increased awareness can be followed by voluntary conservation actions.

Increased knowledge and awareness of the ecological values and the methods for the **management of cultural landscapes** have had a clear effect on the preservation of the valuable nature types. In the ASABR, the highest biodiversity is found in cultural biotopes. The Archipelago National Park was established in 1983 to preserve the biodiversity of the cultural biotopes on the islands of the outer archipelago. As a result of the depopulation starting in the 1950's and the consequential disappearance of traditional agriculture, the cultural landscapes on the islands are getting overgrown and many valuable biotopes and species are disappearing. In the national park, valuable habitat types and species have been preserved by the management of the cultural biotopes, i.e. cutting of the vegetation and grazing by animals. But the national park has a lack of resources for the management of all the overgrown cultural biotopes. Ten years ago, there was also a lack of available animals for grazing. The BR Office has had a central role in promoting cooperation in the management of cultural landscapes, in engaging both new and existing animal farmers. The BR Office has also raised awareness about the values linked to the cultural landscapes and has given practical advice to private landowners. As a result of the work of the BR, cultural biotopes on private land have been managed as well, local entrepreneurs have been educated in landscaping and new animal farmers have been involved in the management. The EU subsidies for preserving cultural landscapes and biodiversity that lately have increased, are of great importance for animal transport to the small islands in the outer archipelago. The



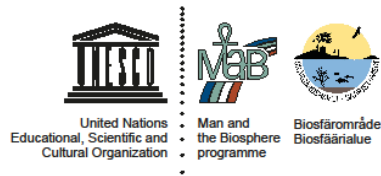
BR, with its sustainable development approach, has been an important link between the economic and ecological values and has functioned as a spider in the web in promoting the management of cultural landscapes in the Archipelago Sea Area.

**Increased awareness of the marine environment** is of high importance for the conservation work. The condition of the Baltic Sea and the Archipelago Sea has a negative impact on the biodiversity of the marine habitats. The nutrition input from agriculture and the sewages have clearly decreased, but the positive effects are not yet to be seen. The knowledge of the marine habitats have increased along with the major marine inventories that have taken place since the year 2000 (see 4.3), which is of high importance for the conservation activities.

The ecological balance and the structure of the fish fauna have changed due to human activities and the eutrophication of the sea. Fish species with economic value, such as flounder and trout, have decreased and others less interesting for the fishery, like cyprinids, have increased. Large cyprinid fish populations damage the nets and hamper the trap net fishing of more valuable species; their large numbers can also have a detrimental impact on other fish populations and the delicate balance of the coastal ecosystem. Annually, professional fisheries in Finland remove some 500 tons of phosphorous from the Baltic Sea. Most of this consist of nutrients that have accumulated in herring and sprat in open sea areas. The fisheries of cyprinids and other under-utilized coastal species are nowadays primarily restricted by the fact that there is insufficient demand for the catch, and therefore not commercially viable.

The Biosphere Reserve Office has primarily focused on information about the condition of the sea by various public events. In 2006, a theme year for the Archipelago Sea was organized in conjunction with several partners in the region. The coordinator of the BR actively participated in the realization of the program, coordinated by Pro Archipelago Sea and Turku University of Applied Sciences. The organized seminars, that reached up to 100-300 persons/event, focused on seals, archipelago living and seabirds. Also practical events were arranged, such as a course in the abatement of oil pollution and cleaning of beaches. In 2007, a seminar focusing on the complexity of the changes in the Archipelago Sea was organized. Great effort has also been to inform how wastewater treatment affects water quality, as well as advice for different wastewater treatment solutions.

In 2010, arrangements were made to enable residents in the BR to apply for funding for the planning of new sewage treatment systems. The ambition was partly to encourage residents to focus on planning to achieve environmentally and economically the best solutions and partly to entice people to commence with the renewal of the wastewater treatment, which is required by law. However, the expected impact of the project was mainly to highlight the problem with inadequate wastewater treatment. Regarding the state of the sea, the major emissions are made far from the boundaries of the biosphere reserve. Therefore, the major role of the biosphere reserve lies in environmental education, not in carrying out concrete actions locally. The informational activities of the BR on the pollution of the marine environment have been increasingly directed towards children and adolescents. A program for day care centers, *The pike*



*and his friends* (see 5.10), has been developed, where information about the marine environment and other issues concerning nature is being delivered in an interesting and funny way.

In addition to information and environmental education, participation and involvement have a significant role for success in the protection of biodiversity. There will be an increased focus on strengthening the sense of involvement and participation in the work of the biosphere reserve and on protecting its natural and cultural values.

#### **4.6 Other comments/observations from a biosphere reserve perspective.**

Nature conservation through protected areas is realized through lawful processes of the governmental authorities. The basic idea of a biosphere reserve is to include the ordinary man and woman in the preservation of natural values. It is especially important to increase the understanding of the ecological balance of nature and how it is connected to us humans. The processes of nature are often extremely complex and we must always remember that science is based on probabilities that might be disproved one day. Man has a need for truth and clear rules. One of the main tasks of the biosphere reserve is to educate and create discussion about difficult topics related to man and nature, to popularize research and make it more easily understood.

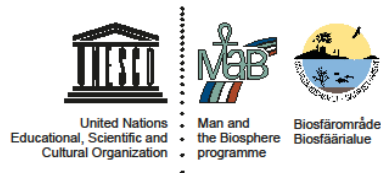
But one should not underestimate the effect of spontaneous interest in nature protection, born out of pride for the home environment. The biosphere reserve itself is an honorable mention to a local community and to all initiatives to preserve a valuable natural area. An important task for the partners of the biosphere reserve is to act as ambassadors and spread the word about what the biosphere reserve is and to create a collective pride in the honorable designation given by UNESCO. In connection to the anniversary year of ASABR, the unique appointment of the archipelago was highlighted and celebrated

#### **5. THE DEVELOPMENT FUNCTION:**

[This refers to programmes that address sustainability issues at the individual livelihood and community levels, including economic trends in different sectors that drive the need to innovate and/or adapt, the main adaptive strategies being implemented within the biosphere reserve, and initiatives to develop certain sectors such as tourism to complement and/or compensate for losses in other markets, employment, and community well-being over the past ten years]

#### **5.1 Briefly describe the prevailing trends over the past decade in each main sector of the economic base of the biosphere reserve (e.g. agriculture and forest activities, renewable resources, non-renewable resources, manufacturing and construction, tourism and other service industries).**

Agriculture, fishing and forestry are traditional livelihoods in the biosphere reserve, but their importance have steadily been decreasing over a longer time. The governmental employment in the region has also been of great importance, likewise the employment by the military, the coast



guards and the Finnish maritime administration. Unfortunately, many of these activities have been withdrawn from the area. Instead, tourism and the service industry have become the most important livelihoods.

A special feature of the area is the large amount of summer cottages, or second homes. The number of part-time inhabitants has increased. The general trend has been to renovate and enlarge the summer cottages, which are then used as part-time homes during a longer season. The large amount of people moving around in the archipelago, including both part-time inhabitants and tourists, have a crucial role for the success of the local entrepreneurs, e.g. shops, restaurants and other services. A few studies have been done on the economic benefits for the local society due to part-time inhabitants and visitors. According to a study made by Metsähallitus, tourism brings 3,8M € to the local society and 45 job opportunities to the region. In 2015, the total amount of visitors in the national park was 78 700.

### **Agriculture**

Agriculture is, as in Finland and Europe, becoming more and more economically pressed. Many farmers in the archipelago have moved away from the production of traditional crops and focus on special crops instead. Since the Finnish entry into the EU, farms with special breeds of vegetables, new potatoes etc. have been decreasing. Today, most farmers are occupied with several businesses, since small-scale agriculture alone is no longer economically sustainable.

### **Animal farming**

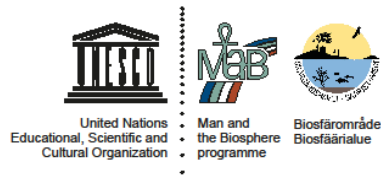
The amount of animal farms has decreased during the last decades, while the remaining ones have grown bigger. Lately, the decrease has ceased. Among sheep farmers, there are even new ones coming in, but most of them have only a few animals, kept without any economic interest.

### **Forestry**

Forestry is quite a stable industry. However, it seems to have decreased a bit since the Natura 2000 programme was carried out. Some inhabitants of the biosphere reserve make part of their living from their own forests, but, due to the geography of the area, this is very small scale. The Forest Biodiversity Programme for Southern Finland (METSO) 2008–2016 continues to promote voluntary conservation schemes for privately owned forests. The National Forest Strategy aims to increase the production of biofuel.

### **Fishing industry**

In Finland, we consume about 37 kg fish/person/year (FAO 2007). Of all fish consumed, 84% is imported, 10% domestically farmed and only 6% is caught by Finnish commercial fishermen. The number of professional fishermen in the Archipelago Sea has been decreasing since the 1980's, and the number has decreased by a third during the last decade. Today, there are only 95 registered fishermen in the biosphere area, according to Åbolands Fishermen's Association. Further, the average age of professional fishermen has increased and is today about 51 years.



Despite increased catch efficiency, the profitability of coastal fisheries has decreased. Factors to explain this include higher costs, lower fish prices, marketing difficulties, changes in fish stocks into less valuable fish and a huge increase in the Grey seal population in the Archipelago Sea, as well as damage caused by the European cormorant damage.

### **Fish farming**

About a fourth of all farmed fish for human consumption in Finland is being produced in the Archipelago Sea. In the late 1990s and early 2000s, there was a remarkable fall in the amount of fish farms. Since 2005, the number of fish farms have remained relatively consistent, but the output has somewhat decreased. At the moment, we can see a trend where fish farming is being concentrated to a few larger companies.

### **Tourism**

Tourism in the archipelago is constantly increasing at quite a controllable rate. During the last decade, experiential travel has grown in popularity. According to Visit Finland, the uniqueness of the Finnish archipelago justifies making it internationally known. The Ministry of Employment and the Economy has chosen the project *Merellinen saaristo* (Archipelago at the seafloor) as one of three top projects to be completed during a three years period, starting from 2015. The budget of 6.5 million euros is to be directed to SME: s throughout the project. The aim is to make the archipelago area internationally competitive through the development of networks, service infrastructure and product commodification.

### **Construction**

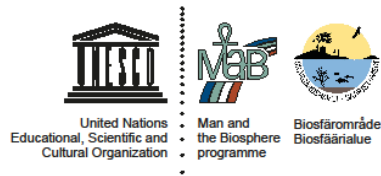
In Pargas and Kimitoön, the two municipalities of the biosphere reserve, there are approximately 13 000 summer cottages. They constitute two of three top municipalities in Finland with more summer cottages than inhabited estates. Due to the huge amount of cottages, in addition to the trend to build and renovate buildings for part-time living, these constructions seem to be an ever-growing industry.

### **State employment**

Historically, governmental jobs have had a significant importance for the archipelago. This includes workplaces within the pilotage authorities, the border guards, ferry services and the army. The vast majority of these jobs have virtually disappeared, also during the past decade. There was a change in an operational model at a major military base on Gyltö, which had radically cut down on its staff, and the West Finland Coast Guard District closing its offices in Nagu.

### **Multiple jobs**

For islanders, it has always been of great importance to have several jobs. Largely, this is due to the fact that islanders must be able to shift between different tasks in different seasons. This concerns especially tourism, which is mainly concentrated towards the summer season. For

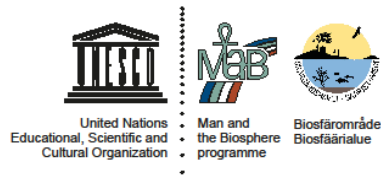


example, farmers can be engaged in accommodation services and fishermen can drive a taxi boat during high season in the summer, while the winters can be used for construction and handicraft.

**5.2 Describe the tourism industry in the biosphere reserve. Has tourism increased or decreased since nomination or the last periodic review? What new projects or initiatives have been undertaken? What types of tourism activities? What effect have these activities had on the economy, ecology and society of the biosphere reserve? Are there any studies that examine whether designation of the area as a biosphere reserve has influenced the number of tourists? Please provide the bibliographic information of any studies and/or a paper copy in an annex.**

The Archipelago Sea, where the Archipelago Sea Area BR is situated, is one of the top tourist destinations in Finland. The tourism industry in this area is a growing economy with increasing importance for the local economy. We cannot present reliable visitor numbers from the BR exclusively, but visitor estimates are derived from the Archipelago National Park, from Pargas and Kimitoön and all in all from the Turku Archipelago in all. For the Turku Archipelago, an estimate from 2015 is about 338 000 visitors yearly, which includes 258 000 accommodations, 42 000 guest harbour nights, 22 000 persons on the Archipelago Trail Short Cut and 16 000 on the Archipelago Trail (Statistics Finland). The National Park has had about 80 000 visitors in 2015. There are two visitor centers in the BR, the Nature Centre Blue Mussel, with 12 000 visitors in 2015, administered by Metsähallitus Parks & Wildlife Finland, and the Archipelago Centre Korpoström, administered by the Åboland Archipelago Foundation. Other popular destinations in the BR are the islands of Sjalö, Jurmo, Björkö, Örö, Jungfruskär, Berghamn, Brännskär and Utö. Sjalö, probably the most visited small island, had 20 000 visitors in 2015. A majority of visitors are domestic visitors, and their numbers are increasing. The amount of visitors from abroad has been more consistent. Consequently, new national and regional tourism strategies focus on increasing the amount of visitors from abroad. Most visitors in the area arrive during the summer months, with the highest peak being in July. Thus, the weakness of the tourism industry in the area is the short season. The strong seasonality makes tourism vulnerable to weather; summers with rainy or cold weather immediately influence visitor numbers. Initiatives have been undertaken to prolong the tourism season, for example wellness holidays during off season, with a focus on nature, quietness and well-being.

**Activities.** Visitor surveys are regularly carried out in the Archipelago National Park, the most recent ones in 2008 and 2014. According to these studies, most visitors visit the National Park to enjoy nature, the scenery and to hike and camp in the nature. Hiking is getting more popular and new nature paths and trails have been built at sites with special natural, cultural and /or historical values. The most convenient way to move in the National Park is by boat, so sailing and motor boating are important activities. Also other activities related to the sea, like kayaking, fishing and diving, are popular. The National Park has two underwater nature paths for divers and snorkelers. Outside the National Park, bike and car tourism is popular, and a large part of the BR can be reached by the Archipelago Trail – a road connecting islands with road ferries and



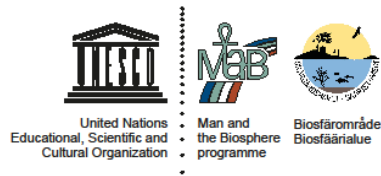
cable ferries. Adventure tourism is getting more popular, but on the other hand also more quiet activities like bird watching and nature photography are becoming more popular. The public right of access, or so-called “everyman’s right”, gives, by international standards, citizens (and foreign visitors) in Finland exceptionally equal and diverse opportunities outdoors.

**Sustainability.** In Finland, Metsähallitus Parks & Wildlife Services manages most of state owned protected areas, like the Archipelago Sea National Park. Thus, they also have the responsibility for tourism development in these areas. A national action plan to develop nature tourism and recreational use of natural areas was drawn up for 2003-2010. An important measure has been to develop criteria and indicators to measure sustainable use. These actions aim to increase visitor numbers without risking nature or culture values.

During the past decade, the Archipelago Sea BR has been strengthening its role as a platform for communication in the development of sustainable nature and culture tourism. The role of the BR is to especially support communication between the municipalities and the Parks & Wildlife Finland, but also to include entrepreneurs and other local actors. As a result of these joint efforts, the National Park was rewarded with a PAN Parks-certificate in 2008 (See 5.7.). The strategy for nature tourism, released in 2009, was an important step in preserving the archipelago environment with its natural value and biodiversity, and to maintain the area’s cultural values, while enabling tourists to visit the area on a sustainable basis. This strategy was also part of the verification process for membership in the PAN Parks network. A strategy for sustainable development of the visitor industry on Örö Island was later released in 2014. The vision is that the island acts as a model for combining larger-scale tourism with effective protection of the sensitive archipelago nature. The Parks and Wildlife Finland is continuously developing measures to estimate the environmental impacts of nature tourism in protected areas. The measures are derived from their nine principles for sustainable nature tourism, including aspects of ecological, socio-cultural, and economic sustainability. Sustainability is approached by setting standards, i.e. defining the limits of acceptable change (LAC), for each indicator. The indicators have been tested in six pilot areas across Finland and a suggestion of relevant indicators for the Archipelago NP was created in the Strategy for nature tourism (See publications Annex VI). Some of these proposed indicators are used continuously, while others have not been measured due to lack of resources. Ecological effects of tourism are considered small, due to relatively small scale tourism and effective management of the Archipelago NP.

The nine principles for sustainable nature tourism are as follows:

1. Nature values are preserved and the activity promotes nature protection
2. Minimum encumbrance of the environment is assured
3. Local culture and heritage are respected
4. Customers’ appreciation and knowledge of nature are promoted
5. Customers’ opportunities to find recreation in nature are enhanced



6. Customers' mental and physical wellbeing are reinforced
7. Positive impacts are made on local economy and employment
8. Communication and marketing are of high standard and carried out responsibly
9. Activities are planned and implemented in cooperation

**Economic effects.** In Finland, the increased interest, need and demand for estimating the local economic impacts of visitors' spending in national parks and other nature recreation areas, has resulted in a number of case studies where the local economic impacts of certain areas have been estimated. According to the latest visitor survey in the Archipelago National Park 2014, the local economic effect of visitors in the National Park was estimated to be about 6.4 million euros and 77 man-years.

Tourism is one of the main sources of livelihood in the area. Local communities derive income both directly (private entrepreneurs) and indirectly from it (collaboration with the Archipelago National Park). Furthermore, local communities and municipalities achieve incomes both directly and indirectly due to tourism industry. Because of the short tourism season, private tourism entrepreneurs typically cannot sustain themselves by tourism only, but income from tourism is an important side income. Also local farmers are supported by tourism. Many farmers supply restaurants and businesses with locally produced food products. An increased general interest amongst people to visit farm shops and buy local produce is evident, resulting in an increase in sales of these products. The BR Office has had an important role in supporting local production, processing and selling, by anticipating projects like *Mathantverk i Finland* (transl. Artisan food in Finland). The artisan food project offered education in food processing, in order to strengthen the entrepreneurs' knowledge, develop their methods and their entrepreneurship. The results of the project were encouraging - new companies were set up, already established companies got developed further and new local food products were introduced on the market. Therefore, the BR Office continues its efforts in developing and spreading the artisan food concept in Finland through new projects.

The BR has taken another important step towards strengthening tourism and local economy. In the autumn of 2010, two actors; Åboland Archipelago Foundation and Svenska Småbruk och Egna Hem Ab, together purchased the archipelago estate Brännskär. The foundation acts as the manager of the estate. By purchasing the archipelago property with the aim to promote all year round accommodation and activities, thus preventing this socially and culturally important estate from being solely used as a place of private leisure. Since 2011, the place has been rented by local entrepreneurs. The owners manage and develop the place together with the tenant. The tourism services offered at Brännskär; marina, cafeteria and adventure services, are driven in a sustainable way supporting the local economy.

**5.3 When applicable, describe other key sectors and uses such as agriculture, fishing, forestry. Have they increased or decreased since the nomination or the last periodic review? What kind of new projects or initiatives have been undertaken? What effect have they had on the economy and ecology of the biosphere reserve, and on its biodiversity? Are there any studies that examine whether designation as a biosphere reserve has influenced the frequency of its activities? If so, provide the bibliographic information of these studies and/or a paper copy in an annex.**

### **Agriculture**

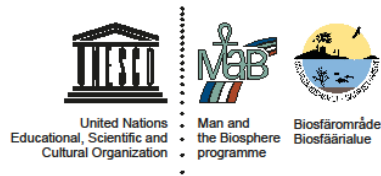
Agriculture in the area has always been small-scale, because of the nature and the geology of the area. The islands are small and nature variable, thus the field areas are small. Today, traditional agriculture is disappearing and the farms are getting bigger. But most farms are still small, compared with farms on the mainland or in other countries. Agriculture is, like in Finland and Europe generally, becoming more and more economically pressed. Producer prices are constantly decreasing. Small farms in the archipelago cannot compete with increasing volumes to sustain themselves, like farms on the mainland. These facts have brought a change; many farmers have moved away from the production of traditional crops and focus on special crops instead. The lack of profitability makes it impossible to continue farming, without also doing side-line jobs. Since the Finnish entry into the EU, farms with special breeds of vegetables, new potatoes etc. have been decreasing. Today, most farmers are occupied with several businesses, since the agriculture alone is no longer economically sustainable.

The Biosphere Office has actively supported local producers. In connection with the BR, the municipalities of Pargas and Kimitoön have ran several projects within the food sector. Active projects in 2016 are *Mathantverk* and *Kustens mat*, focusing on processing of foodstuff to make them more profitable. The BR Office is working at several levels: educating and supporting producers in their business, but also supporting networks of direct trade between local farmers and consumers and the HoReCa-industry.



There has been a positive development of straight forward producer-consumer trade in the area, called REKO. The BR Office has been working on strengthening and marketing the REKO concept in the region. Today, there are REKO groups in both Pargas and Kimitoön.

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## **Animal farming**

The amount of animal farms have decreased during last decades, while the remaining ones have grown bigger. Lately, the decrease has ceased and among sheep farmers there are even new ones coming in, but most of them have only a few animals that are kept without any economic interest. Animal farming in the archipelago has both ecological and cultural benefits, as long as traditional methods are maintained. Small-scaled farming is the only possibility in the scattered landscape in the archipelago, but it is giving good preconditioning for the production of quality products. The biodiversity and the cultural values of the traditional agricultural landscape is dependent on the management by grazing animals.

Keeping sheep is especially suitable for archipelago regions, since sheep are needed as grazers in preservation and restoration of traditional biotopes. During the last years, the interest for sheep products, and quality meat products in general, has increased. The BR has promoted quality products, like “meadow meat”, from the animals used in landscape management. In the summertime, many islands in the biosphere reserve are also grazed by cows. Today, farmers sell their meadow meat products without any problem. The popularity of both sheep farming and meadow meat is constantly growing.

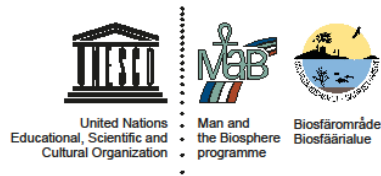
However, processing of the products is necessary, to make them more profitable. In the *Knowsheep* project (see 5.10), we shared knowledge and practices with Estonia and Sweden, in order to facilitate the sheep industry across the whole value chain, including production, processing and marketing of sheep products.

