

PERIODIC REVIEW FOR BIOSPHERE RESERVE

[January 2013]

INTRODUCTION

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.

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.

The information presented on this periodic review will be used in a number of ways by UNESCO:

- (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;
- (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.

Kindly indicate if any part of this report should remain confidential.

The form consists of three parts:

- Part one is a summary highlighting the main changes in the biosphere reserve during the reporting period.
- Part two is more descriptive and detailed, referring to the human, physical and biological characteristics as well as to the institutional aspects.
- 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).

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:

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PART I: SUMMARY

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- a) **Name of the biosphere reserve:** Archipelago Sea Area Biosphere Reserve, Skärgårdshavets biosfärområde (SV), Saaristomeren biosfäärialue (FI)
- b) **Country:** Finland
- c) **Year of designation:** 1994
- d) **Year(s) of periodic review(s):** 2005, 2016
- e) **Previous recommendation(s) made by the International Co-ordinating Council (MAB- ICC), if applicable:**

The response from the ICC in 2017 to the Periodic Review of the Archipelago Sea Area Biosphere Reserve, submitted in 2016, had no recommendations, only positive feedback.

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

No follow-up actions were needed.

g) Update on the implementation of measures to achieve the objectives of the biosphere reserve.

The Biosphere Reserve Office (BR Office) has developed its methods for integrating the three main functions of biosphere reserves (BRs) into its working processes. Four themes of main concern for the BR have been chosen for the strategic period of 2023–2027. These are: 1) everyone can help preserve biodiversity, 2) a healthy sea for the vitality of the archipelago, 3) thriving islands where the individual is a strength and 4) the archipelago thrives on a diverse and sustainable economy. Three operating principles that permeate all the activities of the BR were also set: 1) through knowledge and experiences, people's relationship with nature and culture is deepened and their capacity to act is strengthened to contribute to a sustainable future, 2) the BR with its UNESCO status unites and inspires, and shared successes are celebrated by everyone, and 3) the BR is a model for sustainable development locally, nationally and internationally.

The BR produces an annual action plan where the objectives for the BR work are set. An annual report is then produced to evaluate the effectiveness of the work in progress. Both the action plan and the annual report are reviewed and accepted by the Steering Committee of the BR and by the regional Centre for Economic Development, Transport and the Environment (ELY Centre). The main work methods used to achieve the objectives are 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) seminars and workshops for spreading knowledge and discussion of important themes concerning sustainable solutions for the archipelago, and e) international collaboration in the MAB networks.

Over the last decade, the BR has put a lot of focus on educational activities and participatory programmes to strengthen the sense of belonging and empower people to act for a sustainable future

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

The process actually started with strategy work for the Strategy 2023–2027. Due to limited personnel resources, we chose to time the strategy process to be slightly before the periodic review. The process started in 2022 by reviewing the objectives and activities of the BR together with partners and stakeholders, using surveys, workshops and meetings. During that process the new vision and objectives were set.

In 2024, a seminar summarising the last 30 years of the BR's history was arranged. The two-day-long seminar had an emphasis on the people and the collaboration as a central part of the work with the biosphere reserve. The role of the BR was reviewed and discussed in presentations about BR activities, reflections from Biosphere Ambassadors and Partners such as local farmers, entrepreneurs and other active inhabitants, and discussion of changes in the management and organisational structure during the past 30 years. The work of the BR was summarised for an anniversary publication published by the magazine *Tidskriften Skärgård* published by the Archipelago Institute at Åbo Akademi University (ÅAU).

In 2025, further discussions were held with members of the Steering Committee and other partner organisations and stakeholders of the BR. The coordinator was responsible for the periodic review and writing the text, together with the project team of the BR Office and experts from partner organisations. For the report, experts have been interviewed and consulted.

List of consulted experts:

i) Area and spatial configuration:

	Previous report (nomination form or periodic review) and date	Proposed changes (if any)
Area of terrestrial Core Area(s)	3,000 ha	4,173 ha

Area of terrestrial Buffer Zone(s)	14,000 ha	11,618 ha
Area of terrestrial Transition Area(s)	65,000 ha (changed 2010)	67,801 ha
Area of marine Core Area(s)	47,000 ha	49,250 ha
Area of marine Buffer Zone(s)	218,000 ha	246,094 ha
Size of marine Transition Area(s)	193,000 ha (changed 2010)	159,663 ha

j) Human population of the BR:

	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 (2005)	/ 12 (2023)
Buffer Zone(s) (permanent and seasonally)	100 (2015) / seasonal about five times	88 (2023) / (area enlarged 2010) seasonal about five times
Transition Area(s) (permanent and seasonally)	3550 (2015) / seasonal about five times	3,205 (2023) / (area enlarged 2010) / seasonal about five times

k) 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
EUR 62,000 (BR Office budget) + main projects 2016: EUR 150,958	EUR 83,458 (BR Office budget) + main projects 2024: EUR 261,032

The budget includes payments from the state for the employment of a coordinator and from different funds for some of the regularly arranged events. The projects are: *Unga för en hållbar framtid* ('Youth for a sustainable future') and *Bobarhet på Pargas öar* ('Habitability on islands of Pargas') run by the Town of Pargas, 'SALT' run by ÅAU, and 'Supported by Nature' run by Turku University of Applied Sciences (TUAS). These projects play a central role in the BR

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and also in supplying personnel resources to the BR Office. There were several other projects run in or about the BR in cooperation with the BR office.

l) 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 the project activities of the BR have involved implementing the goals of international agreements and conventions. Here, we will list the most relevant for our BR. In addition to these, the Archipelago Sea Area Biosphere Reserve (ASABR) naturally also contributes to the strategies and programmes of the UNESCO MAB Programme.

The European Landscape Convention, ratified by Finland in 2005, promotes protection, management and planning of European landscapes and organises European cooperation on landscape issues. In 2014, the government approved the national Cultural Environment Strategy 2014–2020, supplemented with an implementation plan in 2015. Two of the 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 landscapes 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 were 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 utilising 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 livestock farmers in the management of the cultural landscapes in the region, by raising awareness of the values of the landscape and by promoting education on the management of the landscapes for 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 is currently taking part in a project developing a cultural environment programme for the Åboland region.

Kunming-Montreal Global Diversity Framework (GBF) and Convention on Biological Diversity (CBD) 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 the favourable 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 utilisation and development of biodiversity and natural resources in Finland, without jeopardising biodiversity, the vital needs of future generations, or livelihoods based on natural resources.

The ASABR has contributed to four publications considering how the BRs contribute to the Global Biodiversity Framework. These publications present findings from a project funded by the Nordic Council of Ministers’ Nordic Working Group for Biological Diversity – MAB LAB: Man, and the Biosphere – Local Actions for the New Global Framework for Biodiversity:

[UNESCO Biosphere Reserves – A Path to Local Holistic Sustainability](#). A guide to establish UNESCO Biosphere Reserves in the Nordic Countries

[Local actions for biodiversity – From good practice to next practice in the Nordic Biosphere Reserves: How Nordic UNESCO Biosphere Reserves can support the implementation of the Global Biodiversity Framework](#)

[Sample collection – Local Actions for Biodiversity: Inspiring examples from the Nordic UNESCO Biosphere Reserves](#)

[Local actions for the new Global Biodiversity Framework](#) How do we develop co-existence with nature through the UNESCO Biosphere Reserves?

Agenda 2030 is a global initiative adopted by the United Nations in 2015, aiming for sustainable development across economic, social, and environmental dimensions. **The Finnish national Agenda 2030** action plan was first drafted in 2017 and it was updated 2020. The action plan lists the measures by which the government plans to promote the achievement of each of the 17 Sustainable Development Goals (SDGs). The action plan goes through each SDG and describes measures taken by the government to promote Agenda 2030 in Finland and globally (Prime Minister's Office, 11 2020). The BRs in Finland are not mentioned in the action plan. Both BRs are now working towards changing this.

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

The Bern Convention – the 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. The EU Biodiversity Strategy 2030 is the EU's plan to put biodiversity on the path to recovery by 2030. It contains specific commitments and actions to protect nature and reverse the degradation of ecosystems, building on existing nature laws, like the EU Habitat and Bird Directives.

Within the ASABR, 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) (four areas). The BR contributes to the management of the Natura sites by being part of projects aimed at Natura 2000 areas, such as EU LIFE projects (see part 4, conservation function).