## **Fishing industry**

Commercial fishing in the Archipelago Sea is small and the interest in fishery is based more on tradition than on major economic viability. The number of professional fishermen in the Archipelago Sea has been decreasing since the 1980's, and the number has decreased by a third during the last decade. The average age of professional fishermen has increased. In Finland, the average age is about 51 years old. There are difficulties in attracting younger generations in becoming fishermen.

There has been a constant drop in profitability already for many years, not least due to the economic competition on the world food market. In addition, major changes in the marine environment have affected the fishing industry. The altered ecological balance has affected the composition of the species. The competitiveness of seals and cormorants on economically interesting fish has lessened the profitability for the fishermen, and protests against the environmental administration have been considerable. There are also other reasons for the decline of fishing, such as eutrophication and difficultly accessing fishing grounds, particularly for newly established fishermen.

The cormorant benefits from the nutrient-rich waters and has therefore increased sharply in recent years. Successful conservation programs have led to the recovery of the grey seal, after a sharp decline during the 1970s. Seals and cormorants cause direct damage to fish landings and equipment, but are also suspected to cause changes in the behavior of fish and in fish stocks, and



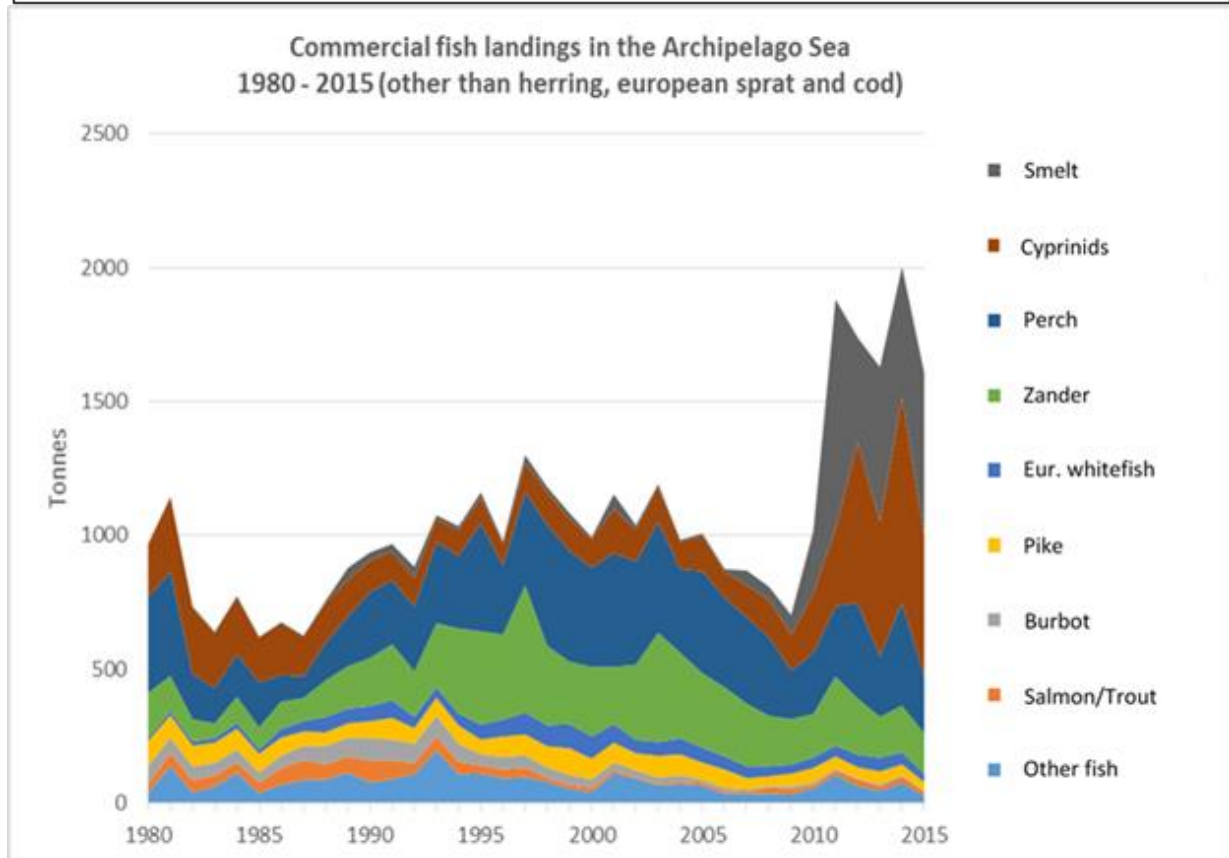
their geographical distribution. Several project efforts have been carried through in order to combat the problem of direct damage and several versions of seal-safe fishing equipment have been developed. However, they have not yet been successful in solving the problems of seal damage. In Finland, the problems are presently resolved by paying compensation to the affected fishermen. Also EU's banning of all trading with seal products affected the use of seals as a natural resource in hunting.

During the last few years, new possibilities for fisheries have been seen to be increasing the commercial interest in cyprinid fish and in domestic fish in general. Many efforts have been made to promote the use of fish species not previously seen to be of any economical interest. The interest in local products is growing and the consumers would like to support the local producers.

Herring landings have escalated, but the demand in the market has previously been low. A recently established fish flour factory on the island of Kasnäs, inside the biosphere reserve, will increase the demand of local herring and sprat. Based on a study by the Natural Resources Institute Finland (Setälä et al. 2016, <http://jukuri.luke.fi/handle/10024/535286>), the new fishmeal plant has significant economic impacts: the Kasnäs fishmeal production line opens an important domestic market for Baltic herring and brings both turnover and jobs to the archipelago municipalities. The recycling of nutrients is beneficial for the environment as well.

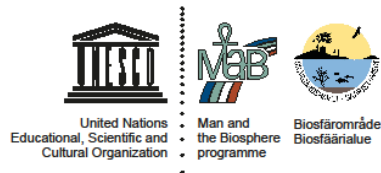
Along with the eutrophication of the Archipelago Sea, the populations of cyprinid fishes, such as bream, roach and silver bream, have increased. Large cyprinid fish populations hamper the nets and the trap net fishing of more valuable species. Their large numbers can also have a detrimental impact on other fish populations and the delicate balance of the coastal ecosystem. It would be possible to increase the utilisation of cyprinid fishes significantly if we could find a viable use for the catch. In practice, fishing is also the only active way of removing nutrients that are already in the sea. Professional fisheries in Finland remove some 500 tons of phosphorous annually from the Baltic Sea. Most of this consists of nutrients that have accumulated in herring and sprat in open sea areas. The fisheries of cyprinids and other under-utilised coastal species are nowadays primarily restricted by the fact that there is insufficient demand for the catch, and therefore it is not commercially viable. Additionally, existing estimates of the numbers and production potential of coastal cyprinid populations are approximate at best.

**Reference: Riista- ja kalatalouden tutkimuslaitoksen (nyk. Luke) saalistilastot, pyyntiruudut 47, 51, 52, 60 ja 61**



## Fish farming

Fish farming serves as a good complement to the fishing sector to ensure the availability of fish for human consumption. About a fourth of all farmed fish for human consumption in Finland is being produced in the Archipelago Sea. Fish farming is, however, a relatively new industry in the southwestern archipelago. In the early 1970s, fish farms were established to replace the stagnating fishing industry. Alongside fishermen, many farmers and other islanders started up fish farming on a small scale, especially in the 1980s. In the late 1990s and early 2000s, there was a remarkable fall in the amount of fish farms. Since 2005, the number of fish farms have remained relatively constant, but the output has somewhat decreased. A remarkable share of Finnish fish farmers have moved their production facilities to Sweden, where practices regarding environmental permits are more preferential towards aquaculture than in Finland. At the moment, the Ministry of Agriculture and Forestry has initial plans to increase fish farming by re-enacting these practices. In recent years, environmental authorities have conducted a repositioning of farming units to concentrate emissions to places where the damage is smallest. For smaller



companies, the repositioning could be economically burdensome. Therefore, we can see a trend where fish farming is being concentrated to a few large companies. The relocation has led to larger units further offshore, generating a lower local environmental impact.

## Forestry

Forestry is quite a stable industry that perhaps has decreased a bit since Natura 2000 was carried out. In Southwestern Finland and in the Archipelago Sea, nationally very rare deciduous forests are common. The Forest Biodiversity Programme for Southern Finland (METSO) 2008–2016 continues to promote voluntary conservation schemes of privately owned forests. The National Forest Strategy aims to increase production of biofuel.

Everyman's rights gives everybody access to the forests and permission to pick berries and mushrooms. Some local inhabitants make part of their livelihood from their own forests. Logging in the archipelago requires special equipment. Currently, logging is dependent on one company only. New forest management methods have been approved and forest owners can choose between continuous logging or logging by figures.

## 5.4 How do economic activities in the biosphere benefit local communities?

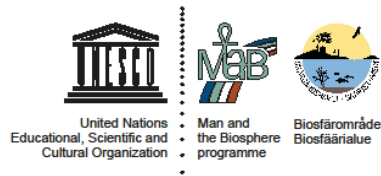
### General aspects of the Biosphere Reserve area

In order to work for rural development, different functional tools are required. LEA, Local Economic Analysis, can provide statistics over a certain area, such as population, migration, disposable income and consumption patterns. Unfortunately, no such analysis has been carried out for the archipelago area. However, a LEA for the former municipality of Nagu is planned by the Centre for Lifelong Learning at Åbo Akademi University.

Tourism is one of the main sources of livelihood in the area. In 2014, the local economic effect of visitors in the National Park was estimated to about 6.4 million euros and 77 man-years. Local communities derive income both directly (private entrepreneurs) and indirectly from it (collaboration with the Archipelago National Park). Furthermore, local communities and municipalities achieve incomes both directly and indirectly due to tourism industry.

According to the Regional Council of Southwest Finland, the facts for businesses in accommodation and food services in the Åboland area are as follows: 109 business locations, 314 jobs and an annual turnover of 29 million euros.

The association *Trygga skärgårdsboendet* (Securing archipelago living) studied the economic importance of part-time residents in the archipelago of Pargas and Kimitoön. Nearly 3000 part-time residents responded to the questionnaire sent out by the association. According to their study, published in 2012, part-time inhabitants in the archipelago would like to use local service to a greater extent, if offered. More than half of the respondents would be willing to pay a portion



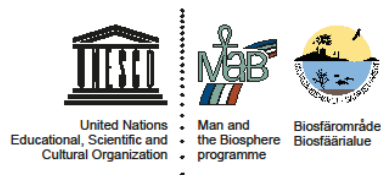
of their tax to the part-time municipality. Part-time inhabitants do approximately 50% of their shopping in Pargas och Kimitoön, which adds up to a total sum of 17.5 million euros.

### Aspects of the BR Office

The management of the Archipelago Sea Biosphere Reserve pays significant attention to activities that support sustainable economic development. The depopulation of the archipelago is one of the major challenges the BR is working with. The Office of the Biosphere Reserve is located at the Department for Livelihood in the Town of Pargas and is linked to the Department of Development at the Municipality of Kimitoön, in which other business-related activities are also conducted. This fact makes it easy to link biosphere reserve activities to local business issues and introduce reflections of sustainability into other operations within the departments. The BR Office has made significant efforts to support sheep farming in the archipelago. This has had a clear positive impact on the sheep industry that has grown in recent years. The BR has also highlighted the economic aspects of cultural landscape conservation and encouraged animal farmers to brand their products as quality products, such as meadow meat, if they conduct management of cultural habitats. The Biosphere Reserve Office has also supported the local economic development by promoting local food and small-scale food processing in the region (see 5.10).

The organization of the BR has had very limited funds for conducting its activities. In 2008, the Åboland Archipelago Foundation was founded. The Foundation works for a vital archipelago by promoting and supporting opportunities for permanent living in the archipelago and by promoting a sustainable economic, ecological and socio-cultural development in the Archipelago Sea. The Biosphere Reserve Office has administered the process for the establishment of the Foundation, and the coordinator has served as secretary since the start. The objectives of the Åboland Archipelago Foundation go hand in hand with the ambitions of the Biosphere Reserve. These two bodies work in close cooperation, which has opened new opportunities for the Biosphere Reserve Office.

The Åboland Archipelago Foundation flagship is a culturally and socially valuable archipelago property, purchased on the free market. This property, on the island of Brännskär, has become a model for how a viable archipelago can be promoted by leasing out homes for all year round accommodation. Brännskär has now been inhabited for more than five years by a young boat builder, who has developed an innovative tourism experience together with some business colleagues. All the construction work and all activities have been executed in a sustainable manner, by taking into consideration the natural values and the cultural history of the island. In addition, the business idea of the island is based on these very values. This venture serves as a role model for other tourism entrepreneurs in the region. At present, already two families live on the island and two new companies, with several employees during the summer, are based on the island. Through the development of this model, the BR and the Åboland Archipelago Foundation have been able to realize an action that exactly corresponds to the purposes of the BR.



The Biosphere Reserve has not developed into a tourist destination in itself, but the BR Office has participated in the development of sustainable tourism through strategic planning, certification of tourism enterprises in connection with PanParks (see 5.7), development of new nature and culture trails, brochures presenting the history of the villages in the archipelago and information materials about the biosphere area. In connection to the jubilee year, a BR flag was launched which is now proudly flying at several locations inside the reserve. All these efforts on improving the visibility and profile of the Biosphere Reserve can contribute to the attractiveness of the area and thus to an increase in tourism.

Virtually all events arranged by the BR Office are arranged within the Biosphere Reserve and hence favors the local businesses. If possible, local businesses are always used for outsourced services.

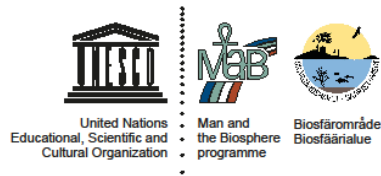
### **5.5 How do you assess the effectiveness of actions or strategies applied? (Describe the methods, indicators).**

Many of the initiatives for promoting economical sustainability are conducted by development projects. EU-funded projects always have their own quantitative indicators. However, qualitative indicators are often more important in order to assess effectiveness. A challenge in measuring the effectiveness of actions, is the fact that the BR Office is most active in the first phases of a project. For the BR, focus lies on initiating, catalyzing and starting up projects and initiatives. The running projects are then handed over to other actors. What can be counted is the amount of projects with a local economic approach, the amount of entrepreneurs involved and the number of started companies.

The actions of the BR are managed according to a work plan. Every year, the work plan is evaluated in the annual report that is approved by the steering committee. In the annual report, the implementation of different projects can be followed. Quantitative indicators are rarely used, since qualitative indicators often better describe the results. Quantitatively, one can measure the number of organized events, persons in the audience, presentations, initiated or implemented projects, visitors of biosphere reserve exhibitions and so on. But the estimate depends on whether solely the BR Office arranges the events, or if they are arranged in cooperation with another part, or if another part has implemented what the BR Office has initiated. Depending on different needs, the role of the BR Office can be very different (see 5.10).

### **5.6 Community economic development initiatives. What programmes exist to promote comprehensive strategies for economic innovation, change, and adaptation within the biosphere reserve, and to what extent are they implemented?**

*The Rural Development Programme* (EU) is an important financial instrument for the development of rural areas. *The Rural Development Programme in Mainland Finland*. Finland's Rural Development Strategy for the period 2014–2020 focuses on:



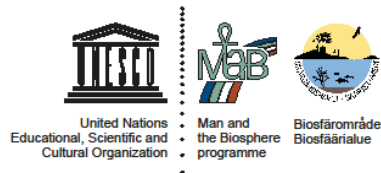
- Improved skills and dissemination of information, and more innovations and co-operation in rural areas
- More effective climate change mitigation and adaptation
- Increased biodiversity, improved status of water bodies and soil in agricultural use
- Diversification of rural enterprising and higher employment, better services and improved possibilities for participation
- Improved competitiveness of agricultural production
- Rural enterprises responding to consumer demand and values by producing high-quality food and by improving animal welfare

Rural areas in Finland are covered by **Leader groups**. In Finland, Leader local action groups (LAGs) are registered associations that develop rural areas by funding local rural development projects and supporting local enterprises. Part of the Rural Development Programme is implemented through local association (Leader-group) with an own regional strategy. The BR municipalities Kimitoön and Pargas form together with the Municipality of Gustavs, the local Leader association called “I Samma Båt”. During the period 2007-2013, € 2, 8 million has been invested in various types of development projects in this area. The Biosphere Office has initiated and participated in several Leader supported projects.

*The Central Baltic Programme* 2014-2020 is a funding programme financing cross-border cooperation projects in the central Baltic Sea region. The participating countries are Finland (incl. Åland), Estonia, Latvia and Sweden. The Biosphere Office has participated in several CB projects.

**5.7 Local business or other economic development initiatives. Are there specific “green” alternatives being undertaken to address sustainability issues? What relationships (if any) are there among these different activities.**

After 2012, when the steelwork FNsteel went bankrupt and about 200 people became unemployed, Kimitoön was pointed out as being a region in need of urgent structural change. This gave rise to several projects with the aim to improve the employment situation of the municipality. One example is the project *PULS*, where joint efforts (entrepreneurs, individuals, the municipality, the employment office, the ELY Centre and others) were made to find a viable way to create more jobs on Kimitoön. Other examples on economic development initiatives in the area is the project *Development of business advice services in Varsinais-Suomi 2007-2014*, with the main goal to improve the business advice services in Southwest Finland, and the youth project in Pargas, *Creating Business – entrepreneurship at school 2012-2014*, with the aim to develop an entrepreneurship curriculum in secondary level educational institutions in the archipelago.



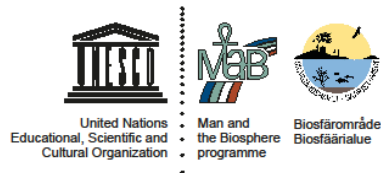
During the last five years, serious efforts have been made on improving guest harbors in the area. The Town of Pargas has been responsible for two projects with the main goal to improve the services available in the guest harbors of Iniö/Norrby and Houtskär/Näsby. The guest harbours of Dalsbruk and Nagu are part of the Central Baltic funded project *Family Ports*, with the aim to improve accessibility, ecology and comfort. The project includes lighting by using solar panels and charging stations for electric motors.

During the last 10 years, green projects and initiatives for sustainability have become more and more common in Finland. Both the private and public sector make up sustainability strategies. **These are some of the sustainability projects realized since 2005 that concerns the biosphere reserve:**

- *Avlopp i kretslopp* (Sewers in circulation), with the aim to support the municipalities and local residents in the rural areas of Kimitoön and Pargas by providing expert help in forming the local sewage systems, e.g. through water cooperatives.
- *Kimitoön self-sufficient in energy*, with the aim for Kimitoön to get an overall picture of the energy flow and to inform about the various alternative energy solutions.
- *Wind power plant for self-lighting Keistiö Island*, a project where wind turbines were installed in order to provide energy for the LED road lighting of the island.
- *Smarta Kimitoön*, a business development project with the aim to create new enterprises and jobs on Kimitoön. The target group was new and already existing companies keen for recognition within the Clean Tech industry.
- *EETU – Energy as the advantage of the region*, with the main goal to promote the cooperation between businesses and organizations in order to achieve energy efficiency and promote the use of renewable energy sources.
- *Resource efficiency among companies in Kimitoön*
- *Smilegov*, an EU project where energy plans and developing sustainability plans were made for the islands of Iniö and Nagu.
- *Knowsheep* and the *Artisan Food* projects, mentioned also elsewhere in this report

Within the tourism sector, Parks & Wildlife Finland has the main responsibility for sustainability issues. They make up strategies, committing themselves to and handling the cooperation agreements with local entrepreneurs, who need to fulfill certain criteria and receive the appropriate education before they can utilize the national park in their businesses. The core area of the BR, the Archipelago National Park, was a certified member of the PAN Parks network. The overarching aim of the network was to combine qualitative nature conservation with first class tourism products. It was the first marine area in the network. The membership lasted from 2007 until the NGO “PAN Parks Foundation” filed for bankruptcy in 2014.

As a verification for the membership in the network, a “Strategy for Sustainable Tourism in the Archipelago Sea” was produced by Metsähallitus Parks & Wildlife Finland in 2009. The strategy area corresponds to the boundaries of the biosphere reserve. There was close cooperation between the BR and the PAN Parks programme, with the aim of locally developing a structure for cooperation in tourism issues. For this purpose, an archipelago cooperation group was founded. Since the break-up of the network, the Archipelago Cooperation Group has been less



active, but is currently under revival. The Cooperation Group naturally extends beyond the boundaries of the biosphere reserve by sharing the best practices with both the immediate archipelago areas and with archipelago and coastal areas in other regions or nations.

**5.8 Describe the main changes (if there are any) in terms of cultural values (religious, historical, political, social, ethnological) and others, if possible with distinction between material and intangible heritage.**

(c.f. UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage 1972 and UNESCO Convention for the Safeguard of the Intangible Cultural Heritage 2003 and [http://portal.unesco.org/en/ev.php-URL\\_ID=17716&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/en/ev.php-URL_ID=17716&URL_DO=DO_TOPIC&URL_SECTION=201.html))).

The major change, affecting everything, is the increasing depopulation of the archipelago. At the same time, the amount of people in the area, i.e. people in second-houses and visitors, is increasing. However, the permanent population has decreased only moderately during the last decade.

Many old properties and houses, that are scarcely ever used or owned by many siblings, are falling into disrepair. With the older generations, much of the traditional knowledge about life in the archipelago is disappearing, e.g. how to move around on the ice, skills for hunting seal or sea birds and traditional construction methods. The challenge is how to restore the traditional knowledge in both a passive and an active way.

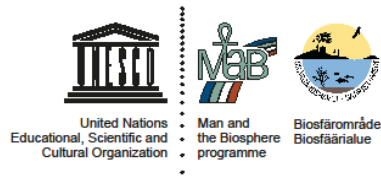
**5.9 Community support facilities and services. What programmes in/for the biosphere reserve address issues such as job preparation and skills training, health and social services, and social justice questions. What are the relationships among them and with community economic development?**

Both in the separate partner organizations of the BR and in the BR Office, there are possibilities for trainees. The BR Office has also been coaching students with their final works and contributed with subjects for student projects.

The educational program for *Mathantverk* (a concept for artisan food) has been of special focus for the BR. The local food and quality product trend has paved the way for the entrepreneurs in food processing in the archipelago. Whilst the concept of artisan food is very attractive for the small-scaled archipelago, it is nearly impossible where mass production is concerned. However, it is very suitable for all types of entrepreneurs considering the locality and the quality of the product.