The Helmi Programme is a joint initiative of the Ministry of the Environment and the Ministry of Agriculture and Forestry. The programme is implemented by the ELY Centres, Metsähallitus (a state-owned enterprise providing environmental services including the use, management and protection of state-owned land and water), the Finnish Environment Institute (SYKE), the Finnish Forest Centre, the Finnish Wildlife Agency, municipalities and NGOs. Actions are carried out both within protected areas and outside them. The main goal of the Helmi Programme is to examine habitats and the restoration and management measures they require as broad entities, in collaboration with multiple stakeholders. Restoration and management efforts are concentrated in order to maximise their effectiveness for biodiversity. All actions under the programme are based on the voluntary participation of landowners. Municipalities and organisations can apply for grants from the Helmi funding programme for projects that aim to improve the condition of habitats. There have been several projects conducted with Helmi funding in the region of the BR. The BR Office has contributed by spreading information about the programme, contributing to project planning and raising awareness about the habitat restoration work.

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The current **Finnish Nature Panel** addressed two assessment reports published in December 2024 by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and describes BRs as excellent tools for safeguarding biodiversity from a societal involvement perspective, providing a short description of the ASABR. The Finnish Nature Panel is an independent scientific panel that supports the planning of and decision-making on nature policy. The role and tasks of the Nature Panel are defined in the Nature Conservation Act. The Panel's statements and reports are based on scientific evidence and multidisciplinary expertise.

One of the IPBES reports examines the root causes of biodiversity loss, the underlying factors and barriers to the sustainability transition, and presents options for achieving the 2050 vision for biodiversity. This report is called the 'Sustainability Transition Report'. The other assessment report explores the interconnections between biodiversity, water, the food system, health, and climate change. It offers more concrete means by which societies can be steered toward a sustainability transition. This report is called the 'Nexus Report'. The sustainability transition is a comprehensive approach to halting biodiversity loss and mitigating climate change. It entails a profound transformation of worldviews, as well as changes in the structures and functions of society, to promote sustainable use of natural resources, the recovery of biodiversity, and the development of sustainable lifestyles. The BRs can provide good sustainability transition examples.

Laako, H at al. 2024. Kestävyyssmurros edellyttää johdonmukaista ja läpileikkaavaa politiikkaa – Hallitustenvälisen luontopaneelin (IPBES) arviointiraporttien keskeiset viestit ja suosituksia kansallisen luontopolitiikan suunnitteluun ja päätöksentekoon. (Translation: The sustainability transition requires coherent and cross-sectoral policy. Key messages and recommendations from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) assessment reports for the planning and decision-making of national nature policy)

Suomen Luontopaneelin julkaisuja 4/2024. [Kestävyyssmurros edellyttää johdonmukaista ja läpileikkaavaa politiikkaa](#)

The **IPBES** published two assessments in 2024:

IPBES (2024). Summary for Policymakers of the Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. O'Brien, K. at al. IPBES secretariat, Bonn, Germany. DOI: <https://doi.org/10.5281/zenodo.11382230>.

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IPBES (2024). Summary for Policymakers of the Thematic Assessment Report on the Interlinkages among Biodiversity, Water, Food and Health of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. McElwee, P. D. et al. IPBES secretariat, Bonn, Germany. DOI: <https://doi.org/10.5281/zenodo.13850289>.

Projects implemented in cooperation with various partners of the BR form the core of its activities, which aim at sustainable development and promote the sustainability transition.

Finland protects the Baltic Sea through national measures, cooperation with neighbouring states and 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 – the Convention on the Protection of the Marine Environment of the Baltic Sea Area**, which 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. The Baltic Sea Action Plan (BSAP) is HELCOM's strategic programme of measures and actions for achieving good environmental status for the sea. The BSAP was updated in 2021 and it is divided into four segments with specific goals: biodiversity, eutrophication, hazardous substances and litter, and sea-based activities. The aim of the **EU Marine Strategy Framework Directive (MSFD)** 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 mainly by rising awareness and strengthening 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 for the Archipelago Sea Programme, a cooperative environmental

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research and protection programme that is involved in the implementation of the **Water Framework Directive of the EU from 2000** (see 2.3.4).

The Paris Agreement To tackle climate change and its negative impacts, world leaders at the UN Climate Change Conference (COP21) in Paris reached an agreement in 2015. The Paris Agreement provides a durable framework guiding the global effort for decades to come. It marks the beginning of a shift towards a net-zero emissions world. Implementation of the agreement is also essential for the achievement of the SDGs. The aim is to substantially reduce global greenhouse gas emissions to keep the global temperature increase to well below 2 °C above pre-industrial levels and pursue efforts to limit it to 1.5 °C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change.

The BR has contributed to mitigating climate change through its educational activities – partly through pedagogical work with children and young people, and partly through seminars and workshops with key stakeholders in the archipelago and the local population. In youth work, there has also been a specific focus on young people's environmental emotions and how to support their wellbeing in relation to coping with climate change.

The EU Nature Restoration Law, agreed with member states of the EU in 2024, will restore degraded ecosystems in all member states, help achieve the EU's climate and biodiversity objectives and enhance food security. To reach the overall EU targets, member states must restore at least 30% of habitats covered by the new law (from forests, grasslands and wetlands to rivers, lakes and coral beds) from a poor to a good condition by 2030, increasing to 60% by 2040, and 90% by 2050. In line with parliament's position, EU countries should give priority to Natura 2000 areas until 2030. Once in a good condition, EU countries shall ensure an area does not significantly deteriorate. Member states will also have to adopt national restoration plans detailing how they intend to achieve these targets. The national restoration plan of Finland could have significant implications for the restoration of both cultural biotopes and marine habitats in the Archipelago Sea.

PART II: PERIODIC REVIEW REPORT

1. BIOSPHERE RESERVE:

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1.1 Year designated: 1994**1.2 Year of the first periodic review and of any following periodic review(s) (when appropriate):**

2005, 2016

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.

No follow-up actions needed.

1.4 Other observations or comments on the above.**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 for BR management.

Clerks and local politicians from Pargas and Kimitoön

Metsähallitus's Parks and Wildlife Finland unit, with responsibility for the Archipelago National Park

The University of Turku and the Archipelago Research Institute

Åbo Akademi University and the Archipelago Institute

The Regional Council of Southwest Finland

Other stakeholders involved:

Experts from national organisations like the National Resources Institute of Finland (LUKE) from local organisations like the Professional Fisheries Association of Åboland, Turku University of Applied Science, the regional agricultural advisory organisation - Finska hushållningssällskapet, Same Boat Leader Action Group and Åboland Archipelago Foundation.

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Local inhabitants, entrepreneurs, representatives from different associations, researchers and clerks at the 30th 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 2024, by arranging a seminar featuring a summary covering the 30 years in the history of the BR. At the anniversary seminar, the broad cooperation and participation of local people was strongly emphasised through the various speaking tours. A separate day was reserved for discussions on partnership and regenerative tourism.

For the anniversary, a publication was published by the periodical *Tidskriften Skärgård*, presenting articles about the BR. www.skargard.fi, presenting articles about the Biosphere Reserve during the last decade. A few articles open for access are found here:

<https://www.abo.fi/centret-for-livslangt-larande/katja-jobbar-for-att-ge-handlingskraft-at-andra/>

<https://www.abo.fi/centret-for-livslangt-larande/att-arbeta-med-mathantverk-ett-vanligt-jobb-eller-en-galen-passion/>

<https://www.abo.fi/centret-for-livslangt-larande/floran-pa-uto-och-jurmo-i-dag-och-for-hundra-ar-sen/>

In 2024–25 the coordinator compiled information from partner organisations and stakeholders of the BR for the report, mostly through open co-working documents. Several experts were consulted during the process, mainly by email or through discussions.

Due to limited resources available for working on the periodic review, we have aligned the annual report on the activities of the BR with selected questions from the periodic review. We have also focused more on the stakeholder process in developing the BR strategy, which naturally provides valuable input for the periodic review.

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

A seminar covering the last 30 years was organised. The periodic review process was discussed and reflected on at three Steering Committee meetings. The members of the Steering Committee, who were involved throughout the process, are experts in different subjects concerning the BR. Additional consultations were conducted with experts from the universities, municipalities and local associations, for example by contacting them directly. Several persons from the BR Office were involved.

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1.5.4 Were they well attended, with full and balanced representation?

(Describe participation and stakeholders).

About 120 people attended the 30th anniversary seminar held on 1–2 March 2024. The representation of stakeholders and genders were balanced. Among the participants were local inhabitants of all ages, entrepreneurs, farmers, several local organisations, 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.