**5.10 What indicators are in place to assess the effectiveness of activities aiming to foster sustainable development? What have these indicators shown?**

The BR works according to a Work Plan, evaluated after each year in the Annual Report that is approved by the Steering Committee. In the Annual Report, the outcome of the plan is evaluated.



Qualitative indicators are more frequently used than quantitative indicators. Quantitative indicators are, for example, number of events, participants, initiated projects, visitors at exhibitions etc. But the role of the BR Office, in arranging programs or starting up projects, can vary a lot, which makes the qualitative indicators more relevant. During the last decade, the total budget sum for the different projects where the BR Office has had a central role is about 4 million euros. The BR Office has also been involved in several other projects that have supported a sustainable development of the Archipelago Sea area.

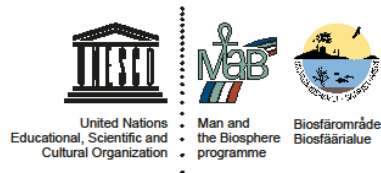
50-100 people attend the Annual Winter Meetings arranged by the BR, while the Forum for Archipelago Research, organized twice a year, attracts 30-50 people. The winter meetings are probably well attended because of their networking character. People participate to meet, establish contacts and find project partners. The BR Office has initiated, participated in or driven about five projects a year. In addition, it has had a consultative role in about three projects a year. The projects have either focused on finding a solution that promotes sustainable development, or on highlighting the sustainability aspect in a larger context. For three years in a row, a fair for sustainable solutions regarding sanitation and energy has been organized in cooperation with Valonia and Pargas. The fairs have attracted ca 500 visitors and 15 entrepreneurs presenting their products a year. The two exhibitions of the BR, *Sheep farming in the archipelago* and *Archipelago Sea under the sea surface*, have reached ca 2000 and 1000 people, respectively. The BR is noted in media 10-40 times a year, depending on what activities are arranged. The Facebook page has approximately 250 followers and Twitter approximately 150 followers.

Good models that are created also serve as important indicators, for example wastewater management models, models for managing cultural landscapes and the concept of artisan food. The BR often creates models or inspirational plans of action, the result often to be seen after several years. For more than 10 years already, the BR Office has promoted the management of cultural habitats in many different ways. At its best, each operation gives rise to several new achievements and every change in attitude generates new ones - and eventually, a real change in society occurs. These results cannot be measured directly. However, based on the number of applications for EU agriculture environmental subsidies for special agreements considering preserving biodiversity and cultural landscapes, one can conclude that the area of land that is being managed has grown during the past 10 years. Also, the number of grazing animals on natural pastures has increased.

Project-based work is followed up according to EU standards. A large part of the activities of the BR is conducted through projects funded by the EU. These projects use several indicators to measure the results.

The activities of the BR Office, in connection to the managed projects, employs 1-3 persons every year, involves 10-20 local companies and reaches ca 500-1000 people through different events.

**Presented here are several models, that have been developed in close cooperation with the biosphere reserve and have led to ongoing activities and/or survived as models:**

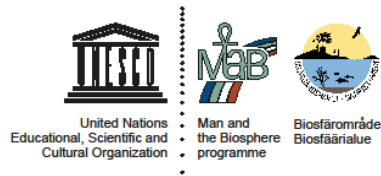


**The Archipelago Sea Biosphere Reserve was involved in founding the Åboland Archipelago Foundation, a foundation focused on promoting a vital archipelago.** The foundation collects funds through gifts and donations. Its mission is to work for a living archipelago by promoting and supporting opportunities for permanent housing, promote migration into the archipelago, and to pursue also other ways of reaching a sustainable economic, ecological and socio-cultural development in the Archipelago Sea area.

**Brännskär, an archipelago estate with newfound vitality.** The Åboland Archipelago Foundation flagship is a culturally and socially valuable archipelago property. This property, on the island of Brännskär, has become a model for how a viable archipelago can be promoted by leasing out homes for all year round accommodation. It is a model adapted to the modern world, but based on traditional values. A young boat builder, who has developed an innovative tourism experience together with some business colleagues on the island, has now inhabited Brännskär for more than five years. All construction work and all activities have been realized in a sustainable manner, by taking into consideration the natural values and the cultural history of the island. In addition, the business idea of the island is based on these very values, this venture serving as a role model for other tourism entrepreneurs in the region. At present, already two families live on the island and two new companies, with several employees during summer, are based on the island. Throughout the development of this model, the BR and the Åboland Archipelago Foundation have been able to realize an action that exactly corresponds to the purposes of the BR.



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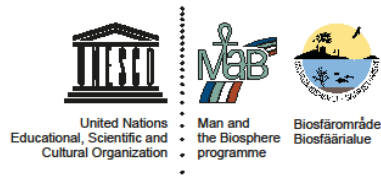


**Mathantverk, a new concept especially suited for small-scale surroundings like the archipelago.** The ASABR has made huge efforts to develop the conditions for entrepreneurship in artisan food. In association to one of the BR winter meetings, entrepreneurs indicated a great interest in food craftsmanship. The artisan food concept, developed by the National Resource Center Eldrimner in Sweden, was presented during the meeting. In cooperation with other regions in Finland, a training program for different trades within the food craftsmanship was started. The first educational program was held in 2013 and attended by 25 persons of which 16 graduated. Some were new entrepreneurs and others developed their business in order to brand themselves as food artisans. During the educational year, the food craftsmen attended eight markets and the project received a lot of publicity (45 entries named in the media). Currently, the training program runs for the second time and involves an even larger region.

Artisan food production is an interesting alternative for coastal and island environs, where economic activities that can be practiced on a small-scale and still be profitable is highly needed. The unique nature and geography limits the possibilities for major cultivating areas. The area is also not suitable for large industrial plants. There is access to primary products of many kinds, but refined products with a local character are scarce. Islanders often have several occupations and artisan food production is suitable as a sideline. Most food artisans grow something that is being refined and many of them possess interesting traditional recipes that could sell well whilst the trend in local food is booming. To get a sufficient basis for courses and resource networking, it is important to exert the regional borders.

**The pike and his friends teach environmental knowledge.** In the project *The pike and his friends*, a pike stuffed animal and his fish mates bring various environmental messages to small children in nurseries. For two seasons now, the concept has been circulated amongst nurseries in Pargas. The program has been developed so that the concept can move around independently. The staff at the day care centers presents an interesting environmental theme with interesting questions to the children. *The pike and his friends* circulates with a booklet, telling stories about how the pike discovers something interesting in his environment - either an environmental problem or simply about interesting species in the wild. The children work around the theme and document in a folder what they have worked with. The pike has visited all the kindergartens in Pargas, which means it has reached 850 children. The material has also been circulated in the area as an exhibition and thus reached many more.

**Enterprise in connection with cultural landscapes.** The permanent residents in the archipelago have declined drastically since the 1950s, while people living in the archipelago only part-time have increased significantly. The decrease in permanent population and the rationalization of agriculture have led to a decline in cultural landscapes, since these are strongly linked to small-scale, traditional agriculture. The open cultural landscape, which previously has been grazed by animals and cleared by man to prepare winter food for the cattle, has started to go wild with shrubbery. Unfortunately, this leads to habitats poor in species - both habitats and species decrease significantly. The biosphere reserve was established, among other things, to provide an arena for tackling precisely this challenge. It is a many-faceted subject, but it fits well into the concept of the biosphere reserve.



What are the benefits of cultural habitat management for the local community? There are, of course, clear ecological benefits, since there is an increase in diversity of both plants and animals in cultural habitats. But are there also clear social benefits? While discussing the issue with the local population, the aesthetic advantages of managed landscapes are often pointed out. An aesthetic local environment increases people's comfort and makes the area more attractive for both locals and potential newcomers, as well as for tourists, which of course is of interest to the municipalities. There is also a strong emotional value - many want to preserve the landscape that you have grown up with, or the idyllic image of what the archipelago landscape "should" look like.

Can cultural habitat management also benefit the entrepreneurs of the archipelago economically? In the Archipelago Sea Biosphere Reserve, farmers and the authorities have worked together to promote the management of the cultural landscapes and, at the same time, support the economic benefits for the local community. The BR Office has carried out projects to, among other things, educate and employ landscaping contractors. These projects have had an effect on employment, especially in connection to the National Park. In connection to these projects, about 20 entrepreneurs in the archipelago have worked with landscape clearing and approximately 50 hectares of overgrown meadow were cleared. Development projects have promoted networking among landowners and animal owners, to make the relocation of grazing animals easier (The EU Leader-project *Värdevårdande inkomster 2006-2007*).

Is small-scale sheep or cattle production in the archipelago economically profitable for those farmers, who choose to ferry their animals out on natural pasture on small islands? Is it possible to combine direct financial profitability with conservation? The number of ecologically valuable areas that need to be cleared up and maintained by grazing is high and only a small part is under maintenance. Areas where habitat management can be long-term and fruitful are being prioritized. Many of the particularly valuable meadows are remote and small in size. Transportation to the islands is expensive, animals on natural pasture are said to grow slower and local breeds, adapted to grazing in the rocky archipelago, give less meat than improved breeds. Just a few years ago, the lack of grazing animals was a problem for the National Park. The BR Office organized an informative event for animal owners and landowners to voice their opinions; 40 people attended and it turned out that the large animal owners were still looking for more grazing land.

During 2011-2014, focus was made on activities that were to strengthen sheep farming in the archipelago. In the EU project *Knowsheep* (Central Baltic), the BR in cooperation with the Estonian archipelago promoted networking among sheep farmers, shared knowledge on product processing and developed new products. The project also raised the public's knowledge of the archipelago sheep and sheep products. There is a growing interest for handmade quality products - let us also hope for an increased interest in sheep as grazers and conservationists. In the project, there was a focus on small-scale sheep farming, which is both a traditionally important line of work and of great importance for the management of the cultural landscape. As a link in a chain of efforts to maintain the species-rich cultural landscapes, sheep farmers have been supported in

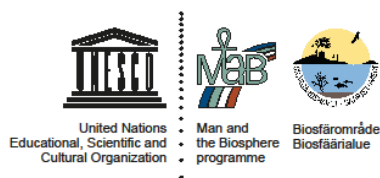
developing the profitability of the sheep industry. For example, three workshops were arranged concerning handling of meat, wool and leather with ca 25 participants/workshop.

In Finland, meadow meat does not have its own brand. If a consumer wants to choose meat on the basis of what the animal has eaten, you have to find out the background of the product yourself. Meadow meat is often sold directly to the consumer. Sometimes, though relatively rare, the producer highlights habitat conservation and natural grazing in their own marketing. At the moment, WWF Finland tries to unravel the possibilities of creating a brand for meadow meat and is studying different models in Sweden, among others. In the future, it will certainly be easier for consumers to support landscape management and make nature conservation more profitable, through their choice of meat products.



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**The biosphere reserve build bridges in school.** *The biosphere reserve in school* was started as an annual program to involve schools in the activities of the biosphere reserve. In cooperation with some dedicated high school teachers, a program where students get acquainted with the biosphere reserve has been developed. As far as possible, they also get a chance to interact with students in other high schools in the biosphere reserve. This supports bridge building at an early age. During the first years, two schools located far from each other in different municipalities in the biosphere reserve attended. Now all schools in the biosphere reserve are participating. Hereby, the program reaches about 60 students a year (see 2.4.9).



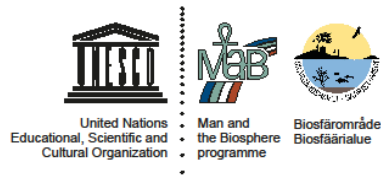
**The Winter Meeting, a forum for archipelago issues.** In 2010, a new event was launched, called the *Biosphere Reserve Winter Meeting*, later *Archipelago Sea Winter meeting*. This was made to create a forum for all those who are interested in the biosphere reserve activities. The winter meetings have had between 50 and 100 participants, depending on the seminar's theme. Efforts have been made to reach different audiences by tailoring the theme for specific target groups. Sometimes, the forum has been used for more coherent issues concerning a special focus area and so on. Nowadays, the winter meetings are important forums for building bridges and developing cooperation projects.

**Common sewage solutions in the archipelago.** Various projects with the aim to support property owners in improving wastewater treatment have been arranged within the biosphere reserve. Models have been created on how sparsely populated areas can utilize joint sewage solutions when the properties wastewater treatments are being updated. Information on common water treatment solutions was being made and the BR Office acted as advisor in projects where multiple properties installed treatment plants together. Five new solutions were planned during the project.

### **5.11 What are the main factors that influenced (positively or negatively) the success of development efforts in the entire biosphere reserve? Given the experiences and lessons learned in the past ten years, what new strategies or approaches will be most effective?**

The actions of the Biosphere Reserve are much about creating models. When developing sustainable solutions, the power of good examples is important. You need to test how well the solutions are suited for the local conditions and show the general public how something has concretely been realized. In order to create models for the best practice, development projects are important. These are run to test an idea or a possible solution and may as well fail as succeed. Even failure can gather interesting information about sustainable solutions that can be adapted to local conditions. The BR Office is completely dependent on **external funding to run projects**. EU has several programs suitable for the development of the ASABR and therefore has a significant impact on how the activities for sustainable development can be managed. Another important factor for success is to **involve several - and the right - target groups in the work**. When a project is being anchored in the local community from the beginning, there are greater possibilities that the activities of the project live on also after the project ends. The involved target groups should preferably be involved in project planning. The best case scenario is that the target group is the one that comes up with the idea. The role of the BR is primarily to create an arena for the development of ideas for sustainable development and to enable implementation of ideas.

To bring in new ideas and implement solutions, **a fluent communication is required between all stakeholders**, as well as a **strong confidence in the other party**. Confidence is always created between individuals and can seldom be directly inherited by others. Various venues for meetings and communication are of great importance for the efforts for a sustainable



development. The Biosphere Reserve has tried to serve as an arena for cooperation and communication, both through temporary connected networks and continuous ones. The steering committee for the BR functions as a small network that is based on cooperation and communication between different actors within the biosphere reserve.

## 6. THE LOGISTIC FUNCTION:

[This refers to programs that enhance the capacity of people and organizations in the biosphere reserve to address both conservation and development issues for sustainable development as well as research, monitoring, demonstration projects and education needed to deal with the specific context and conditions of the biosphere reserve.]

### 6.1 Describe the main institutions conducting research or monitoring in the biosphere reserve, and their programmes. Comment on organizational changes (if any) in these institutions over the past ten years as they relate to their work in the biosphere reserve.

University of Turku (UTU), with its Archipelago Research Institute, Åbo Akademi University (ÅAU), with its field base Korpoström, Metsähallitus Parks & Wildlife Finland, the ELY-Centre and Natural Resources Institute (LUKE), amongst others (see full list below) have very important roles in producing biological information about the BR. Extensive nature inventories and monitoring programmes cover water quality, sediment quality, marine biodiversity, archipelago birds, fish and plants.

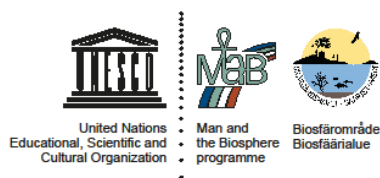
Metsähallitus Parks and Wildlife Finland carry out monitoring of protected marine and land areas in the BR. Protected species, species which are rare outside nature reserves and species which are easily disturbed or in danger from collectors get special attention. The BR's focus concentrate on the archipelago bird populations, invasive species, species in traditional landscapes and top predators in the archipelago (sea eagle, grey seal and ringed seal).

At the universities and research institutes, the focus lies on marine biogeochemistry, biology and ecology, e.g. water quality (eutrophication issues), population biology, effects of introduced species on native fauna, effects of climate change, biodiversity effects on ecosystem functioning and food web ecology. Modelling studies and studies on management issues are now becoming more usual.

The Biosphere Office has important tasks within this context, to popularise and communicate this information to the public.

#### *Metsähallitus Parks & Wildlife Finland*

Inventories and monitoring of species and habitat types, cultural heritage and land use, monitoring of habitat restoration and management effectiveness, monitoring of visitors and assessments of built property conditions. Research on protected areas carried out in cooperation with external organisations, for instance biological inventories for the inventory programme VELMU (see 4.3 and 4.5).



### ***Natural Resource Institute Finland, (LUKE)***

Monitoring and research of natural resources, including game species, fish and fisheries and natural habitats. Research in sustainable food production.

In 2015, MTT Agrifood Research Finland, Finnish Forest Research Institute, Finnish Game and Fisheries Institute and the Information Centre of the Ministry of Agriculture and Forestry were merged into Natural Resource Institute Finland.

### ***Centre for Economic Development, Transport and the Environment***

Abiotic and biotic monitoring of the state of the environment.

The Ely-Centers were established in 2010, when the tasks and services of the former Employment and Economic Centers, Regional Environmental Centers, Road Districts, State Provincial Offices' departments for transport and communications and for education and culture were merged.

### ***Åbo Akademi University***

Research in marine biology, ecology and environmental sciences, behavioural and evolutionary ecology. Field base in Korpoström, Pargas.

The research on the department of Environmental and Marine Biology is mainly focused on coastal waters and environmental problems in the Baltic Sea, where many projects are carried out on the Åland Islands and in the Archipelago Sea. Major research themes are among other things eutrophication, biodiversity, biogeography of plants and birds in archipelagos, algae and shallow bays.

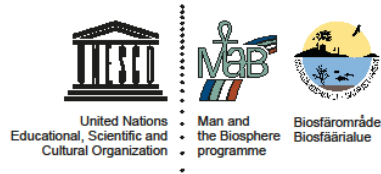
### ***University of Turku***

Research in marine biology and geology, multidisciplinary research. Archipelago Research Institute at the island of Själö, Pargas.

The focus of the Seili station, Archipelago Research Institute, University of Turku, has been on long-term monitoring of the brackish water environment (since 1966) and statistical time series modeling, supported with experimental laboratory facilities. The station is situated on Seili Island in the middle of the Archipelago Sea.

A versatile laboratory RI is being upgraded into a closed flow-through aquarium facility, allowing long-term manipulative experiments and rearing of organisms for studies of ecological interactions in close collaboration with the ecological genetics stronghold of UTU. Ecological interactions and ecological genetics research has been identified as a current area of strength at UTU.

### ***Finnish Environment Institute (SYKE)***



Environmental monitoring and research, research projects, responsible organisation for many monitoring and research programmes like VELMU (see 4.3 and 4.5).

### ***Ornithological Society of Turku***

Bird counts and monitoring for national bird monitoring programmes, research. Field base at the island of Jurmo, Pargas.

### ***Finnish Museum of Natural History***

National coordinator of bird monitoring programmes, research.

### ***National Board of Antiquities***

Documentation and inventories of cultural environments, built heritage and archaeological heritage.

### ***The Provincial Museum of Southwest Finland***

Research, documentation and inventories of cultural environments, built heritage and archaeological heritage.

### ***GTK Finland***

Geological inventories for the programme VELMU.

### **Municipalities**

Monitoring of the effectiveness of the community waste water plants

### ***WWF Finland***

Monitoring of threatened species.

### ***The Finnish Meteorological Institute - FMI***

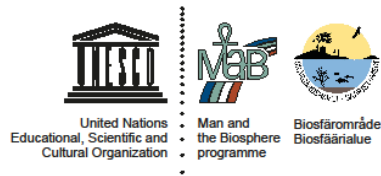
Research in marine thematics e.g. sea ice, climate change, meteorology and air quality.

## **6.2 Summarize the main themes of research and monitoring undertaken over the past ten years and the area(s) in which they were undertaken in order to address specific questions related to biosphere reserve management and for the implementation of the management plan (please refer to variables in Annex I).**

(For each specific topic provide reference citations. Provide the full citations alphabetically by lead author at the end of Section 6 or in a separate annex).

### **Research and monitoring in the BR**

The BR Office is not directly involved in any monitoring or research activities in the BR, as these tasks are carried out by many different stakeholders (see 6.1.). Below, are listed some inventory, monitoring and research efforts carried out in the BR.



The Biosphere Office, however, has other important tasks in this context. An important and continuous task is to popularise and communicate results from research and monitoring to the public. For this purpose, the BR has developed a special series of seminars: Forum for Archipelago Science, organised two times a year in the BR. The seminars have changing overall topics and different researchers are invited to give talks about their research or studies in a popularised manner.

The coordinator of the BR, or members from the Steering Group, also work with raising awareness and communicating science, giving lectures to different groups of people e.g. in schools, or as an invited speaker at seminars outside the BR. Topics are often related to the themes and goals in the BR management plan. Language issues, like translation of information into Swedish are also central to the BR, as a majority of BR inhabitants speak Swedish, but environmental information and scientific results are often published only in Finnish and English.

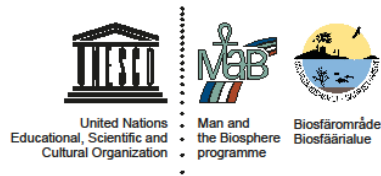
The BR also works with developing and supporting new ways of spreading information and raising awareness. Open data sources and map portals, where the public can take part in the results from inventories or research, are becoming increasingly common. Internet services where people can report on their own observations are also becoming more common. The stakeholders creating these services often do not have the time to promote them, so the BR has a central role in this task. Another example of the efforts of the BR is cooperation projects between artists and scientists.

### **Monitoring of water quality and cyanobacteria**

The state of the Baltic Sea is a great focus for the BR, as the coastal areas in the BR offer very important resources for traditional livelihoods, tourism, residents and outdoor recreation. Background data is crucial for basic research, for studies of environmental changes and for studies evaluating the effects of management efforts.

Physio-chemical water quality data from national monitoring programmes are stored in the centralized databases HERTTA, maintained by Finnish Environmental Institute (SYKE). In the database, there are marine and freshwater observations from the 1960s to the present. The data is available from the web-based “Open data” service. The data is mainly collected by the Centers for Economic Development, Transport and the Environment (ELY) and SYKE, but also by other research institutes and universities in both the public and private sector.

Mass occurrences of toxic cyanobacteria, or “blue-green algae” occur nearly every summer in the BR, as a result of human-induced eutrophication in the Baltic Sea. These events negatively affect the recreational value of the coasts and also cause many ecological problems, for example for fish and birds. Municipal environmental officials, the regional ELY-Centers and other observers submit their algae findings which have been collected at observation points to the Finnish Environment Institute. The ways of spreading the information have been developed towards online internet services. Currently, The Finnish Environment Institute compiles all information at the crowd sourced “Järvi- and Meriwiki”-homepage. On that page, the internet service “Alg@line” shows the algae situation in real-time, the measures are being derived from sensors installed on commercial vessels.