We continue working on a broad front to promote a vibrant archipelago. There are constant challenges when it comes to the habitability of the archipelago. The local economy has been heavily affected by changes in the national and global economy. There has been severe economising and centralising of municipal services, especially in rural areas. The archipelago area is continuously under pressure from reduced services. The archipelago is still facing depopulation, which naturally is enhanced by severe cuts resulting in the closing of local schools and the centralisation and reduction in healthcare services and ferry capacity between the islands. The condition of the sea strongly impacts not only the lives of all archipelago residents but also the area's attractiveness. The archipelago features high levels of biodiversity, which can only be maintained through cooperation between local communities, authorities, researchers, and associations. The BR office is largely focusing its activities on strengthening local society, for example by promoting new niches for livelihood and promoting immigration. Within the BR, we see it as most essential to foster a sense of belonging and to strengthen the agency of people – from young to old – because everyone is needed in the work for a sustainable future in the archipelago.

First the COVID-19 pandemic, and then the war in Ukraine have brought changes to the Archipelago Sea area too, both in terms of the economy and security. The pandemic created a positive boost for many local entrepreneurs, as part-time residents spent more time in their holiday homes while working remotely. Domestic tourism also increased. The war in Ukraine has, of course, affected everyone on many levels, but in purely economic terms it led to rising prices for both building materials and food. Unfortunately, this has been a challenge for businesses and people in the archipelago, who already struggle with high costs due to long

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transport distances for goods. But, on the other hand, it does not seem to have affected the construction work in the Archipelago, maybe since people are spending more time in their second houses.

The BR Office has three administrative partners: the ELY Centre, the Town of Pargas and the Municipality of Kimitoön. The BR Office is administered by Pargas, at the Department for Livelihood. The cooperative model allows for even stronger involvement of the municipalities, which has been an important goal in developing the management structure of the BR. The Steering Committee has been increased by four new ordinary members, clerks representing the municipalities, a representative from the Regional Council of Southwest Finland and a youth delegate. The physical office is now located in **Archipelago Centre Korpoström**, in the heart of the BR. Archipelago Centre Korpoström opens up completely new opportunities for visibility and activities for groups, such as partners, school groups, and tourists, as well as a larger team working for the same goals.

The BR function for enhancing sustainable development in the Archipelago Sea area now, in this time of centralisations, plays an even more important role for island societies. Projects run by the BR Office and its partners are always guided by the three pillars of the MAB Programme: conserving biodiversity, promoting sustainable development, and supporting education and research on sustainability. The new strategy strongly emphasises broad collaboration and individual agency in work for a sustainable future. Over the past decade, the work of the BR has increasingly focused on participation and sharing both the joy of success and responsibilities for shaping a sustainable future. The key factors have been the development of the **Biosphere Ambassadors Programme** and the **Biosphere Partner Programme**. The Biosphere Ambassador Programme is intended for engaging with private persons and using their knowledge, interest, and commitment to spread information about our BR to others. A Biosphere Partner is an organisation or an enterprise that has committed to contributing to the agenda of the BR. The programme of the **Biosphere Academy** also has an important role in the work of the BR and strongly supports the strengthening of the sense of belonging and empowerment of children and young people. In recent years, significant efforts have been made to promote educational activities with a particular focus on children and young people. Through the Biosphere Academy's programmes, children and young people have the opportunity to increase their knowledge of their local environment and strengthen their connection to nature through outdoor experiences and discoveries. The Biosphere Academy with its large number of different activities has also inspired many partners both nationally and internationally and similar activities have been developed in many other regions.

The recently activated **Habitability** groups likewise provide space and tools for involving people in the activities of the BR (See 2.4.3).

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

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organisations administrate all projects. The BR has been involved in several projects run by the municipalities, universities, forest services, the ELY Centre and NGOs.

The BR Office has been running development projects for strengthening the diversity of livelihoods. With the help of projects with a focus on artisan food, we started up an educational programme called **Mathantverk** for artisan food entrepreneurs (see 5.10).