## **Marine biodiversity**

During the last decade, knowledge about marine coastal biodiversity in Finland has increased significantly, thanks to the Finnish Inventory Programme for the Underwater Marine Environment (VELMU, 2004-2014).

The Archipelago Sea is the most extensively mapped sea area in Finland, the BR having served as a pilot area for the first Finnish marine inventories. Data on underwater marine biotopes, habitats and species in Finland have been collected, analysed and compiled in a web-based map portal and are soon to be published in a Finnish marine atlas.

The results of the programme will contribute greatly to Baltic marine protection and to the sustainable use of the sea, by increasing knowledge on the spatial distribution of nature types and habitats and creating management tools. Ecological knowledge is also needed to assess the status of the marine areas by involving biological indicators, as required by the EU WFD and the EU MSFD.

Within the programme, several inventory, monitoring and research projects have been carried out in the Archipelago Sea Area BR, some of which are mentioned below. Metsähallitus Parks & Wildlife Finland and the ELY-Centre have conducted the main part of the inventories. Additionally, the Geological Survey of Finland, Natural Resources Institute Finland and the Finnish Environment Institute have carried out inventories in their respective fields of activities. The universities were responsible for the research parts and at the moment three PhD-theses have been finalized. The role of the BR, has especially been to act as a link between the project managers and the municipalities, in order to ensure that results are utilised in municipal land use planning.

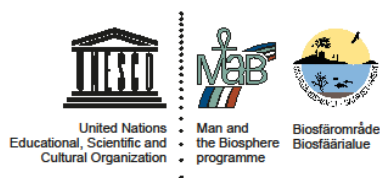
During the SVELIN-project (Underwater Species Inventory of the Archipelago Sea Area, 2004-2006) new inventory methods were developed and tested.

During the BALANCE-project (Baltic Sea management – Nature Conservation and Sustainable Development in the Marine Ecosystem through Spatial Planning, 2005-2007), spatial planning of the Baltic Sea Region was developed by merging data on marine landscapes, habitat distribution, economic values and conservation status.

Within the FINMARINET-project (Inventory and planning for the Finnish marine NATURA 2000 network, 2009-2013) the distribution of underwater habitats and species were mapped and modelled and the marine Natura 2000 -network evaluated.

The project MARMONI – (Innovative approaches for marine biodiversity monitoring and assessment of conservation status of nature values in the Baltic Sea, 2010-2015), developed and tested monitoring and assessment techniques for marine biodiversity.

The project NANNUT, Nature and Nurture of the Northern Baltic Sea (2009-2012), focused on stakeholder seminars about marine biodiversity both for local politicians and other main target groups such as planners. In addition, the project focused on public outreach activities such as films and a web portal.



## References:

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Balance publications: <http://balance-eu.org/publications/index.html>

Rinne, H. 2014. Macroalgae across environmental gradients: tools for managing rocky coastal areas of the northern Baltic Sea. PhD-thesis, Åbo Akademi University.

## **Monitoring and research in population biology**

### **Fish and game**

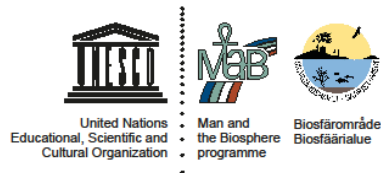
Research data and population estimates for the management of fisheries are produced by the Fisheries Research Unit of LUKE, to promote the sustainable use of fish resources and improve fishing conditions. Official fisheries and game statistics have been available since the 1970s, including both commercial and recreational fisheries. The fish stock assessments are based on catch statistics and catch samples from commercial fisheries and are produced annually by sea areas for the use of ICES. The monitoring of fish stock conducted by LUKE is also based on “test fishing” conducted by stakeholders at several spots in the region. In the Archipelago Sea area, LUKE has also been focusing on developing of methods to assess fishing resources and research about the restocking of salmon populations and the effects of eutrophication of coastal waters on fish populations.

Information on wildlife populations and their habitats is gathered by the Game Research Unit of LUKE, in order to acquire a better understanding of the processes regulating their numbers and achieving sustainable use of wildlife populations and their habitats. In the Archipelago Sea, focus lies on monitoring the size of the stocks of grey seals and game birds.

The Baltic herring is one of the most important fish species in the Baltic Sea, both ecologically and economically. There have been several scientific and monitoring projects on Baltic herring carried out in the Archipelago Sea area. Intensive research on the reproductive biology of Baltic herring at the Archipelago Research Institute has been ongoing since the beginning of the 1980's. The data is based on field sampling of the spawning fish and direct monitoring of the spawning beds by scuba diving. The data has for example revealed that the size of the Baltic herring has decreased significantly. During this long-term survey, the environmental conditions of the spawning area have changed considerably, e.g. due to eutrophication and decreasing salinity of the Baltic Sea. The Archipelago Research Institute has also focused on studies of fish reproduction areas and inventories of sea bottom anoxia.

## References:

Rajasilta, M. et.al. 2006. Intensive monitoring of spawning populations of the Baltic herring (*Clupea harengus membras* L.). Final report of the study project ref. No 96-068, 1997-1999. ISBN 951-29-3047-1. <http://www.utu.fi/fi/yksikot/tyyk/saaristomeren-tutkimuslaitos/tutkimus/Documents/seili3.pdf>



Kohonen, T., Helminen, U., Vahteri, P., Virtasalo, J. & Vuorinen, I. 2003. Methods for assessing the state of fish reproduction areas in the Archipelago Sea, SW Finland. In: 2003 ICES ASC Handbook. Contributions. Agendas and Orders of the Day. Abstracts. 2003 Annual Science Conference, 24-27 September 2003. Tallinn, Estonia, 144.

Virtasalo, J., Kohonen, T., Vuorinen, I. & Huttula, T. 2003. Sea bottom anoxia in the Archipelago Sea, SW Finland. Hydrological features and sedimentary phosphorus forms & iron hydroxides. In: Bäck, S., Harjankoski, R., Koivu, J., Toivanen, R. & Viitasalo, I. (Eds.). Abstract Publication. Baltic Sea Science Congress 2003 Helsinki, Finland, August 24-28, 2003, 104.

Link to Publications of LUKE: <https://www.luke.fi/en/publications-archive/>

### **Environmental change in the Baltic Sea**

Effects of eutrophication, the biggest single threat to the Baltic Sea environment, has been an important focus for research in the area. There are numerous research projects working on the effects of eutrophication on e.g. plankton, benthic invertebrate fauna, submerged aquatic vegetation and fish.

ÅAU is currently part of the EU-project COCOA, where consequences of altered nutrient pathways on coastal ecosystem services are assessed in order to identify effective management strategies.

Studies of the effects of climate change have increased during the last decade. There have been many important studies for example on birds and fish in the Archipelago Sea.

University of Turku is currently part of several EU-projects concerning climate change. BAMBI, that studies the potential of adaptation to climate change and AMBER, which develops ways to apply the Ecosystem Approach to Management (EAM) on the Baltic Sea with a focus on the coastal ecosystems. The Archipelago Research Center has studied the TBT in coastal sediments and the effects of erosion caused by the shipping traffic affecting the spawning success of fish.

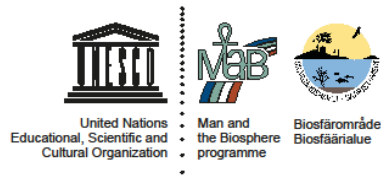
LUKE and ELY-center have both had many research/development-projects on how to reduce inflow of nutrients from land, mainly agriculture, by methods such as wetlands or other nutrient traps or fishing as a nutrient remover.

### **References:**

Niemelä, Marika. 2012. Animals to shore - Yes or No? A guide to sustainable grazing on shore. Natureship Publications.  
<http://www.doria.fi/bitstream/handle/10024/87707/Animals%20to%20the%20shore.pdf?sequence=3>

Kohonen, T. et.al. 2003. Tributyltin in coastal sediments and the Baltic clam, *Macoma balthica*, in the Archipelago Sea, SW Finland. In: Bäck, S., Harjankoski, R., Koivu, J., Toivanen, R. & Viitasalo, I. (Eds.). Abstract Publication. Baltic Sea Science Congress 2003 Helsinki, Finland, August 24-28, 2003, 101.

Vahteri, P., Kohonen, T. & Vuorinen, I. 2003. Distributional changes in the occurrence of bladderwrack, *Fucus vesiculosus* (L.) within the last decade in the Archipelago Sea, S-W



Finland. In: Bäck, S., Harjunkoski, R., Koivu, J., Toivanen, R. & Viitasalo, I. (Eds.). Abstract Publication. Baltic Sea Science Congress 2003 Helsinki, Finland, August 24-28, 2003, 262-263.

Rytkönen, J. & Kohonen, T. 2002. Environmental Impacts of Ship-Induced Waves and Flows in the Archipelago Sea. The 30th Congress of the International Navigation Association (PIANC), 22 - 26 September 2002. Sydney, Australia.

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### **Archipelago birds**

Birds can be used as biological and ecological indicators of ecosystem health, ecosystem changes, and human-induced environmental effects. Coastal birds may be used as indicators of several aspects of the marine environment. Bird monitoring generates invaluable material for research, and collection of data is mostly the work of volunteer birdwatchers. Monitoring is performed by the Natural History Museum in collaboration with BirdLife Finland. BirdLife Finland gathers data from regional ornithological societies, for example the Turku Ornithological Society with its field base at Jurmo Island in the BR.

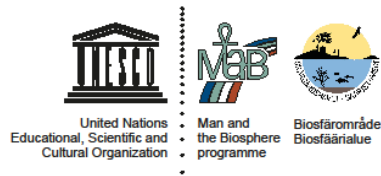
An exceptionally long-term monitoring site of archipelago birds is situated in the vicinity of the BR, at the island of Aasla, Naantali. The Archipelago bird census of Dr. Lennart Saari at UTU, covers 40 years (1975-2015). The waterfowl censuses consist of a combination of points and rounds counts. The same method has been used every year and waterfowl counts have been performed nine times per year.

The Finnish bird monitoring scheme has many national and international study projects. The monitoring data is also used for example in the European Bird Census Council's (EBCC) various projects, e.g. in the assessment of Pan-European Common Bird Indices and in assessments of Important Bird and Biodiversity Areas (IBAs), that are carried out at regular intervals. There are two IBAs in the BR: Öro-Bengtskär and the Southern archipelago of Korpo-Nagu. Metsähallitus has been monitoring breeding archipelago birds in four monitoring areas since the 1990's. Of singular species, special attention has been on the white-tailed sea eagle which has been monitored by the WWF Finland for more than 40 years.

### **References:**

Rönkä, M. et al. 2008: Breeding habitat preferences of 15 bird species on south-western Finnish archipelago coast: The applicability of existing digital spatial data archives to habitat assessment. *Biological Conservation* 141(2): 403-417.

Rönkä, Mia. 2005. Environmental changes and population trends of breeding waterfowl in northern Baltic Sea. *Ann. Zool. Fennici* 42: 587-602.



[https://www.researchgate.net/publication/228624713\\_Environmental\\_changes\\_and\\_population\\_trends\\_of\\_breeding\\_waterfowl\\_in\\_northern\\_Baltic\\_Sea](https://www.researchgate.net/publication/228624713_Environmental_changes_and_population_trends_of_breeding_waterfowl_in_northern_Baltic_Sea)

### **Archipelago flora**

The monitoring of changes in the flora has been conducted since the 1950s by Ole Eklund. Mikael Von Numers (ÅAU) has continued the work of Ole Eklund and showed interesting long-term changes in the flora.

#### **References:**

Hannus, J.-J. & Von Numers, M. 2010. Temporal changes in the island flora at different scales in the archipelago of SW Finland. *Journal of Applied Vegetation Science* 13: 531-545.

Hannus, J.-J. & von Numers, M 2008. The vascular plant richness in two archipelago-areas in SW Finland in relation to habitat diversity and island area. *Journal of Biogeography* 35: 1077 - 1086.  
von Numers, M. 2011. Sea shore plants of the SW archipelago of Finland - distribution patterns and long term changes during the 20th century. *Annales Botanici Fennica* 48 Suppl. A. 46 pp.

von Numers, M. & Korvenpää, T. 2007: 20th century vegetation changes in an island archipelago, SW Finland - *Ecography* 30: 789-800 + supplementary data.

### **Traditional landscapes**

Metsähallitus is continuously monitoring the effects of management efforts of the cultural landscapes. The methods and new guidelines are developed.

#### **References:**

Mussaari, M. et al. Management guidelines for semi-natural landscapes -Integrating historical perspectives and GIS into planning process. University of Turku and Metsähallitus. Natureship Publications. <http://www.ymparisto.fi/download/noname/%7BB27B645A-418F-4137-8B36-799770174318%7D/55568>

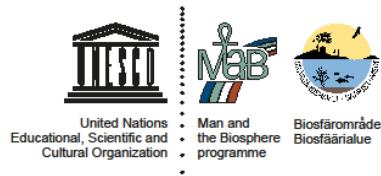
### **Sea grass research**

Studies on the sea grass communities e.g. the endangered eelgrass *Zostera marina* at the University of Åbo Akademi is a growing research area in the Archipelago Sea. In the project CAA, Contemporary art in Archipelago, ways for cooperation between artists and scientists have been developed (See 2.3.7). ÅAU has started a cooperation project with WWF to raise awareness among the public about this important species and the threats to it.

#### **References:**

**Publications:** <http://www.abo.fi/student/en/Content/Document/document/9028>

GAGNON, K & BOSTRÖM C. 2016. Habitat expansion of the mud crab *Rhithropanopeus harrisi* (Gould, 1841) in the northern Baltic Sea: potential consequences for the eelgrass



(*Zostera marina*) food web. *BioInvasions Records Volume 5, Issue 2: 101–106* DOI: <http://dx.doi.org/10.3391/bir.2016.5.2.07>

OLSEN JL et.al. 2016. The genome of the seagrass *Zostera marina* reveals angiosperm adaptation to the sea. *Nature* Vol. 531, No. 7589.

DUFFY JE et.al. 2015. Biodiversity mediates top–down control in eelgrass ecosystems: a global comparative-experimental approach. *Ecol. Lett.* Vol 18, Issue 7, pp 696–705, SALO T, REUSCH TBH, BOSTRÖM C 2015 Genotype-specific responses to light stress in eelgrass (*Zostera marina*), a marine foundation plant. *Mar Ecol Prog Ser* 519: 129-140.

GUSTAFSSON C & BOSTRÖM C. 2014. Algal mats reduce eelgrass (*Zostera marina* L.) growth in mixed and monospecific meadows. *J Exp Mar Biol Ecol* 461:85-92. DOI: 10.1016/j.jembe.2014.07.020.

BOSTRÖM C et.al. 2014. Distribution, structure and function of Nordic seagrass ecosystems: implications for coastal management and conservation. *Aquatic Conservation Marine and Freshwater Ecosystems*.

GUSTAFSSON C & BOSTRÖM C. 2013 Influence of neighboring plants on shading stress resistance and recovery of eelgrass, *Zostera marina* L. PLOS ONE, Vo. 8 Issue 5.

DOWNIE A-L, V NUMERS M & BOSTRÖM C. 2013. Influence of model selection on the predicted distribution of the seagrass *Zostera marina*. *Estuarine Coastal and Shelf Science* 121–122: 8–19.

BERGSTRÖM, U. et al. 2013. Evaluating eutrophication management scenarios in the Baltic Sea using species distribution modelling. *Journal of Applied Ecology* doi: 10.1111/1365-2664.12083.

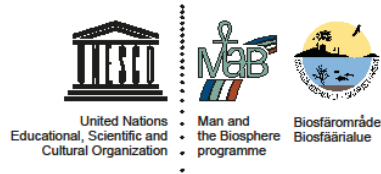
ARPONEN H, & BOSTRÖM C. 2011. Responses of mobile epifauna to small scale seagrass patchiness: is fragmentation important. *Hydrobiologia* 680: 1-10.

GUSTAFSSON C & BOSTRÖM C. 2010. Biodiversity influence ecosystem functioning in aquatic angiosperm communities. *Oikos*.

SALO, T., GUSTAFSSON, C, BOSTRÖM, C. 2009. Effects of plant diversity on primary production and species interactions in a brackish water seagrass community. *Mar Ecol Prog Ser* 396: 261-272.

GUSTAFSSON C & BOSTRÖM C. 2009. Effects of plant species richness and composition on epifaunal colonization in brackish water angiosperm communities. *J Exp Mar Biol Ecol* 382: 8-17.

BOSTRÖM, C. et.al. 2006. Environmental variables explaining structural and functional diversity of seagrass macrofauna in an archipelago landscape. *Journal of Experimental Marine Biology and Ecology* 335: 52-73.



## **Research and monitoring on invasive species**

The distribution and population demography of the most northern known population of the North American whitefingered mud crab, *Rhithropanopeus harrisi*, from southwest Finland in the Baltic Sea. This species was first reported in Finland in 2009 from the archipelago close to Turku. *R. harrisi* has established successful populations that are able to overwinter under ice and is expected to expand its range along the coast of the northern Baltic Sea. The ultimate impact of this species on food web dynamics, both as a predator and prey item, remains to be seen. Effects of eradication of the alien American mink on birds, small mammals and amphibians has been studied by the University of Turku.

The BR have taken part in two projects on harmful invasive plants run by the regional ELY-Centre. During these project, the distribution of the species Giant hogweed (*Heracleum mantegazzianum*), Rugosa rose (*Rosa rugosa*) and Himalayan balsam (*Impatiens glandulifera*) were mapped and several workshops and lectures were arranged. Garden- and land-owners were taught how to identify, prevent the spread and safely combat these highly invasive plants. Metsähallitus works continuously with eradicating invasive plants in the NP and other protected areas.

### **References:**

Amy E. Fowler et.al. 2013. The North American mud crab *Rhithropanopeus harrisi* (Gould, 1841) in newly colonized Northern Baltic Sea: distribution and ecology. Aquatic invasions, vol.8.

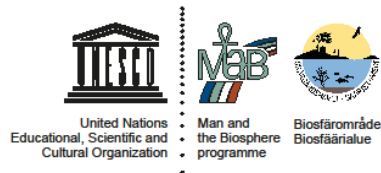
Ikonen, I., Kekki, M. & Räikkönen, N. 2009: Jättiputki ja kurturuusu kuriin Lounais-Suomessa. (Take control over the distribution of the Giant hogweed (*Heracleum mantegazzianum*) and the Rugosa rose (*Rosa rugosa*) in Southwest Finland) Lounais-Suomen ympäristökeskuksen raportteja 15, 83 s.

### **Integrated management**

There are many agreements and legislations steering the management of European coastal seas, for example the Baltic Sea Action Plan and the Marine Strategy Framework Directive. These initiatives emphasize actions and the need for integrating ecological and socio-economic systems. There are still methodological challenges, for example how to detect and evaluate human impacts, and how to achieve integrated planning.

The PREHAB (2009-2011) project, where the Åbo Akademi University was a partner, developed scientifically based advice for ecological mapping and economic valuation of coastal benthic habitats. The project showed how mapping and scenario modelling can be used as a tool to assess the economic benefits from management actions such as the Baltic Sea Action Plan.

The University of Turku has been involved from the beginning in ICZM (Integrated Coastal Zone Management), when the concept was first introduced to Finland and the Archipelago Sea was the first archipelago area to get a strategy for sustainable use. The results of VELMU and different projects connected to VELMU, are crucial for further ICZM strategies and plans



The development-project Coastal Sustainability as a Challenge (2005 – 2007) had as a main goal to strengthen cooperation between the coastal protected areas in the Baltic Sea Region. With the help of local pilot activities, new models were found for sustainable use of coastal protected areas and for improving communication between protected areas and surrounding societies. As most of the coastal areas have similar problems regarding environmental issues and maintaining sustainable livelihoods, many useful experiences could be shared during the project.

COEXIST was a multinational, interdisciplinary EU-funded project in 2011-13. In Finland the project evaluated competing activities and interactions with focus on fishing and aquaculture industries, using the Archipelago Sea Area as a case area, with the ultimate goal to provide a roadmap for improved integration, sustainability and synergies across the diverse activities taking place in the Baltic coastal zone.

### **References:**

Stellzenmuller, V et.al. 2013. Guidance on better integration Aquaculture, Fisheries, and Other Activities of Coastal Zone: from tools to practical example. COEXIST-project.

<http://www.coexistproject.eu/coexist-results/best-practices-guidelines>

Grönholm Sam and Berghäll Jonna. 2007. Cooperation between Coastal Protected Areas and Surrounding Societies: from experiences to recommendations. Nature Protection Publications of Metsähallitus. Series A 169.

### **Ecosystem services (research)**

In University of Turku, there is ongoing research of ecosystem services in the BR. The aims of the research project ES-Luppi (see 3.1.) are to study the role of biodiversity and biotopes for ecosystem services and evaluate how ecosystem services are covered by current means of nature protection and how their integration in environmental management could improve conservation. The new tools provided from this project will help to place the ecosystem services and biodiversity into a better consideration for the management of the BR area.

### **References:**

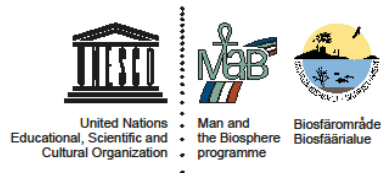
Viirret et al. 2015 (manuscript)

Mankinen, Ulpu. 2015. Saaristomeren maiseman karakterisointi maisemantason monimuotoisuuden näkökulmasta. (Landscape character assessment of the Finnish Archipelago Sea area using the perspective of landscape-level diversity) Summary in English. Master's thesis. Department of University of Turku.

Mononen et al. 2015. National ecosystem service indicators: Measures of social–ecological sustainability. Ecological Indicators 2375. <http://dx.doi.org/10.1016/j.ecolind.2015.03.041>

Lindgarth, M. et.al. 2014. Testing the potential for predictive modeling and mapping and extending its use as a tool for evaluating management scenarios and economic valuation in the Baltic Sea (PREHAB). Ambio 43: 82-93.

### **Monitoring of management effectiveness**



A comprehensive management effectiveness evaluation of Finland's protected areas was published in 2005. The Archipelago National Park was included in the study, which was conducted within the IUCN World Commission of Protected Areas (WCPA) framework.

### **References:**

Gilligan et al. (2005) Management Effectiveness Evaluation of Finland's Protected Areas. Nature Protection Publications of Metsähallitus, Series A 147.

### **Multidisciplinary research**

Socio-economic research performed in the BR includes studies on environmental history, environmental governance, and ethnology.

During the RISKGOV-project (2009-2011), ÅAU worked with understanding structures and processes preparing the governance for environmental risks. The outcomes were suggestions for possible ways on how to improve environmental risk governance in the Baltic Sea.

Social, economic and aquaculture production research linked with fisheries and game husbandry is carried out by the Natural Resources Institute (LUKE).

INTERARC-project in ÅAU. Study of socio-economic and ecological conflicts in the archipelago environment.

Multidisciplinary biodiversity studies in the Archipelago Sea involved both the Archipelago Research Institute and ÅAU. Cross-analysis of the Baltic Sea and the Lake Saimaa in Finland (AquaValue -projekt/FIBRE). The effect of eutrophication on the aquatic biodiversity and their sociological importance at Saimaa and the Archipelago Sea.

Studies about Ixodes ticks and the tick-borne diseases, which are a growing problem in the Archipelago Sea Area at the Archipelago Research institute.

### **References:**

RISKGOV Final report (2012) Environmental Risk Governance of the Baltic Sea (RISKGOV). [http://www.bonusportal.org/files/1601/RISKGOV\\_Final\\_Report.pdf](http://www.bonusportal.org/files/1601/RISKGOV_Final_Report.pdf)

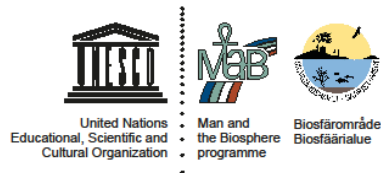
Bonsdorff, Erik, Hagman, Patrik, Joas, Marko, Kurtén, Tage, Vikström,

Björn (red.). 2011. Konflikter i skärgårdsmiljön. Biologiska, etiska och samhälleliga

perspektiv på Åbolands skärgård. Åbo: Åbo Akademis förlag.

Näsman, Minna. 2011 Livsåskådningarnas roll i miljökonflikter. (The impact of life views in environmental conflicts) Summary in English. Doctoral dissertation. University of Åbo Akademi.

Link to Publications of LUKE: <https://www.luke.fi/en/publications-archive/>



### **Studies in social sciences and public affairs**

There have not been very many studies conducted concerning the people and the society of the archipelago today. Studies have focused on issues like migration and the role of the local identity.

#### **References:**

Grönholm, Sam. 2005. Migrationsrörelser i Åbolands Skärgård – en studie av två kommuner. (Migration trends in Åboland Archipelago – a study of two municipalities). Department of Public Administration. University of Åbo Akademi.

Siivonen, Katriina. 2008 Saaristoidentiteetit merkkien virtoina. *Varisnaisuomalainen arki ja aluekehitystyö globalisaation murroksessa*. (Archipelago Identities as streams of signs. *Everyday life and local development in Southwest Finland as part of global transition*). Summary in English. Kansatiteellinen arkisto 51.

### **Monitoring of nature tourism and economic benefits**

Visitor numbers are continuously monitored in the National Park and visitor surveys are carried out at regular intervals, the latest ones published in 2008 and 2014. A harbour survey was published in 2008 and a study on the effects of nature tourism in the National Park on the local economy was published in 2005. These studies served as important background material for the creation of the Strategy for Nature Tourism, as well as being vital for further development of sustainable nature- and culture tourism in the BR.

#### **References:**

Heinonen, Matias. 2016. Saaristomeren kansallispuiston kävijätutkimus 2014. (Survey of Visitors of Archipelago National Park) Nature Protection Publications of Metsähallitus Series B223.

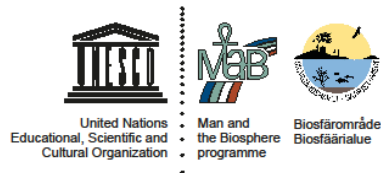
Mäki, Sarlin. 2009. Saaristomeren kansallispuiston satamatutkimus. (Harbour survey of Archipelago National Park). Archive of Metsähallitus.

Mäki Sini, Aaltonen Anne. 2008. Saaristomeren kansallispuiston kävijätutkimus. (Survey of Visitors of Archipelago National Park). Summary in English. Nature Protection Publications of Metsähallitus. Series B113.

Mäki, Sini, Aaltonen Anne. 2008. Saaristomeren kansallispuiston yritystutkimus 2008. (Entrepreneur survey of the Archipelago National Park 2008) Summary in English. Nature Protection Publications of Metsähallitus Series B 114.

Berghäll, J. 2005. Saaristomeren kansallispuiston luontomatkailun aluetaloudelliset vaikutukset (Local Economical Influences of Tourism of Archipelago National Park). Nature Protection Publications of Metsähallitus. Series A 153.

<http://julkaisut.metsa.fi/assets/pdf/lp/Asarja/a153.pdf>



**6.3 Describe how traditional and local knowledge and knowledge from relating to management practices have been collected, synthesized and disseminated. Explain how such knowledge is being applied to new management practices, and how and if it has been integrated into training and educational programmes.**

After the National Park was founded and the management planning of the overgrown species-rich cultural habitats was taken over by Metsähallitus, interviews were made with people that had a good knowledge of management traditions in the archipelago. Based on traditional knowledge, new experiences and scientific research, methods for the management of the valuable cultural biotopes within the Archipelago National Park and the Archipelago Sea Biosphere Reserve have developed. The staff of Metsähallitus has been trained in landscape management. In cooperation with the BR Office entrepreneurs in the archipelago have also received education in landscape management. These could later be hired by the National Park for the management of the National Park areas. About 20 people participated in the training. The knowledge has been gathered over many years and has also been used for educational purposes at the The Livia College of Fisheries and Environment. The staff of Metsähallitus has continued to develop its methods. In 2015, they visited the Biosphere Reserve candidate Nordhordland to learn more about traditional cultural management by burning.

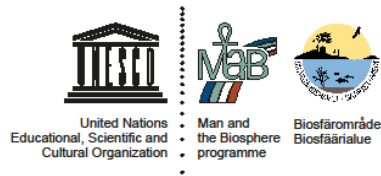
State authorities cooperate with hunters and fishermen in monitoring animal populations of commercial value. Based on catch statistics, the population sizes are estimated and the annual fishing quota is calculated.

**6.4 Environmental/sustainability education. Which are the main educational institutions (“formal” – schools, colleges, universities, and “informal” services for the general public) that are active in the biosphere reserve? Describe their programmes, including special school or adult education programmes, as these contribute towards the functions of the biosphere reserve. Comment on organizational changes (if any) in institutions and programmes that were identified in the biosphere reserve ten or so years ago (e.g. closed down, redesigned, new initiatives). Refer to programmes and initiatives of UNESCO Associated Schools networks, UNESCO Chairs and Centers where applicable.**

We present a list of the main education institutions and the programmes relating to the biosphere activities:

**Education provided by the biosphere reserve**

A central task of the biosphere reserve is to support environmental and sustainability education in the area. The BR Office provides such education on its own, but also acts as a link between universities, research institutes and the general public. Own activities include giving talks about archipelago nature, wildlife and culture, sustainable development and regional development to different groups of people – for example at schools, seminars and meetings. The continuous project Biosphere goes to school (see 2.4.9), is a good example of such activities. Environmental education in nurseries has been realized through projects, most recently by creating the mascots “Gäddan och gänget” (transl. the Pike and its friends), who yearly introduce a new theme for the



nursery to work on, for example recycling or clean water issues (see 5.10). Through projects the BR Office also strives to reach completely new target groups. A way of bridging the gap between researchers and the general public, is the regular seminars arranged by the BR Office, often in cooperation with the Archipelago Institute at ÅA. Every year between 2 and 4 seminars are arranged in the BR, presenting researchers from the universities to popularise scientific findings and activating people to discuss current subjects.

### **Education provided by other actors**

Within or in direct connection with the BR, there are 13 Primary, 9 Secondary Schools and 3 Upper Secondary Schools. In Finland, the programme *Eco-Schools* is run under the name “Vihreä lippu” (transl. *Green Flag*) by the Association for Environmental Education in Finland. The programme is available for Finnish kindergartens, schools and trade schools. Two schools and one kindergarten in the vicinity, but outside the BR, participate in the programme. The privately run *Archipelago Sea Nature School* offers environmental education for schools, either as separate school days or as longer summer camps.

Vocational training institutes in the area are *Livia College* and *Axxell*. Livia College specialises in education and training for the land-based as well as the social and welfare industries. The programme Fishery and Environment are taught both in Finnish and Swedish. Axxell offers the programmes Rural studies in Kimitoön and Tourism studies in Pargas.

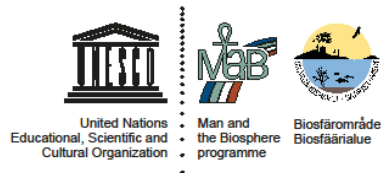
The BR has no visitor centre of its own, but works closely with the two visitor centers in the area. The **Nature Centre Blue Mussel** in Kimitoön, administered by the Park & Forest Services, provides information on the Archipelago National Park and the South western Finnish Archipelago in general. The Nature Centre hosts permanent and changing exhibitions, informs about nature, culture and recreational opportunities, provides guided tours, multimedia shows and different events for visitors and local people. Web-based education and information is becoming increasingly popular. The national web sites of the Park and Forest Services are [Outdoors.fi](http://Outdoors.fi), provides basic information also on the Archipelago National Park and current issues there. The Park & Forest Services also provides other forms of education, e.g. short courses for entrepreneurs, guides and voluntary workers.

**Korpoström Archipelago Centre** is a venue where science, art and culture intertwine. The BR is actively involved in the activities at the center, as are many of the collaborators of the BR. The center is therefore a place where many cooperation projects are realised. Activities at the center include marine science, management of the national park, traditional handicrafts, art exhibitions and seminars. In 2016, an educational corner for children to discover marine sciences, was opened as a cooperation project with the BR Office.



© Malin Ekblom

The Children's University, organised by the University of Turku (UTU) inspires children to engage in science and research. The university organises science lectures and science workshops in spring and science camps in the summer. At the summer camps, which are held at the Archipelago Research Institute located in the BR, children have the opportunity to being the scientists and doing hands-on experiments.



## Higher education

Both **Åbo Akademi University (ÅAU)** and **University of Turku (UTU)** offer Bachelor, Msc and Doctoral programmes in biology and environmental studies. Sustainability studies at both universities are offered as multidisciplinary minor subjects.

ÅAU programme *Marine and Environmental biology* is tightly linked to BR through ÅAU membership in the BR steering group and through the location of ÅAU field station Korpoström in the BR. A part of the ÅAU courses are arranged by the *Open University at ÅAU* and are open to the public. The ÅAU Open University also offers *Archipelago Studies*, covering especially important themes from a biosphere reserve perspective. ÅAU is also the Finnish National Centre of BUP (*Baltic University Programme*). BUP focuses on sustainable development, environmental protection and democracy in the Baltic Sea region. *The Centre for Lifelong Learning at ÅAU* provides in-service training for organisations and especially for teachers. A *Resource Centre for nature, environment and technology* is situated in Turku and the BR has been actively collaborating with this institute. The *UAS of ÅAU* offers several programmes in environmental and sustainability studies, however not at campuses in the vicinity of the BR.

Also a member of the BR steering group, **University of Turku** offers the programme *Ecology and Evolutionary biology*, which arranges field courses at the Archipelago Research Institute, located in the BR. The Faculty of Humanities of UTU, on the other hand, coordinates the interdisciplinary programme *Baltic Sea Region Studies*, a two-year international Master's programme. Furthermore, Finland Futures Research Centre offers a two-year *Master's Degree Programme in Futures Studies* together with the Turku School of Economics at the University of Turku. Additionally, the University of Applied Sciences at University Of Turku offers a *Bachelor programme in Sustainable Development*.

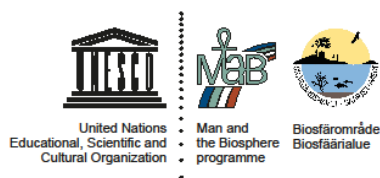
### 6.5 How do you assess the effectiveness of actions or strategies applied?

(Describe the methods, indicators).

BR Office works according to a work plan, the WP is evaluated after each year in the annual report that is approved by the Steering Committee. In the Annual report the outcome of the plan is evaluated. Qualitative indicators are more frequently used than quantitative indicators. The quantitative indicators are for example showing how many events, participants, initiated projects, visitors at exhibitions etc. But the role of the BR Office in arranging events or starting up projects can vary a lot, which makes the qualitative indicators more relevant.

#### 6.5.1 Describe the biosphere reserve's main internal and external communication mechanisms/systems

There is no communication strategy yet, but the communication mechanisms are described in every action plan. The BR Office has many tools for communication. Internal communication is handled mainly by e-mail. External communication channels are flags and information boards, which are now used at 12 sites in the area, information in tourist brochures, a BR brochure, social



media like FB and Twitter, a home page and a newsletter twice a year (hard copy and e-copy). The BR has had its own logo since 2012 which is used to mark out the activities of the BR. Local media like newspapers and radio channels are used to reach a broader public.

**6.5.2 Is there a biosphere reserve website? If so, provide the link.**

[www.archipelagoseabiospherereserve.fi](http://www.archipelagoseabiospherereserve.fi)

**6.5.3 Is there an electronic newsletter? How often is it published? (provide the link, if applicable).**

An electronic newsletter is published twice a year in Swedish and in Finnish. It is available on the homepage, **Nyhetsblad:** <http://www.skargardshavetsbiosfaromrade.fi/material-3/dokument-2/>

**6.5.4 Does the biosphere reserve belong to a social network (Facebook, Twitter, etc.)? Provide the contact.**

Facebook: ArchipealgoBiosphere, Twitter: ArchipelagoBiosphere

**6.5.5 Are there any other internal communication systems? If so, describe them.**

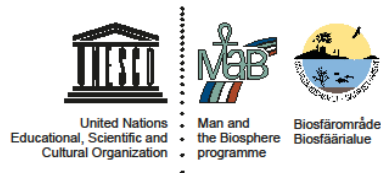
The internal communication happens by email and meetings.

**6.6 Describe how the biosphere reserve currently contributes to the World Network of Biosphere Reserves and/or could do so in the future.**

The coordinator of the Archipelago Sea BR is co-leading the NordMAB network together with Manicouagan-Uapishka BR. Finland is also currently a member of the EuroMAB Steering Committee (2015-2017). The task is shared between Northern Karelia BR and Archipelago Sea Area BR. Furthermore; the BR is active with the Island and Coastal Biospheres network. The coordinator actively participates in conferences and shares the best practices with other BR. In addition, the Archipelago Sea Area BR has organised 4 international BR meetings (in EuroMAB 1998, Coastal and Island BR Network 2003, NordMAB 2007, NordMAB 2014).

**6.6.1 Describe any collaboration with existing biosphere reserves at national, regional, and international levels, also within regional and bilateral agreements.**

Common projects have been carried out with BRs of North-Carelia/Finland, North-Vidzeme /Latvia and Western Estonian Archipelago/Estonia. We have also collaborated with Cat Ba BR in Vietnam on sustainable tourism. At several occasions ASABR have shared knowledge and the best practices with different BRs of Sweden. We have been supporting a few new BRs in their planning process: Nedre Dal älven/Sweden, Blekinge Archipelag/Sweden, Nordhordland/Norway and Päijänne Lake district/Finland.



### **6.6.2 What are the current and expected benefits of international cooperation for the biosphere reserve?**

The networks are very important for any single biosphere reserve, and especially important in Finland as there are only two BRs, so national network is small. Local actors benefit from being part of a larger network, the network brings support and motivation.

### **6.6.3 How do you intend to contribute to the World Network of Biosphere Reserves in the future and to the Regional and Thematic Networks?**

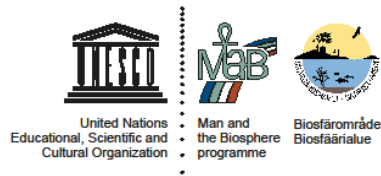
We want to improve our communication to reach a broader international public, by producing more material information in English. We hope to find other interesting collaboration partners and to be included in projects that may also involve local target groups, as with earlier projects i.e. Coastal Sustainability as a challenge (see 2.4.8). We want to use the global network for being inspired and inspire others by sharing best practices. We continue to be actively involved in developing the EuroMAB, NordMAB and Coastal and Island BR networks.

### **6.7 What are the main factors that influenced (positively or negatively) the success of activities contributing to the logistic support function? Given the experiences and lessons learned in the past ten years, what new strategies or approaches will be favored as being most effective?**

The BR Office has put a lot of effort into **enhancing the visibility** of the BR. Communication has been broadened and improved with an electronic newsletter, a new website and through social media. We have also introduced a new logo (2012) and a BR flag and information boards at 12 sites in the BR (2014). We have included more stakeholders and target groups and improved our communication within these networks. Involving local entrepreneurs has been proved effective and we will continue with that approach.

**The cooperation with schools and nurseries** is very important for opening the concept of the Biosphere Reserve for local people and for enhancing sustainable development. The young people are growing up with their own relationship to the ASABR. We have, since 2008 consistently arranged activities with the 7<sup>th</sup> grade in all the schools in the BR (Biosphere in the school) (see 2.4.9) and since 2013 with the nurseries in Pargas (Gäddan och gänget) (see 5.10).

The cooperation with artists has had a rewarding affect for improved communication. In connection with the year of the European Capital of Culture in Turku (in 2011) an interesting art project was organized in the archipelago. *Contemporary Art Archipelago*, an exhibition across the isles could be accessed from cruise ships and small boats, along the roads and virtually, even to a remote islet, at the sea, on the airwaves, on the ferries or even in a private home. The theme was the archipelago and its future as a unique yet changing environment and mode of life. The BR Office was consulted on many issues concerning the balance between Man and nature and all of the artists were working with issues of relevance for the BR. The project demonstrated an interesting approach for cooperation with artists to promote sustainable development and show the natural and cultural values of the region. (see 2.3.7).



The logistical function for supporting the research has mainly been to **popularize the research and give a forum for communication** between the researches and the local stakeholders. Two concepts for yearly meetings concerning communication and sharing knowledge has been established in connection with the BR: the Archipelago Sea winter meeting (since 2010), Forum for Archipelago Research twice a year (since 2008). Additionally there is a magazine Tidskriften Skärgård that also works as a forum for important issues concerning natural and cultural heritage in archipelagos. The BR has an important role of being a neutral arena for sharing knowledge, both traditional and scientific. The BR has together with experts and researches developed two mobile exhibitions that are lent to different localities and events.

Research projects with a direct connection to the BR have not been started up lately because of the small resources of the BR Office. We have focused more on development projects which of course might often include a research aspect.

#### **6.8 Other comments/observations from a biosphere reserve perspective.**

Most of the research and monitoring is connected to the national park and there are governmental authorities or other organizations responsible for them. The BR Office is focusing more on enhancing multi-disciplinary research including both nature and society aspects.

### **7. GOVERNANCE, BIOSPHERE RESERVE MANAGEMENT AND COORDINATION:**

[Biosphere reserve coordination/management coordinators/managers have to work within extensive overlays of government bodies, business enterprises, and a “civil society” mix of non-governmental organizations and community groups. These collectively constitute the structures of governance for the area of the biosphere reserve. Success in carrying out the functions of a biosphere reserve can be crucially dependent upon the collaborative arrangements that evolve with these organizations and actors. Key roles for those responsible for the biosphere reserve coordination/management are to learn about the governance system they must work within and to explore ways to enhance its collective capacities for fulfilling the functions of the biosphere reserve.]

#### **7.1 What are the technical and logistical resources for the coordination of the biosphere reserve?**

There is an agreement on cooperation between the ELY-Centre, the Town of Pargas and the Municipality of Kimitoön for the administration of the BR. The responsibility of the BR, and thus also the financing of the coordination, is given to the regional ELY-Centre by the State and the Ministry of Environment.

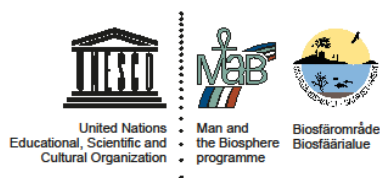


© Katja Bonnevier

The Town of Pargas administrates the BR Office and there is one full-time coordinator employed. During temporary development projects there are other personnel employed by either municipality. Both districts are providing the BR with technical and logistical resources. These municipalities are administrating externally financed BR related projects and sometimes they are also partly financing them. The Municipalities are also assisting with communication and marketing of the BR.

## **7.2 What is the overall framework for governance in the area of the biosphere reserve? Identify the main components and their contributions to the biosphere reserve.**

The Ministry of Environment is responsible for the two biosphere reserves in Finland and regionally the responsibility lies with the ELY-Centers. The Ministry of Education and Culture is responsible for the National coordinator group of Unesco scientific foreign programs. The basic financing is handled by the Ministry of Economic Affairs and Employment, which sets the budget of the ELY-centers. The ELY-Centre and the local municipalities have together been taking care of the coordination of the ASABR since 2004. Since then, the three parts have been establishing 1-2 yearlong cooperation agreements, where areas of responsibility have been agreed upon and the basic financing has been set. A Steering Group (earlier cooperation group) has been designated, and they are responsible for planning the activities and the strategic guidelines for the biosphere work. The Steering Group has an operational role and all parts have their own theme, for which they are responsible. The representatives of the Steering Group are the ELY-Centre (chair), municipalities Pargas and Kimitoön with politically elected members, Metsähallitus, University of Åbo Akademi and University of Turku.



The municipalities are centrally involved in the management through the cooperation agreement. In both municipalities, biosphere reserve matters are handled by departments and staff with tasks related to development, industry and communications. The BR contact person at the municipalities are from these departments and they are invited to attend all steering group meetings. The municipalities run development projects and participate in organizing various events, for example the Archipelago Winter Meeting.

All partners of the Biosphere Reserve are participating in the realization of the BR activities. The universities manage research, monitoring and education and, in addition, they have a central role to popularize science. Metsähallitus manages the Archipelago National Park located in the BR core area. Moreover, large parts of the biosphere reserve are located on privately owned land. Metsähallitus also promotes a sustainable development in the area, especially in connection to recreation and tourism.

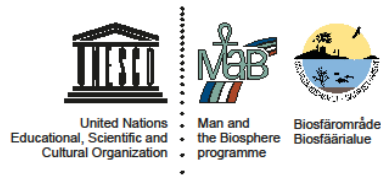
Also other actors of archipelago development can manage activities for the Biosphere Reserve, such as local associations, national research institutes or universities. Entrepreneurs and residents have an important role in highlighting the work of the BR and realize the goals of the BR through their own activities and everyday actions. The BR concept and management have played an important role in the founding of the Åboland Archipelago Foundation. A close cooperation has been developed between the BR Office and the Åboland Archipelago Foundation - today, some of the significant operations of the BR are handled by the foundation, where the coordinator serves as secretary.