The number of permanent inhabitants is still decreasing, while numbers of part-time inhabitants and tourists increase. The UN tourist to local ratio in the archipelago of Pargas, where tourist is including both visitors and part-time living people, is 153:1 and on Iniö islands the same ratio is 234:1 (unpublished results from the Habitability -analyses of ASABR and Town of Pargas). 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 – in some places almost to the limit of social and ecological acceptance. The increasing number of part-time inhabitants and tourists are of high importance for the local economy. Many entrepreneurs make the majority of their income during the summer. 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 number 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 National Association of Finnish Islands (FÖSS)**, founded in 2006 to give the archipelago residents a common voice both nationally and at EU level, has now established itself as an important actor in safeguarding the interests of the archipelago community. FÖSS has played a key role in many issues concerning, among other things, telephone connections, children and young people, and overall living conditions in the archipelago.

The Åboland Archipelago Foundation (ÅSS), in itself an interesting outcome of the development of new tools for promoting sustainable living and livelihood in the BR, has presented new models for sustainable ways to enhance migration and job opportunities on the small islands of the archipelago. The foundation owns partly or entirely four properties that are important for cultural history and socio-economic reasons in the BR, all of which have quite different stories and purposes for ÅSS. The foundation also administers a biosphere fund. (See 5.4, 5.10).

The BR also works long-term to support livestock farms, which play a central role in maintaining biodiversity on the islands on the so-called cultural biotopes. There is broad collaboration to promote care for these cultural biotopes, which are semi-natural grasslands grazed by domestic animals. During the last decade, the number of managed pastures increased due to local measures by many actors in the BR. Metsähallitus, the ELY Centre and the BR Office have all together, with different measures, promoted the management of the cultural landscape. The recently established **national association for producers of meat from animals grazed on natural pastures** (Naturbeteskött producenterna rf.), has had an important role in safeguarding the interest of the animal farmers at a national level. The EU subsidies for

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the management of cultural landscapes and preserving biodiversity are of great importance for the results. There is a great interest among both landowners and livestock farmers, but the costs can be unreasonably high and the many administrative challenges complicated or even obstructive, due to the challenging geographical settings and competing aims.

In recent decades, nutrient pollution inputs into the Archipelago Sea from towns, cities and industrial facilities have declined considerably, thanks to improvements in wastewater treatment. Internal nutrient loading of the sea still affects the sea heavily and slows its recovery. Agriculture has had a major negative impact on the state of the Archipelago Sea for decades. However, in the past decade, significant investments have been made in water protection within agriculture by reducing nutrient leakage in various ways. The challenge of increasing drought due to climate change can already be observed through reduced snowfall in winter and long dry periods during spring and early summer. At the same time, climate change is bringing heavier rainfall, which in turn increases nutrient runoff into the sea and accelerates the eutrophication of the Archipelago Sea. Other concerns are microplastics from wastewater, invasive species and increased cargo shipping in the Baltic Sea.

Coastal fishing has continued to decrease during the period of the report. The small-scale fishery operations are struggling with obstacles such as growing seal and cormorant populations and changes in the balance of fish species. Due to eutrophication, fish catches consisting of low-value fish have radically increased. The BR Office raises awareness of the condition of the sea, as well as putting a lot of effort into increasing knowledge of marine nature and strengthening the relationship between people and nature. The ambitious work of the **John Nurminen Foundation** is promoting the use of the so-called 'trash fish'. The possible economic benefits from low-value fish species can develop fishery operations in new directions. The increased export of fish is also of high importance in the development of the blue economy. The local economy in the BR will eventually benefit from the development of new niches in fishing and the BR Office coordinated a project that produced educational material for schools about possibilities and innovations in connection with the small-scale coastal fishing industry.

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 5,400 km², of which about 85% is water. About 3,200 people live permanently within the BR. The whole Archipelago Sea (larger than the BR) consists of about 13,000 islands that are a hectare or larger in size and as many as 40,000 islands when including all smaller islands and skerries. 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. About 100 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 23 m. In the winter, the sea can be covered with ice, but during recent 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; Baltic brackish water archipelago (according to Udvardy's classification system), with underwater Baltic sea habitats and Baltic coastal habitats.

Major habitats & land cover types: Baltic coastal habitats and Baltic sea habitats (underwater) in addition to temperate broadleaf forests and woodland, remarkably wide rocky outcrops, rocky pine forests and semi-natural grasslands.