**7.3 Describe social impact assessments or similar tools and guidelines used to support indigenous and local rights and cultural initiatives (e.g. CBD Akwé:Kon guidelines, Free, Prior, and Informed Consent Programme/policy, access and benefit sharing institutional arrangements, etc.).**

Not relevant for this region.

**7.4 What (if any) are the main conflicts relating to the biosphere reserve and what solutions have been implemented?**

There are no conflicts related to the BR. The BR has not been seen as a threat, rather as an important resource for the local development, since it has initially been a bridge building organization, active in consulting and initiating projects. When the BR was established, people were worried about the possible restrictions and therefore the core centers of the former municipalities were not included. In 2010, at the time of the revision of the boundaries, those worries had disappeared and the core centers were included. The change in attitude can be seen as a result of good work done by the BR, hence the MAB-concept built on cooperation and voluntary acts, now better understood by the decision-makers.



**7.4.1 Describe the main conflicts regarding access to, or the use of, resources in the area and the relevant timeframe. If the biosphere reserve has contributed to preventing or resolving some of these conflicts, explain what has been resolved or prevented, and how this was achieved for each zone?**

An ongoing challenge for the BR is the decreasing population of permanent residents. While permanent settlers have decreased during the last 70 years, the amount of part-time settlers has increased enormously. These changes have resulted in a radical shift in land use schemes. Biological diversity has decreased due to overgrowing of cultural biotopes when traditional agricultural practices have decreased. There has also been an increase of construction along shorelines. These changes have affected both diversity and recreation. The pre-requisites for entrepreneurship in the construction, service and tourism sectors have become better, and given rise to new opportunities for permanent settlement in the archipelago. A phenomenon especially taking place in the outer archipelago (the buffert zone of the BR), is the conversion of old archipelago homesteads into leisure homes.

Through the Åboland Archipelago Foundation, the BR is trying to tackle the problem of archipelago properties of significant value on small islands in the outer archipelago, especially in the buffer zone of the BR, are sold for part-time, recreational use. The foundation has bought an island property that is being rented to a young family, living in the archipelago all year around. The tenant focuses on entrepreneurship in boat building, woodworking and tourism in the archipelago. This archipelago home serves as the first example in the area for a new concept by the BR.

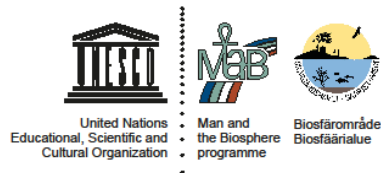


© Julia Ajanko

The preservation of biodiversity in the cultural landscapes was of crucial significance when both the National Park and the Biosphere Reserve were established. The BR has supplemented the operations of the National Park by promoting education, bridge-building and by arranging training courses in cultural landscape management on privately owned land in the Biosphere Reserve.

#### **7.4.2 Describe any conflicts in competence among the different administrative authorities involved in the management of the area comprising the biosphere reserve.**

In general, it is a challenge for governmental authorities to handle issues concerning the archipelago, since the conditions are very different from the mainland. Because of the differences, law defines some rights in the so-called Archipelago law, to ensure an equal treatment of inhabitants living in the archipelago and on the mainland. Arrangements for coordinating issues such as the post, road connections etc. are different in the archipelago region, consisting of more than 10 000 islands, of which some of the inhabited ones haven't a permanent road or ferry connection.



### **7.4.3 Explain the means used to resolve these conflicts, and their effectiveness. Describe its composition and functioning, resolution on a case-by-case basis. Are there local mediators; if so, are they approved by the biosphere reserve or by another authority?**

When there are conflicts involving the municipality's actions or responsibilities in the archipelago, the matter can be passed on to the Local Area Committees in each district in Pargas or through the Archipelago Board of Kimitoön. The former archipelago municipalities have their own politically elected boards. The boards have a consultative role in giving statements on proposals concerning their local area. If an issue concerns another authority or government agency, the joint municipal Delegation of the Outer Archipelago can act on the matter. This delegation of politically elected members representing the outer archipelago islands, is an important actor in the Biosphere Reserve. The chairman and vice chairman of the delegation are always members of the Steering group of the BR.

There is also a national Island Committee that can, on a national level, prepare actions to promote archipelago matters and monitor developments.

### **7.5 Updated information about the representation and consultation of local communities and their participation in the life of the biosphere reserve:**

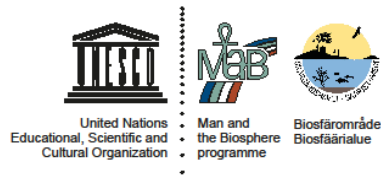
#### **7.5.1 Describe how local people (including women and indigenous people) are represented in the planning and management of the biosphere reserve (e.g., assembly of representatives, consultation of associations, women's groups).**

In the **Steering committee of the BR**, local people are represented through two politically elected delegates (+ two substitute members) from the local communities. The steering committee is responsible for the Action Plan of the BR. At seminars and through other educational activities, a natural balance between traditional and scientific knowledge is always endeavoured. Project planning always involves local people from the occupational group of concern for a specific project.

The **Delegation of the Outer Archipelago**, with 6 politically elected members representing the outer archipelago islands, is an important actor in the Biosphere Reserve. The annual action plan is reviewed by the delegation, the chairman and vice chairman of the delegation, who are always members of the Steering group of the BR. The coordinator has a permanent invitation to the meetings.

#### **Other important Reference Groups:**

**The Archipelago Institute at Åbo Akademi University** has a central role in the popularization of research in the Biosphere Reserve. In cooperation, the BR Office and the Archipelago Institute organizes seminars for the popularization of research and building bridges between researchers of different disciplines and the local community. The high-quality magazine *Skärgård* (Archipelago), published by the Archipelago Institute, has an important role for communication and education on important issues concerning the archipelago. The magazine also serves as a



communication channel for both the BR and local voices. In addition, the Archipelago Institute can participate in local development projects and act in liaison to appropriate cooperation partners.

The National Association of Finnish Islands (FÖSS) is a civil organization with the goal of securing the future for islanders and improving their living conditions. FÖSS acts on a local, national and European level. FÖSS runs local development projects in the biosphere reserve, some of which are in direct cooperation with the BR Office.

The BR also has had a vital role in the **Archipelago Sea Cooperation Group for sustainable nature tourism in the Archipelago Sea area**. The group is not active at the moment. It was established in connection with the membership of the PanParks network of wilderness areas in Europe that is no longer an active network. The function of the Cooperation Group was to support the Archipelago Sea Area in the certification process for the Panparks network and to promote a sustainable development of nature tourism in the national park and biosphere reserve. The Strategy for Nature Tourism in the Archipelago Sea was the lead document for the Cooperation Group.

The cooperation programme *Pro-Archipelago Sea* (In Finnish: Pro Saaristomeri-ohjelma) is a co-operative environmental research and protection programme. It was founded in 1999 by different parties concerned about the fragile state of the Archipelago Sea and now has about 70 member groups. The object of the programme is to improve the state of the water and the coastal area of the Archipelago Sea and to reduce conflicting land use in the area. Another object of the co-operation is to activate the ICZM actors who have the possibility to improve water quality in the Archipelago Sea and its catchment area. The BR coordinator has for several years been holding a coordinating or secretarial role in the sub-network for the Archipelago Sea Area in particular. Other sub-networks concern the catchment areas.

Working groups plan the yearly activities of the BR in the schools and nurseries.

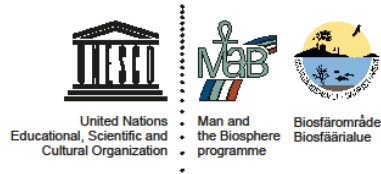
The BR Office arranges yearly events where both scientific knowledge and traditional knowledge are presented to strengthen communication between researchers and local community.

### **7.5.2 What form does this representation take: companies, associations, environmental associations, trade unions (list the various groups)?**

#### **Steering Committee:**

Regional environmental authority

Municipalities; clerks and the politically elected



Universities

Metsähallitus/National Park

**Delegation of outer archipelago:**

Politically elected representation from both municipalities. Persons with connections to the outer archipelago

**Archipelago Institute of University of Åbo Akademi:**

University/Researchers

Tourism association

Forest Services/National Park

ASABR

University/Students

**FÖSS rf, The Small Island Association of Finland:**

Representation of inhabitants from different regions of Finland.

ASABR

**Archipelago Sea Cooperation Group:**

Community, clerks from tourism sector

Regional Tourism Association

Regional authority/Transport, development

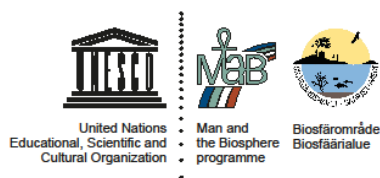
Companies

ASABR

**Pro Archipelago Program:**

All stakeholders are from universities, environmental associations, harbours, companies, fishery representation, industry representation and even inhabitants. The working groups are defined by regions or areas of interest and are open for anyone interested to participate.

**Winter meeting:**



Representation depends on the theme, normally universities, communities, municipalities, associations and inhabitants.

**7.5.3 Indicate whether there are procedures for integrating the representative body of local communities, (e.g., financial, election of representatives, traditional authorities).**

Village councils are always invited to all the forums arranged and consulted when the activities concern their villages.

Some of the former municipalities in the Town of Pargas have their own “Pro Region” (Pro Nagu, Pro Korpo and Pro Houtskär). These are associations, which are working on a voluntary basis with local development. ASABR is involving or consulting the Pro region–associations when appropriate.

Former archipelago municipalities also have their own politically elected boards. The boards have a consultative role and give statements on proposals concerning their local area.

The Delegation of the Outer Archipelago with politically elected members representing the outer archipelago islands, is an important actor in the Biosphere Reserve. The annual action plan is reviewed by the delegation. The chairman and vice chairman of the delegation are always members of the BR Steering Committee.

**7.5.4 How long-lived is the consultation mechanism (e.g., permanent assembly, consultation on specific projects)?**

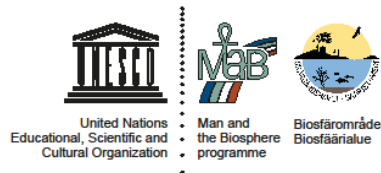
Local people are permanently part of the BR Steering Committee. In projects, both in the planning process and for project management, local people are always consulted.

**7.5.5 What is the impact of this consultation on the decision-making process (decisional, consultative or merely to inform the population)?**

The Steering Committee has a decisive role in the main directives for the BR activities. But when the individual projects are planned, the consultation of experts and local community can be both decisive and have a consulting function. Naturally the organization that administrates a project has a deciding role. Additionally, all representatives of local communities, participating either through the SC or in project-based activities, have an important role acting as BR ambassadors and spreading information about the BR and its activities.

**7.5.6 At which step in the existence of a biosphere reserve is the population involved: creation of the biosphere reserve, drawing up of the management plan, implementation of the plan, day to day management of the biosphere reserve? Give some practical examples.**

In the process of creating the ASABR, the Academy of Finland and the Ministry of Environment were in central roles. The Municipalities were involved in an early stage of the planning. The primary boundaries for the BR were not fully involving the municipalities, because of the slightly skeptical approach of the municipalities. The boundaries were later revised, after first being



periodically reviewed, to involve all the areas that were left out at the nomination. The local stakeholders were all involved from the very beginning in planning the activities.

As the latest BR strategy/management plan was established in 2009, the municipalities and the delegation of the Outer Archipelago were closely involved in the process. All steering group members, including the representatives for the local inhabitants, are involved in the annual planning of activities and the implementation of the plan in the continuous work of the BR. The public, other organizations and local associations are also involved in the implementation of the action plan of the BR through projects, workshops, seminars and educational events.

## **7.6 Update on management and coordination structure:**

### **7.6.1 Describe any changes regarding administrative authorities that have competence for each zone of the biosphere reserve (core area(s), buffer zone(s) and transition area(s))? If there are any changes since the nomination form/last periodic review report, please submit the original endorsements for each area.**

Regarding the core zone, no remarkable changes have happened since the last periodic review. Forest services/National Park is in charge of the management of the national park and other protected areas. The rest of the area is governed by the regional authorities and the municipalities, The Southwest Finland Regional Environment Centre, that was earlier in charge of the BR, has in 2010 been reorganized and has merged in with other regional authorities to form a larger organization called the Centre for Economic Development, Transport and the Environment in Southwest Finland (ELY-Centre). The responsibility of the BR is handed over to the ELY-Centre. In 2009, the eight former municipalities of Åboland were merged in to two larger ones, the Town of Pargas (Town of Väståboland 2009-2012) and the Municipality of Kimitoön. The association Region Åboland, that was earlier in charge of the BR Office, has been withdrawn and the two new municipalities are now involved in the management of the BR. Pargas runs the BR Office.

### **7.6.2 Update information about the manager(s)/coordinator(s) of the biosphere reserve including designation procedures.**

Kari Lehtilä (Planner) 1992-1995

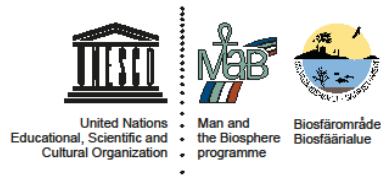
Martin Öhman 1995-1998, 2001-2005

Mikael Nordström 2005-2007

Julia Scheinin 7/2015-7/2016

Katja Bonnevier 2007 (maternity leave 7/2015-7/2016) -

### **7.6.3 Are there any changes with regard to the coordination structure of the biosphere reserve? (if yes, describe in details its functioning, composition and the relative proportion of each group in this structure, its role and competence.). Is this coordination structure**



**autonomous or is it under the authority of local or central government, or of the manager of the biosphere reserve?).**

There is an agreement of cooperation between the ELY-Centre, the Town of Pargas and the Municipality of Kimitoön for the administration of the BR. The responsibility of the BR and thus also the financing of the coordination, is given to the regional ELY-Centre by the State and the Ministry of Environment. The management structure has since 2004 been based on a model where the municipalities have been involved in the administration of the activities. During the first years, the partner representing the municipalities was an association for regional development, Region Åboland, which functioned as a cooperative organization for the 8 former municipalities of the Åboland. The Association Region Åboland has not existed since 2009, when the municipalities were merged to 2 larger ones. Today the cooperative management structure is based on a three-part contract between the ELY-Centre and the 2 municipalities, Pargas and Kimitoön. The reorganizations have had a positive effect on the involvement of the municipalities.

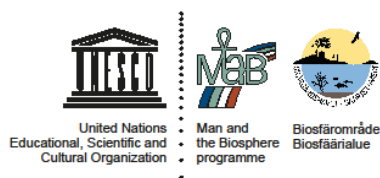
The Town of Pargas administrates the BR office and there is one full-time coordinator employed. During temporary development projects there are other personnel employed by either municipality. Both municipalities are providing the BR with technical and logistical resources. The municipalities are administrating externally financed BR related projects and sometimes they are also partly financing them. The municipalities are also assisting with communication and marketing of the BR.

The earlier cooperation group of the BR was changed into a steering committee and obtained a new member, the Turku University. The Steering Committee has a more operational role than the cooperation group. The responsibility of the activities of the BR was divided between the member organizations.

Region Åboland had set up a delegation for the outer archipelago to handle issues concerning the outer archipelago and to function as a reference group for the BR. This delegation has 13 members from local communities and other stakeholders relevant for the outer archipelago. The BR coordinator acted as secretary. In 2009, the delegation was withdrawn when the municipalities were reorganized and a new delegation with only politically elected members was set up. The connection to the BR was maintained through a permanent invitation to the meetings.

#### **7.6.4 How has the management/coordination been adapted to the local situation?**

The coordinator of the BR is employed by one of the municipalities, and the biosphere office is also in close contact with the development section of the other municipality. The municipalities have one representative each in the steering group of the BR. In addition, one representative from the development section/department of each municipality has the right to attend steering group meetings. This model of coordination enables that the municipalities can realize many of the activities of the BR. This is a very efficient solution for the BR, as all municipal projects are planned and realized by the development sections, enabling the BR to carry out work in different



sectors, e.g. environment, education and business. The model also makes cross-sectorial cooperation easier.

#### **7.6.5 Was the effectiveness of the management/coordination evaluated? If yes, was it according to a procedure?**

The management and coordination of the BR is evaluated through the annual report. The effectiveness was according to the procedure. Taking into account the small resources of the BR Office a reasonable amount of actions are conducted. The structure of the management is optimizing the use of resources by involving BR partners in the implementation.

#### **7.7 Update on the management/cooperation plan/policy:**

##### **7.7.1 Are there any changes with regard to the management/cooperation plan/policy and the stakeholders involved? If yes, provide detailed information on process for involvement of stakeholders, adoption and revision of the plan.**

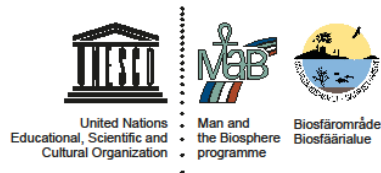
Earlier, the coordination of the BR was placed at Region Åboland, a development center for the municipalities in the region of Åboland. Since the 8 municipalities in Åboland merged into two, the organization of Region Åboland was abolished. A three-part contract was established for the administration of the BR. The new, so called Biosphere Office, was established to include the three administrative partners; ELY-Centre, Pargas and Kimitoön. The Biosphere Office is placed at the Town of Pargas, at the Department for Livelihood. The physical office is placed in Korpo, at the heart of the BR. This was a step closer to an even stronger involvement of the municipalities, which has been an important goal in developing the management structure of the BR.

In the management plan/strategy of the BR for 2009-12 (revised for 2012-17), the main organizations agreed on their areas of responsibility. The ELY-Centre is responsible of the focus area of Integrated Water Protection, Metsähallitus is responsible for both the Sustainable Nature Tourism and the Nature and Culture Preservation, while the University of Åbo Akademi is responsible for the development of vital archipelago society and the municipalities for the recognition of the BR. Activities are conducted by either of these main partner organizations or by the other organizations.

##### **7.7.2 Describe contents of the management/cooperation plan (provide some examples of measures and guidelines). Is the plan binding? Is it based on consensus?**

The management plan is an indicative document providing guidelines for BR activities. The responsibility of the implementation is based on consensus and is shared by the main partners of the BR. The plan is rather to engage the stakeholders to participate, rather than binding them. More detailed plans are made up in the yearly action plans. The coordinator makes the proposal for the action plan. The action plan is then presented at a steering group meeting and the SG participates in the process of finishing the plan.

The management plan has five focus areas. The responsibility is shared by the main partners. All BR partners and other organizations can conduct activities in connection with any of the focus areas:



### 1. Preservation of natural and cultural heritage/Metsähallitus

Actions have been focused on preservation of cultural landscapes and fighting problematic invasive species. The measures have been to initiate development projects for e.g. enhancing cooperation between land-owners, animal farmers and environmental authorities, education of entrepreneurs in landscape management, developing model landscapes and arising awareness (see 5.10 for examples).

### 2. The condition of the Archipelago Sea/ELY-Centre

Some actions are connected with fostering the cooperation networks for integrated management of the sea. Much of the focus is on environmental education for nurseries, schools, tourists and inhabitants (see Pro Skg, see 5.10 for examples such as the *Pike and his friends*, *Biosphere Reserve goes school*)

### 3. Sustainable Nature Tourism/Metsähallitus.

Foster the development of sustainable tourism entrepreneurs by networks and sharing best practices (see PanParks 5.2 and model of Brännskär 5.10).

### 4. A viable Archipelago Society adapted to changes/ Åbo Akademi University

In this thematic framework actions of very different aspects have been conducted. Many of the measures are for popularizing research and fostering communication between researchers and the local society (see 5.10 for examples such as the Winter meeting and the Forum for archipelago research, *Tidskriften Skärgård*). A foundation for Åboland Archipelago was established to promote a viable society in the outer archipelago (see 5.10).

### 5. Branding of the Archipelago Sea BR/Municipalities.

The Municipalities have by simple means used flags and information boards making the BR more visible in the region. The large input in enhancing the development of local artisan food products has an important impact on the presentation of the biosphere reserve and the region in a touristic context (see 5.10 for examples).

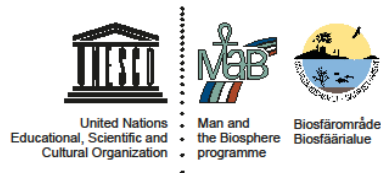
## **7.7.3 Describe the role of the authorities in charge of the implementation of the plan. Describe institutional changes since the nomination form/last periodic review report. Please provide evidence of the role of these authorities.**

The regional ELY-Centre has main responsibility for the BR management, appointed by the Ministry of Environment. There is a three-part agreement between the ELY-Centre and the two municipalities, committing the Town of Pargas to coordinate the BR, and binding both municipalities and the ELY-Centre to fulfil the BR goals set in the management plan. The ELY-Centre has committed to handle the basic funding of the BR.

## **7.7.4 Indicate how the management plan addresses the objectives of the biosphere reserve.**

The strategy/management plan is based on the Statutory Framework, the Seville Strategy and the Madrid Action Plan. The goals of the strategy are in accordance with three functions of a BR. The actions are gathered under 5 focus areas of the management plan (see 7.7.2).

## **7.7.5 What are the progresses with regard to the guidelines of the management/cooperation plan/policy?**



Clear progress has been made regarding the coordination of the BR. A major asset for the BR is that management responsibility has been gradually shifted from the regional government, closer to the municipalities, the local community and to archipelago inhabitants. BR activities have now become more rooted in the local communities and the concept made more accessible to local associations, entrepreneurs and inhabitants. Earlier, the regional government (ELY) had the main role in carrying out projects but now the municipalities have taken on this role. The municipalities also contribute economically to the projects.

### **Increased visibility**

Continuous work and special efforts during the anniversary year have made the BR concept and activities more visible, especially within the BR. The visibility has been enhanced with the use of BR flags at several locations around the area, e.g. main ferry piers. The slogan, I am a part of the Biosphere, based on a model from Lake Vänern Archipelago and mount Kinnekulle BR in Sweden, was used during the anniversary year. The general concept of the BR has also been made more accessible to local people and the continuous work with the schools has strongly supported that effort.

### **Promotion of settlement and livelihood in the archipelago**

The establishment of the foundation of Åbolands Skärgårdsstiftelse has given the BR effective tools for promoting a viable archipelago with focus on the small islands of the outer archipelago.

### **Cooperation, involvement and better communication**

Progress has been made in involving a larger number of organisations in BR activities. The BR can therefore focus more on its coordinating role, while activities are realised by local actors. Seminars and other events, many of which are arranged on a yearly basis, are conducted in cooperation with BR partners and other stakeholders. The BR partners or other stakeholders run all projects.



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### **Supporting traditional livelihoods**

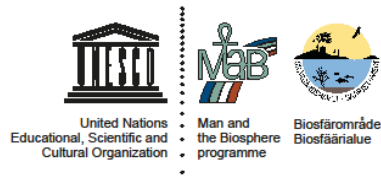
The BR has put lots of effort on starting up an educational program for artisan food processing and promotion of local artisan food products. In only a few years the amount of local high quality food products have increased.

### **Preserving biodiversity**

The amount of animals used in landscape management has increased due to the slight increase in availability of sheep in the BR. The total area of managed cultural landscapes has also increased. The reasons behind that are probably the raised awareness, the EU subsidies and the availability of animals for grazing.

#### **7.7.6 Were there any factors and/or changes that impeded or helped with the implementation of the management/coordination plan/policy? (Reluctance of local people, conflicts between different levels of decision-making).**

The re-organization resulted in a new management structure based on a three-part contract for the coordination and the shared responsibility of the implementation. It is more flexible and



easier to reach local people, if you represent a municipality instead of a large, faceless authority. At the same time, the BR is handled separately from the municipal statutory activities, providing flexibility and the ability to act on a broader level.

The revision of the boundaries made the geographical area more unified, which strengthens the BR program in the area.

The lack of resources and the short-term financing contracts for running the BR Office is a continuous challenge. The short-term contracts for the coordination are putting additional stress on the sensitive management structure based on cooperation and trust.

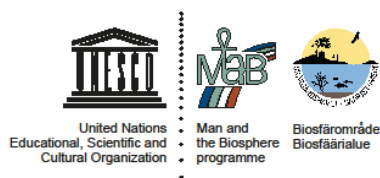
**7.7.7 If applicable, how is the biosphere integrated in regional/national strategies? Vice versa, how are the local/municipal plans integrated in the planning of the biosphere reserve?**

**(Please provide detailed information if there are any changes since the nomination form/last periodic review report).**

The BR is not integrated in any national strategy, but there are a few strategies of high importance for the BR, Finland's Tourism Strategy 2020 (Valtakunnallinen matkailustrategiatyöryhmä 2006), Archipelago Programme (Skärgårdsprogrammet 2007 – 2010, Skärgårdsdelegation 2007) and The Action Plan for Protection and Sustainable Use of Biodiversity in Finland 2013-2020 (Luonnon puolesta – ihmisen hyväksi, Suomen luonnon monimuotoisuuden suojelun ja kestäväen käytön toimintaohjelma 2013–2020). In the Action Plan for Protection and Sustainable Use of Biodiversity in Finland the BR:s are mentioned as good model regions for land use planning with integration of both nature conservation and sustainable use. The newest Tourism Strategy is putting a lot of focus on the archipelago area of Southwest Finland. The Archipelago Program is linked with the Archipelago law (494/1981) that promotes the development of a viable archipelago region.

Among Regional strategies, the most important ones are the Landscape Plan of Southwest Finland (Varsinais-Suomi) and the Southwest Finland's Archipelago Programme coordinated by the Regional Council of Southwest Finland. The ASABR together with National Park has a central role in the implementation of sustainable development of the archipelago area, linking nature conservation with sustainable use of natural resources and the development of the livelihood of the archipelago.

The BR has its own lead document, the Strategy for the Archipelago Sea Biosphere Reserve that includes all the partner organizations. The Management Plan for the Archipelago National Park (Metsähallitus), the Program of the Pro Archipelago Sea (Pro Saaristomeri), The Environment Program of Southwest Finland (ELY-center), The Archipelago Program of Southwest Finland (Regional Council of SW Finland) and the Strategy for Sustainable Tourism (Metsähallitus) are all integrated in the Strategy of the BR. In the Archipelago Program the BR is mentioned several times as an organization responsible for implementation. In the Strategy for Sustainable Tourism in the Archipelago Sea the BR has a central role both as an actor, but also as a program to take into account the development of the sustainable tourism in the region.



## 8. CRITERIA AND PROGRESS MADE:

[Conclude by highlighting the major changes, achievements, and progress made in your biosphere reserve since nomination or the last periodic review. How does your biosphere reserve fulfill the criteria. Develop justification for the site to be a biosphere reserve and rationale for the zonation. What is lacking, and how could it be improved? What can your biosphere reserve share with others on how to implement sustainable development into practice?]

Brief justification of the way in which the biosphere reserve fulfills each criteria of article 4 of the Statutory Framework of the World Network of Biosphere Reserves:

### 1. "Encompass a mosaic of ecological systems representative of major biogeographic region(s), including a gradation of human interventions".

(The term "major biogeographic region" is not strictly defined but it would be useful to refer to the Udvardy classification system ([http://www.unep-wcmc.org/udvardys-biogeographical-provinces-1975\\_745.html](http://www.unep-wcmc.org/udvardys-biogeographical-provinces-1975_745.html))).

According to the Udvardy Biogeographical classification system Archipelago Sea Area belongs to the Boreonemoral Province.

Conservation of the cultural landscape and the brackish water ecosystem has been attracting a lot of actions, research and attention. Man is needed to keep the cultural landscape ecosystem in balance, but concerning the marine ecosystem the impact by man has led to an imbalance in the system.

Cultural landscapes are being restored by the state, organizations and municipalities in core areas, buffer zones and transitional zones both on private and state owned land. Cultural landscapes are typically hotspot areas for vascular plants, mosses and insects.

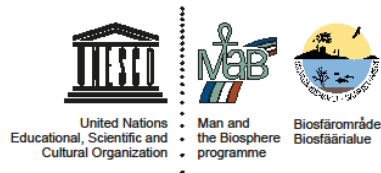
The biosphere reserve is working to restore and maintain cultural landscapes together with the Metsähallitus, Regional Environment Centre and the municipalities.

### 2. "Be of Significance for biological diversity conservation".

In the core area, the national park is working for conservation of valuable and typical habitats and species. The biosphere reserve activities have concentrated more on the buffer and transitional zones. E.g. concerning cultural landscapes, the biosphere reserve is involved in actions where private land is being restored by local entrepreneurs. Information and guidance concerning water protection is of high importance for the condition of Archipelago Sea.

### 3. "Provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale".

(Including examples or learning experiences from putting sustainable development into practice).



All the activities of the biosphere reserve demonstrate approaches to sustainable development. The BR is developing and testing models for sustainable development. During several years the BR has explored different approaches to promote **cultural landscape management**, such as connecting landowners and animal farmers with each other, supporting education for local entrepreneurs to landscape managers and promoting small-scaled sheep industry on islands in the Baltic Sea. The long-term approach for promoting the ecologically, socio-economically and esthetically important cultural landscape, which has been an important show case for the BR.

The establishment of **the Foundation of Åboland Archipelago** has given the BR new tools for putting theories in practice. The Fund has developed and tested a model for promoting migration and opportunities for sustainable livelihood on small islands in the archipelago by buying and renting out a cultural historically important property for permanent living and developing it together with the creative entrepreneurs that moved there.

The work with schools and nurseries is of high importance. **“Gäddan och gänget”** (The pike and his friends) is an interactive program for nurseries to introduce issues about sustainable development for children. Similar topics have been waste treatment and the condition of the sea. The program gives tools for the teachers to discuss and interact with the children.

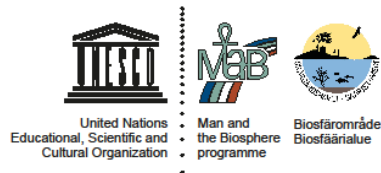
**The Artisan food concept of Mathantverk** is about food manufacturing that is based on traditions, handicraft and clean products. The concept is well-adapted to small-scaled environments in the archipelago where mass production is impossible. In the Archipelago Sea Area the primary production is dominating and few or almost none of the farmers are processing the products in any way. The BR Office has been involved in developing an educational program for Artisan food in Southwest Finland that has grown to include the whole west-coast of Finland, including Åland islands. Today, the number of Food Artisans is growing and the products are available at markets and even local food stores.

#### **4. “Have an appropriate size to serve the three functions of biosphere reserves”.**

A revision of the boundaries of the BR took place in 2010 and now the surface of the BR is 5400km<sup>2</sup>. The new boundaries made the transition zone larger and more united. The BR includes large nature protection areas, but the majority of the terrestrial area is still private land and therefore involves a reasonable amount of inhabitants and entrepreneurs in the activities of the BR. The total surface is large, but the inhabitants are still quite few. There are several organizations doing research and monitoring and two marine research stations in the BR. The size and shape well accommodates the three functions of the biosphere reserves.

#### **5. Appropriate zonation to serve the three functions**

The division into three categories is appropriate and has functional variability, depending on the activities and projects. All zones have functioned well to serve the three functions, but in different ways. Moreover, the activities in buffer zones and transition areas have not always been easy to distinguish. These zones may actually be sometimes considered as one zone only. The buffer zone is mostly private land and not designated as any kind of protection area. It is characterized



as a small-scaled archipelago area with small islands, few inhabitants and little development activities and designated to function as a cooperation area of the national park. The transition zone is more densely populated and most of the permanent inhabitants live here. In this zone most of the people live on a few larger islands with car ferry connections to the mainland.

**6. “Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and the carrying out of the functions of a biosphere reserve”.**

Authorities and local communities are participating in the biosphere reserve activities in many ways. The cooperative management structure is based on a three part contract for the administration and the management plan is based on shared responsibility between several organizations within the BR steering committee and reference groups. They are all represented but also in steering committees for different projects. A forum for cooperation and information, the Archipelago Sea winter meeting, is yearly arranged.

**7. Mechanisms for implementation:**

**a) Mechanisms to manage human use and activities**

**b) Management policy or plan**

**c) Authority or mechanism to implement this policy or plan**

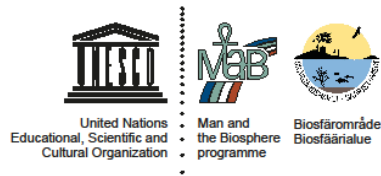
**d) Programmes for research, monitoring, education and training**

a. Human use and activities are managed by raised awareness, communication and guidance. Important issues for the local society, such as natural and cultural values, livelihood and migration are discussed at different forums and development projects are started up to test and demonstrate models for sustainable development.

b. There is a management plan/strategy for the biosphere reserve (Strategi för Skärgårdshavets biosfärområdes verksamhet 2009-2011 (updated 2012-2017)/in Swedish) as well as regulations for the core areas and the Archipelago Sea National Park (Metsähallitus) (in Swedish and Finnish). These are referred to earlier in this review.

c. The authority in charge of implementation of the biosphere reserve is the ELY-Center in Southwest Finland. Based on a three part contract between the ELY-Centre and the Municipalities the Town of Pargas is administratively in charge of the BR. The operative responsibility is shared between the main partners of the BR according to a letter of intent. In core areas, i.e. the national park, the responsibility of implementation is with Metsähallitus.

d. The biosphere reserve Office does not run any research, monitoring, education or training programmes on its own. However, the reserve has during the years taken initiatives to establish or run several educational programs and smaller research projects.



**Does the biosphere reserve have cooperative activities with other biosphere reserves (exchanges of information and staff, joint programmes, etc.)?**

**At the national level:** North Karelia BR and supported the planning of Päijänne Lake Area BR (not yet candidate)

**At the regional level:** ASABR has been coordinating and actively participating in the activities of the regional and thematic network of NordMAB. The network was established in 2004 and after some years of low activity ASABR was in 2011 hosting a get-together to activate the network again. Since then NordMAB has been growing. Archipelago Sea has been consulted at the process of establishing new BRs in Sweden; Blekinge Arkipelag and Nedre Dalälven and in Norway the BR candidate Nordhordland. Metsähallitus/the National Park has already been having some linking activities with Nordhordland in managing cultural landscapes. ASABR personnel have had regular exchange of information with many of the Swedish BRs, both virtually and by visiting and giving presentations at seminars. Since the beginning, there has been a well-established contact to Western Estonian Archipelago BR. These two are in many ways very similar biosphere reserves and have had an active exchange of information and fruitful cooperation in several developmental projects.

**Through linking and/or crossborder biosphere reserves:** Links between Latvia, Estonia and ASABR have been arranged within the framework of the Coastal Sustainability project.

**Within the World Network:** In 2012, the ASABR was involved in an ambitious cooperation program with the CatBa BR in Vietnam. The project that was conducted by the University of Applied Science in Turku and the Haiphong University in Vietnam, built up a student and teacher exchange program and organized an intensive course in Sustainable Tourism that took place in Cat Ba BR. The students and teachers who attended the course were from both countries. The coordinator was teaching at the course.

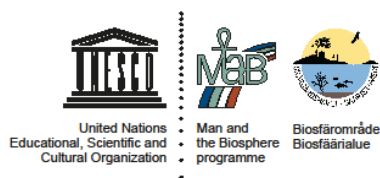
**Obstacles encountered, measures to be taken and, if appropriate, assistance expected from the Secretariat:**

The continuous reorganization of the authorities with responsibility for the BR has had an influence on the BR management. Since the BR is dependent on state financing, it adds even more uncertainty that sometimes might affect the outcome. The BR is run by a Biosphere Office with only one permanent staff, the coordinator. The lack of resources is challenging and time-consuming. Discussions between governmental authorities and BR management partners should be arranged to find new solutions.

**Main objectives of the Biosphere Reserve:**

**Describe the main objectives of the biosphere reserve integrating the three functions and the sustainable development objectives for the coming years.**

1. Preserve biodiversity



2. Reduce pollution of the coastal waters and the Baltic Sea
3. Preserve cultural heritage and support traditional livelihoods in the region
4. Promote regional development aiming for leading positions of ecologically sustainable solutions (energy production, business/economy, tourism and Integrated Coastal Zone Management).
5. Promote settlement and livelihood in the archipelago and support a pleasant living environment that attracts settlers, tourists and entrepreneurs.
6. Support construction and maintenance of vertical and horizontal cooperative networks addressing issues that are important for the Archipelago Sea and promotes communication between universities, decision-makers and local people.
7. Act as a model area for sustainable solutions together with other biosphere reserves in the global network of biosphere reserves.

## 9. SUPPORTING DOCUMENTS

[List of the annexes submitted with periodic review report.]

### (1) Updated location and zonation map with coordinates

[Provide the biosphere reserve's standard geographical coordinates (all projected under WGS 84). Provide a map on a topographic layer of the precise location and delimitation of the three zones of the biosphere reserve (Map(s) shall be provided in both paper and electronic copies). Shapefiles (also in WGS 84 projection system) used to produce the map must also be attached to the electronic copy of the form. If applicable, also provide a link to access this map on the internet (e.g. Google map, website...)].

#### Annex:

**I.I: ASABR\_zones**

**I.II:ASABR\_coordinates**

**I.III: ASABR\_Shapefiles (only electronic)**

### (2) Updated vegetation map or land cover map

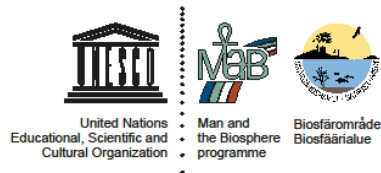
[A vegetation map or land cover map showing the principal habitats and land cover types of the biosphere reserve should be provided, if available.]

#### Annex:

**II.I: ASABR\_land cover**

**II.II:ASABR\_Corineland cover\_categories**

### (3) Updated list of legal documents (if possible with English, French or Spanish synthesis of its contents and a translation of its most relevant provisions)



[If applicable update the principal legal documents since the nomination of the biosphere reserve and provide a copy of these documents.]

**Annex:**

**III.I Archipelago National Park Management Plan\_Finnish and Swedish**

<http://julkaisut.metsa.fi/julkaisut/show/811>

**III.II Index in English.**

**Annex:**

**III.III Letter of intent for ASABR 2009-2011 (in Swedish).**

**III.IV Letter of intent for ASABR 2012-2017 (in Swedish).**

The operative responsibility is shared between the main partners of the BR according to a letter of intent. All partners plan and conduct activities that promote the BR.

**(4) Updated list of land use and management/cooperation plans**

[List existing land use and management/cooperation plans (with dates and reference numbers) for the administrative area(s) included within the biosphere reserve. Provide a copy of these documents. It is recommended to produce an English, French or Spanish synthesis of its contents and a translation of its most relevant provisions.]

**Annex**

**IV.I List of Management Plans**

**IV.II. Copies of Management Plans (only electronic)**

**III.I Management Plan of the Archipelago National Park**

**(5) Updated species list (to be annexed)**

[Provide a list of important species occurring within the proposed biosphere reserve, including common names, wherever possible.]

**Annex V\_Species list**

**(6) Updated list of main bibliographic references (to be annexed)**

[Provide a list of the main publications and articles of relevance to the proposed biosphere reserve.]

**Annex VI\_Publications**

**(7) Further supporting documents.**

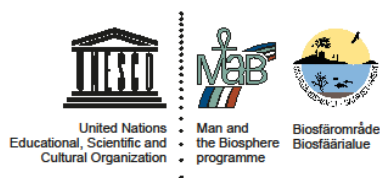
**The management plan/strategy for the Archipelago Sea Area Biosphere Reserve 2009-2011**

**(updated 2012-2017)** (Strategi för Skärgårdshavets biosfärområdes verksamhet 2009-2011  
(uppdaterad 2012-2017) */in*

**Swedish** <http://www.skargardshavetsbiosfaromrade.fi/old/images/stories/files/strategi%20fr%20skrgardshavets%20biosfromrdes%20verksamhet%20uppdaterad%202011.pdf>

**Annex VII\_The Managemant Plan of ASABR**

**10. ADRESSES**



#### 10.1 Contact address of the proposed biosphere reserve:

[Government agency, organization, or other entity (entities) to serve as the main contact to whom all correspondence within the World Network of Biosphere Reserves should be addressed.]

Name: Archipelago Sea Area Biosphere Reserve/ Pargas stad

Street or P.O. Box: Handelsmansvägen 1

City with postal code: 21710 Korpo

Country: Finland

Telephone: +358-403562655

E-mail: [katja.bonnevier@pargas.fi](mailto:katja.bonnevier@pargas.fi)

Web site: [www.archipelagoseabiospherereserve.fi](http://www.archipelagoseabiospherereserve.fi)

#### 20.2. Administering entity of the core area(s):

Name: Metsähallitus/ Saaristokeskus

Street or P.O. Box:

City with postal code: 21720 Korpoström

Country: Finland

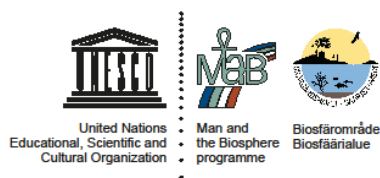
Telephone: +358-206 394020

E-mail: [sinisimpukka@metsa.fi](mailto:sinisimpukka@metsa.fi)

Web site: [www.nationalparks.fi/en/archipelagonp](http://www.nationalparks.fi/en/archipelagonp)

20.3. Administering entity of the buffer zone(s). The buffer and transition zones are mostly private land. The Archipelago Sea Area BR/ Pargas stad is administrating the activities of BR. See above.

20.4. Administering entity of the transition area(s): The buffer and transition zones are mostly private land. The Archipelago Sea Area BR/ Pargas stad is administrating the activities of BR. See above.



## Annex I to the Biosphere Reserve Periodic Review, January 2013

### MABnet Directory of Biosphere Reserves

#### Administrative details

**Country:** Finland

**Name of BR:** Archipelago Sea Area Biosphere Reserve

**Year designated:** 1994

**Administrative authorities:** The Centre for Economic Development, Transport and the Environment in Varsinais-Suomi (ELY-center) reporting for Ministry of Environment

**Name Contact:** Katja Bonnevier, coordinator, Archipelago Sea Area Biosphere Reserve/The Town of Pargas

**Contact address:** Pargas stad, Handelsmansvägen 1, 21710 Korpo, Finland, +358-40-3562655, katja.bonnevier@pargas.fi

**Related links:** [www.skargardshavetsbiosfaromrade.fi](http://www.skargardshavetsbiosfaromrade.fi)

**Social networks:** Facebook: ArchipelagoBiosphere, Twitter: ArchipelagoBiosphere

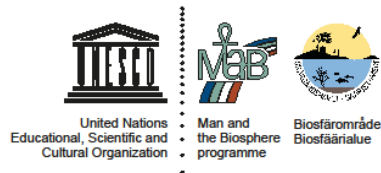
#### Description

##### **General description:**

Situated in southwestern Finland and represents a coastal environment with small islands in the Baltic Sea. The island societies are small-scaled and the people who have lived there for generations have a close contact with the sea and the nature. The traditional livelihoods like fishing and agriculture are getting less profitable and the population has greatly decreased since the beginning of the last century. The society is adapting to new economic and social structures and is in need of an open-minded, innovative approach to the future. One of the strengths of the area is the old culture with the important traditional knowledge and the strong commitment to the area by the local people. Another advantage of the area is the relatively well preserved nature that provides resources of high value. The unique area with thousands of islands and skerries is very valuable as a living environment for both permanent and temporary inhabitants and for recreational purposes.

This biosphere reserve comprises terrestrial and marine habitats such as coniferous forests, wood meadows, heaths, rocky meadows, rocky or sandy islets, arable land, seashores and open sea areas. Special habitats found are old-growth forest, cultural landscapes, moors, herb-rich forests and marine sea grass meadows having a scattered distribution. The mosaic-like archipelago consists of 6500 islands (>0.5 ha) and is unique worldwide. The post-glacial land-uplift is an important factor in forming the archipelago topography and scenery. The present rate of the land-uplift is 4-5 mm/year. The bedrock in the Archipelago Sea area is a remnant of an ancient mountain chain called the Svecofennides and forms a peneplain. The bedrock consists mainly of granite, gneiss and schist. In addition, there are small local limestone occurrences. There are numerous fracture zone sand fault lines in the bedrock. Therefore, the islands and the open sea areas are often elongated. The glacial drift has reinforced this kind of pattern. The rocky islands with numerous roches moutonnées are a very distinctive feature of the archipelago geomorphology. Furthermore, there are islands of glaciofluvial origin (eskers, clay deposits, potholes, end moraines and ice-marginal formations such as the "Salpausselkä II and III"). The main soil type is moraine.

The Archipelago Sea National Park, which represents the core area of the biosphere reserve, differs in many aspects from other Finnish national parks since it comprises of traditional landscapes with grazing and hay-cutting activities as well as fishing and hunting. It was established in order to protect the natural environment and culture of the Archipelago Sea, to safeguard the traditional ways of utilizing natural



resources, to protect a living community and to promote environmental research and interest in nature. With the establishment of the biosphere reserve, a buffer zone and transition area now surrounds the national park in order to pave the way for a sustainable development of the Archipelago Sea area.

About 3500 people live permanently within the biosphere reserve. The national park receives about 80 000 visitors annually. The inhabitants are mainly Swedish speaking, which differs from the national majority (5% Swedish speaking). Most of the inhabitants belong to the Evangelical-Lutheran church in Finland. Other religions have minor support. Historically, the area has been of importance due to its strategic location. Navigation and trading activities have brought a rich cultural and social exchange to the area. During different wars (e.g. the war between Sweden and Russia 1809 and World war I & II) the area has been of great importance. Due to the language and the close vicinity to Sweden, the Swedish influence has been considerable. The area is close to the state border and thus is of importance from the defense perspective. In addition to Lapland and eastern Finland, this is the only area with a remaining cyclic life style, i.e. a naturally dependent life style in harmony with nature and the seasons.

A number of sustainable development projects are carried out, supported by research activities and exchange of experiences in the international network of biosphere reserves. The Archipelago Sea Biosphere Reserve is administrated by the Centre for Economic Development, Transport and the Environment in Southwest Finland (ELY-centre), the Town of Pargas (running the Office) and the Municipality of Kimitoön. The activities, often in the shape of development and research projects or seminars and other events, are run in cooperation with or by various partners (e.g. communities and inhabitants, Regional Council of Southwest Finland, The University of Åbo Akademi, The University of Turku and the Forest and Park Service/national park).

**Major ecosystem type:** Temperate broadleaf forests or woodlands; Brackish water archipelago (according to Udvard's classification system)

**Major habitats & land cover types:** Coniferous forests characterized by Scots pine (*Pinus sylvestris*), spruce (*Picea abies*) and birch (*Betula pubescens*); mull-soil forest with spruce, birch and aspen (*Populus tremula*), characterized by alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*) or oak (*Quercus robur*) and hazel (*Corylus avellana*); wood meadow including *Ranunculus acris*, *R. auricomus*, *Dianthus deltooides* etc.; field, heath and rocky meadow with *Cladonia* spp., *Empetrum nigrum*, *Arctostaphylos uva-ursi*; rocky treeless islets with *Allium schoenoprasum*, *Tripleurospermum maritimum*, *Cochlearia danica* etc.; sandy islets with *Urtica dioica*, *Sedum acre*, *Fragaria vesca* etc.; seashore supporting *Angelica sylvestris*, *A. archangelica litoralis*, *Isatis tinctoria*, *Linaria vulgaris*, *Festuca polesica*, *Carex* spp. etc.; Baltic marine area with species such as *Fucus vesiculosus*, *Cladophora glomerata*, *Furcellaria* etc.; agroecosystems with rye, barley, sugarbeet etc.; forestry ecosystems with Scots pine and spruce.

**Bioclimatic zone:** According to Köppen's climate classification, Finland belongs wholly to the temperate coniferous-mixed forest zone with cold, wet winters. The average duration of permanent snow cover is approximately 2-3 months. Sea normally freezes during winter. July is the warmest month (mean 16°C at Utö weather station) and February the coldest (-3.5°C). Mean annual precipitation is slightly above 500 mm.

**Location** (latitude & longitude): 60°N; 22°E

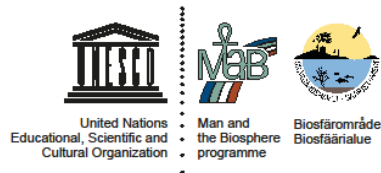
**Total Area** (ha): 540 000

**Core area(s):** 50 000 of which 47 000 water

**Buffer zone(s):** 232 000 of which 218 000 water

**Transition area(s):** 258 000 of which 193 000 water

**Different existing zonation:** The biosphere reserve can be divided into four different zones:



1. Sea zone: large open sea areas, numerous bare and rocky islets usually <5 m high.
2. Outer archipelago zone: islands and islets covered by low mixed forest, large sea area.
3. Intermediate archipelago zone: large islands as well as open sea areas.
4. Inner archipelago zone: large forested islands some tens of metres high. Agriculture.  
The post-glacial land-uplift is an important factor in forming the archipelago topography and scenery. The present rate of the land-uplift is 4-5 mm/year.

**Altitudinal range** -105 to +50:

**Zonation map(s)** (see section 2.2.2):

### **Main objectives of the biosphere reserve**

#### **Brief description**

1. Preserve biodiversity
2. Reduce pollution of the coastal waters and the Baltic Sea
3. Preserve cultural heritage and support traditional livelihoods in the region
4. Promote regional development aiming at a lead position of ecologically sustainable solutions (energy production, business/economy, tourism and Integrated Coastal Zone Management)
5. Promote settlement and livelihood in the archipelago and support a pleasant living environment that attracts settlers, tourists and entrepreneurs
6. Support construction and maintenance of vertical and horizontal cooperative networks addressing issues that are important for the Archipelago Sea and promotes communication between universities, decision-makers and local people
7. Act as a model area for sustainable solutions together with other biosphere reserves in the global network of biosphere reserves

### **Research**

#### **Brief description**

Most of the natural science research is connected to the national park and carried out by governmental authorities, the local universities or the Archipelago Research Institute. The focus is mainly on marine issues, but also birds and vascular plants in a coastal environment and on the islands. Since 2007, the Finnish Inventory Programme for the Underwater Marine Environment has conducted extensive marine inventories of biodiversity. Studies on the highly productive Eelgrass meadows (*Zostera marina*) have been a new focus area for marine research during the last decade. Research of other disciplines are also conducted in the Archipelago Sea area by the local Universities. The BR Office is especially promoting multi-disciplinary research including both nature and society aspects. The role of the BR regarding research is primarily to strengthen the communication between researchers and the society and to enhance the popularization of research.

## **Monitoring**

### **Brief description**

Monitoring in the Archipelago Sea Area is conducted by governmental authorities, the local universities and the Archipelago Research Institute. Cooperation with local hunting associations and professional fishermen are of high importance. Most monitoring involves marine parameters.

#### **Specific variables (fill in the table below and tick the relevant parameters)**

<b>Abiotic</b>		<b>Biodiversity</b>	
Abiotic factors		Afforestation/Reforestation	
Acidic deposition/Atmospheric factors		Algae	x
Air quality		Alien and/or invasive species	x
Air temperature	x	Amphibians	
Climate, climatology		Arid and semi-arid systems	
Contaminants	x	Autoecology	
Drought		Beach/soft bottom systems	x
Erosion		Benthos	x
Geology		Biodiversity aspects	x
Geomorphology		Biogeography	x
Geophysics		Biology	x
Glaciology		Biotechnology	
Global change		Birds	x
Groundwater	x	Boreal forest systems	x
Habitat issues	x	Breeding	x
Heavy metals	x	Coastal/marine systems	x
Hydrology	x	Community studies	x

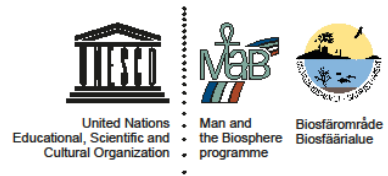
Indicators	x	Conservation	x
Meteorology	x	Coral reefs	
Modeling	x	Degraded areas	
Monitoring/methodologies	x	Desertification	
Nutrients	x	Dune systems	
Physical oceanography		Ecology	x
Pollution, pollutants	x	Ecosystem assessment	
Siltation/sedimentation	x	Ecosystem functioning/structure	x
Soil	x	Ecosystem services	
Speleology		Ecotones	
Topography		Endemic species	
Toxicology		Ethology	
UV radiation	x	Evapotranspiration	
		Evolutionary studies/Palaeoecology	
		Fauna	x
		Fires/fire ecology	x
		Fishes	x
		Flora	x
		Forest systems	x
		Freshwater systems	
		Fungi	x
		Genetic resources	
		Genetically modified organisms	

		Home gardens	
		Indicators	x
		Invertebrates	x
		Island systems/studies	x
		Lagoon systems	x
		Lichens	x
		Mammals	x
		Mangrove systems	
		Mediterranean type systems	
		Microorganisms	
		Migrating populations	x
		Modeling	x
		Monitoring/methodologies	x
		Mountain and highland systems	
		Natural and other resources	x
		Natural medicinal products	
		Perturbations and resilience	x
		Pests/Diseases	
		Phenology	x
		Phytosociology/Succession	
		Plankton	x
		Plants	x

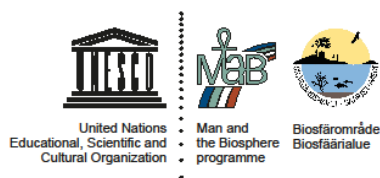
		Polar systems	
		Pollination	
		Population genetics/dynamics	
		Productivity	
		Rare/Endangered species	x
		Reptiles	
		Restoration/Rehabilitation	
		Species (re) introduction	
		Species inventorying	x
		Sub-tropical and temperate rainforest systems	
		Taxonomy	
		Temperate forest systems	
		Temperate grassland systems	
		Tropical dry forest systems	
		Tropical grassland and savannah systems	
		Tropical humid forest systems	
		Tundra systems	
		Vegetation studies	x
		Volcanic/Geothermal systems	
		Wetland systems	
		Wildlife	x

<b>Socio-economic</b>		<b>Integrated monitoring</b>	
Agriculture/Other production systems		Biogeochemical studies	
Agroforestry		Carrying capacity	x
Anthropological studies		Climate change	
Aquaculture	X	Conflict analysis/resolution	
Archaeology		Ecosystem approach	
Bioprospecting		Education and public awareness	
Capacity building		Environmental changes	
Cottage (home-based) industry		Geographic Information System (GIS)	
Cultural aspects		Impact and risk studies	
Demography	x	Indicators	
Economic studies		Indicators of environmental quality	x
Economically important species	X	Infrastructure development	
Energy production systems		Institutional and legal aspects	
Ethnology/traditional practices/knowledge		Integrated studies	
Firewood cutting		Interdisciplinary studies	x
Fishery	x	Land tenure	
Forestry		Land use/Land cover	x
Human health		Landscape inventorying/monitoring	x

Human migration	X	Management issues	x
Hunting	X	Mapping	x
Indicators		Modeling	
Indicators of sustainability		Monitoring/methodologies	
Indigenous people's issues		Planning and zoning measures	
Industry		Policy issues	
Livelihood measures		Remote sensing	
Livestock and related impacts		Rural systems	
Local participation		Sustainable development/use	x
Micro-credits		Transboundary issues/measures	
Mining		Urban systems	
Modeling		Watershed studies/monitoring	x
Monitoring/methodologies			
Natural hazards			
Non-timber forest products	x		
Pastoralism			
People-Nature relations			
Poverty			
Quality economies/marketing			
Recreation	x		
Resource use	x		
Role of women			
Sacred sites	x		



Small business initiatives	X		
Social/Socio-economic aspects			
Stakeholders' interests			
Tourism	x		
Transports			



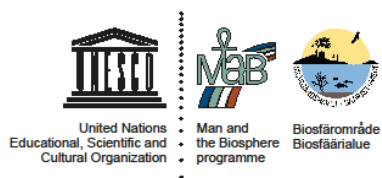
## Annex II to the Biosphere Reserve Periodic Review, January 2013

### Promotion and Communication Materials for the biosphere reserve

*Provide some promotional material regarding the site, notably high quality photos, and/or short videos on the site so as to allow the Secretariat to prepare appropriate files for press events. To this end, a selection of photographs in high resolution (300 dpi), with photo credits and captions and video footage (rushes), without any comments or sub-titles, of professional quality – DV CAM or BETA only, will be needed.*



*In addition, return a signed copy of the following Agreements on Non-Exclusive Rights for photo(s) and video(s).*



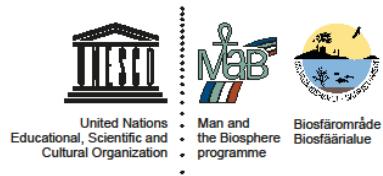
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  - c) The name of the photographer will be cited alongside UNESCO's whenever his/her work is used in any form.
  
2. I certify that:
  - a) I am the sole copyright holder of the photo(s) and am the owner of the rights granted by virtue of this agreement and other rights conferred to me by national legislation and pertinent international conventions on copyright and that I have full rights to enter into this agreement.



b) The photo(s) is/are in no way whatever a violation or an infringement of any existing copyright or licence, and contain(s) nothing obscene, libellous or defamatory.

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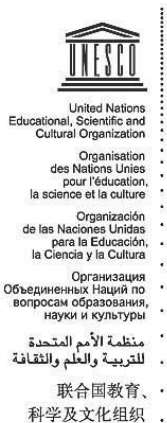
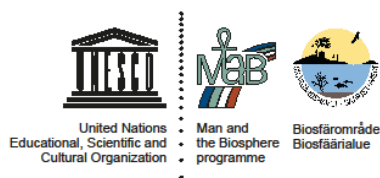
Signature :

Date :

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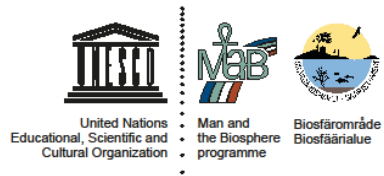
1. a) I the undersigned, copyright-holder of the above mentioned video(s) hereby grant to UNESCO free of charge the non-exclusive right to exploit, publish, reproduce, diffuse, communicate to the public in any form and on any support, including digital, all or part of the photograph(s) and to licence these rights to third parties on the basis of the rights herein vested in UNESCO

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c) The name of the author/copyright holder will be cited alongside UNESCO's whenever his/her work is used in any form.

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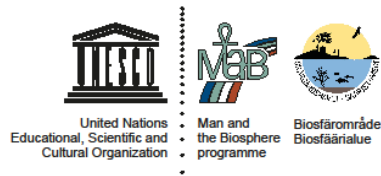
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## **Annex III to the Biosphere Reserve Periodic Review, January 2013**

### **The Statutory Framework of the World Network of Biosphere Reserves**

#### **Introduction**

Within UNESCO's Man and the Biosphere (MAB) programme, biosphere reserves are established to promote and demonstrate a balanced relationship between humans and the biosphere. Biosphere reserves are designated by the International Co-ordinating Council of the MAB Programme, at the request of the State concerned. Biosphere reserves, each of which remains under the sole sovereignty of the State where it is situated and thereby submitted to State legislation only, form a World Network in which participation by the States is voluntary.

The present Statutory Framework of the World Network of Biosphere Reserves has been formulated with the objectives of enhancing the effectiveness of individual biosphere reserves and strengthening common understanding, communication and co-operation at regional and international levels.

This Statutory Framework is intended to contribute to the widespread recognition of biosphere reserves and to encourage and promote good working examples. The delisting procedure foreseen should be considered as an exception to this basically positive approach, and should be applied only after careful examination, paying due respect to the cultural and socio-economic situation of the country, and after consulting the government concerned.

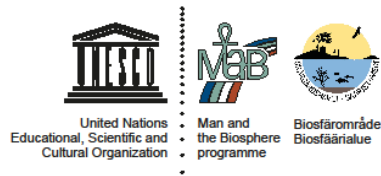
The text provides for the designation, support and promotion of biosphere reserves, while taking account of the diversity of national and local situations. States are encouraged to elaborate and implement national criteria for biosphere reserves which take into account the special conditions of the State concerned.

#### **Article 1 - Definition**

Biosphere reserves are areas of terrestrial and coastal/marine ecosystems or a combination thereof, which are internationally recognized within the framework of UNESCO's programme on Man and the Biosphere (MAB), in accordance with the present Statutory Framework.

#### **Article 2 - World Network of Biosphere Reserves**

1. Biosphere reserves form a worldwide network, known as the World Network of Biosphere Reserves, hereafter called the Network.



2. The Network constitutes a tool for the conservation of biological diversity and the sustainable use of its components, thus contributing to the objectives of the Convention on Biological Diversity and other pertinent conventions and instruments.

3. Individual biosphere reserves remain under the sovereign jurisdiction of the States where they are situated. Under the present Statutory Framework, States take the measures which they deem necessary according to their national legislation.

### **Article 3 - Functions**

In combining the three functions below, biosphere reserves should strive to be sites of excellence to explore and demonstrate approaches to conservation and sustainable development on a regional scale:

(i) conservation - contribute to the conservation of landscapes, ecosystems, species and genetic variation;

(ii) development - foster economic and human development which is socio-culturally and ecologically sustainable;

(iii) logistic support - support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development.

### **Article 4 - Criteria**

General criteria for an area to be qualified for designation as a biosphere reserve:

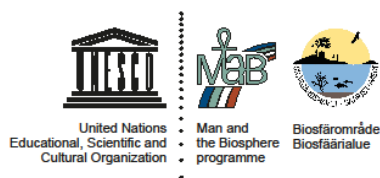
1. It should encompass a mosaic of ecological systems representative of major biogeographic regions, including a gradation of human interventions.

2. It should be of significance for biological diversity conservation.

3. It should provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale.

4. It should have an appropriate size to serve the three functions of biosphere reserves, as set out in Article 3.

5. It should include these functions, through appropriate zonation, recognizing:



(a) a legally constituted core area or areas devoted to long-term protection, according to the conservation objectives of the biosphere reserve, and of sufficient size to meet these objectives;

(b) a buffer zone or zones clearly identified and surrounding or contiguous to the core area or areas, where only activities compatible with the conservation objectives can take place;

(c) an outer transition area where sustainable resource management practices are promoted and developed.

6. Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and carrying out the functions of a biosphere reserve.

7. In addition, provisions should be made for:

(a) mechanisms to manage human use and activities in the buffer zone or zones;

(b) a management policy or plan for the area as a biosphere reserve;

(c) a designated authority or mechanism to implement this policy or plan;

(d) programmes for research, monitoring, education and training.

## **Article 5 - Designation procedure**

1. Biosphere reserves are designated for inclusion in the Network by the International Co-ordinating Council (ICC) of the MAB programme in accordance with the following procedure:

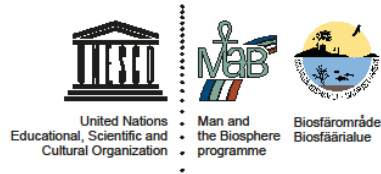
(a) States, through National MAB Committees where appropriate, forward nominations with supporting documentation to the secretariat after having reviewed potential sites, taking into account the criteria as defined in Article 4;

(b) the secretariat verifies the content and supporting documentation: in the case of incomplete nomination, the secretariat requests the missing information from the nominating State;

(c) nominations will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC;

(d) ICC of the MAB programme takes a decision on nominations for designation. The Director-General of UNESCO notifies the State concerned of the decision of ICC.

2. States are encouraged to examine and improve the adequacy of any existing biosphere reserve, and to propose extension as appropriate, to enable it to function fully within the Network. Proposals for extension follow the same procedure as described above for new designations.



3. Biosphere reserves which have been designated before the adoption of the present Statutory Framework are considered to be already part of the Network. The provisions of the Statutory Framework therefore apply to them.

### **Article 6 - Publicity**

1. The designation of an area as a biosphere reserve should be given appropriate publicity by the State and authorities concerned, including commemorative plaques and dissemination of information material.

2. Biosphere reserves within the Network, as well as the objectives, should be given appropriate and continuing promotion.

### **Article 7 - Participation in the Network**

1. States participate in or facilitate co-operative activities of the Network, including scientific research and monitoring, at the global, regional and sub-regional levels.

2. The appropriate authorities should make available the results of research, associated publications and other data, taking into account intellectual property rights, in order to ensure the proper functioning of the Network and maximize the benefits from information exchanges.

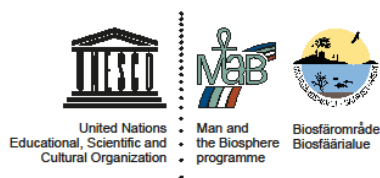
3. States and appropriate authorities should promote environmental education and training, as well as the development of human resources, in co-operation with other biosphere reserves in the Network.

### **Article 8 - Regional and thematic subnetworks**

States should encourage the constitution and co-operative operation of regional and/or thematic subnetworks of biosphere reserves, and promote development of information exchanges, including electronic information, within the framework of these subnetworks.

### **Article 9 - Periodic review**

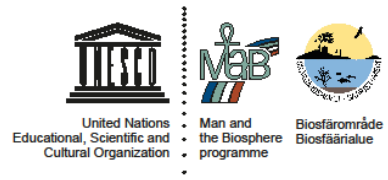
1. The status of each biosphere reserve should be subject to a periodic review every ten years, based on a report prepared by the concerned authority, on the basis of the criteria of Article 4, and forwarded to the secretariat by the State concerned.



2. The report will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC.
3. ICC will examine the periodic reports from States concerned.
4. If ICC considers that the status or management of the biosphere reserve is satisfactory, or has improved since designation or the last review, this will be formally recognized by ICC.
5. If ICC considers that the biosphere reserve no longer satisfies the criteria contained in Article 4, it may recommend that the State concerned take measures to ensure conformity with the provisions of Article 4, taking into account the cultural and socio-economic context of the State concerned. ICC indicates to the secretariat actions that it should take to assist the State concerned in the implementation of such measures.
6. Should ICC find that the biosphere reserve in question still does not satisfy the criteria contained in Article 4, within a reasonable period, the area will no longer be referred to as a biosphere reserve which is part of the Network.
7. The Director-General of UNESCO notifies the State concerned of the decision of ICC.
8. Should a State wish to remove a biosphere reserve under its jurisdiction from the Network, it notifies the secretariat. This notification shall be transmitted to ICC for information. The area will then no longer be referred to as a biosphere reserve which is part of the Network.

## **Article 10 - Secretariat**

1. UNESCO shall act as the secretariat of the Network and be responsible for its functioning and promotion. The secretariat shall facilitate communication and interaction among individual biosphere reserves and among experts. UNESCO shall also develop and maintain a worldwide accessible information system on biosphere reserves, to be linked to other relevant initiatives.
2. In order to reinforce individual biosphere reserves and the functioning of the Network and sub-networks, UNESCO shall seek financial support from bilateral and multilateral sources.
3. The list of biosphere reserves forming part of the Network, their objectives and descriptive details, shall be updated, published and distributed by the secretariat periodically.



United Nations  
Educational, Scientific and  
Cultural Organization

Man and  
the Biosphere  
programme

Biosfärområde  
Biosfärianalue