In the outer archipelago, small treeless islands and islets are major habitat type, covered mainly by rocky outcrops, gravel and stony beaches. On inner and on bigger islands coniferous forests characterised by Scots pine (*Pinus sylvestris*), spruce (*Picea abies*) and birch (*Betula pubescens*); mull-soil forest with spruce, birch and aspen (*Populus tremula*), characterised 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. The 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): 60⁰N; 22⁰E

Total Area (ha): 539,000 of which 455,000 is water

Core area(s): 53,000 of which 49,000 is water

Buffer zone(s): 258,000 of which 246,000 is water

Transition area(s): 228,000 of which 160,000 is water

Altitudinal range -105 to +50:

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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):

Cardinal points:	Latitude	Longitude
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 3,305 (2023). Before the revision of the borders by the BR in 2010, the area was smaller and the population was only 900 persons. With the enlargement of the area, the population of the BR increased to 3,600 persons in 2009, but decreased to 3,550 in 2015, by the time of the last periodic review. In general, there is a trend of a decreasing population, but the decrease has 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. A total of 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).**

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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 the programme METSO (see 4.2), for example. The Archipelago Sea is included in the NATURA 2000-network as an SCI and SPA. In addition, there are 21 other areas in the BR included in the network. The largest private marine protection area in the Archipelago Sea was established in the Gullkrona region in 2022. The landowners of the area – the local fishing community – made a unanimous decision to establish the conservation area and now they serve as a model for others.

The Finnish Defence Forces left Örö Coastal Fort in 2014, at which point the island was incorporated into the Archipelago National Park. Örö's century-long period as a coastal fort ended and the previously closed island was opened to the public. Metsähallitus aims to safeguard Örö's rich cultural heritage and protect its exceptionally diverse nature by developing the island into an attractive natural and cultural destination that complements the offerings of the Archipelago National Park.

The continuous transformations of the cultural landscapes, due to the depopulation and changes in agriculture, have been a central issue for the BR since its initiation. Since the old cultural landscapes are no longer cultivated by humans for use as pastures or hay meadows, the open landscapes are becoming more densely vegetated and losing biodiversity. In general, the decrease in human intervention within the cultural landscapes is resulting in decreasing biodiversity.

During the 10 year period, numerous new sites were restored and managed both within and outside the national park. A new action plan to strengthen the ecological network by prioritising Archipelago Sea nature management was composed. The Helmi programme and three LIFE projects restored habitats during these years. Underwater management was also piloted. The results were positive, but new challenges have come up.

The national park has a lack of resources for the management of all the overgrown cultural biotopes. There is also still a lack of available farm animals for grazing. The animal farmers have always had many challenges with the cost-effectiveness of the preservation work and are now struggling with new criteria of the agri-environmental scheme for the grazing land. This will have an enormous effect on the preservation of biodiversity on semi-natural grassland.

The BR Office has been promoting cooperation in the management of cultural landscapes. It has also raised awareness of the values linked to the cultural landscapes and the importance of the work done by the local farmers and the development of new products from animals grazing

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on semi-natural meadows, like ‘meadow meat’ (products from animals grazed on semi-natural meadows).

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.

The changes within the marine environment are still probably the greatest. Habitats like bladder wrack belts, *Fucus vesiculosus*, sea grass meadows of *Zostera marina* and blue mussel beds, *Mytilus edulis* in particular are threatened by eutrophication and overgrowth of filamentous algae. The hypoxic areas at the deep bottom of the sea are also increasing due to eutrophication.

The ecological balance and the structure of the fish fauna have changed due to human activities and the eutrophication of the sea. Numbers of fish species with economic value, like flounder and trout, have decreased and numbers of others less interesting for the fishing industry, for example cyprinids, have increased. Cormorant, *Phalacrocorax carbo*, numbers have increased radically due to the nutrient-rich marine environment and locally they have become a plague on the coastal fishing industry (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 fishing industry, mainly because of the damage caused to fishing equipment.

Increased awareness of the marine environment is of high importance for conservation work. The condition of the Baltic Sea and the Archipelago Sea has a negative impact on the biodiversity of marine habitats. The nutritional input from agriculture and sewage have decreased significantly, but the positive effects are not yet being seen. Knowledge of the marine habitats has increased along with the major marine inventories that have taken place since 2000 (see 4.3), which are of high importance for the conservation activities. The Archipelago Sea Programme is based on cooperation and aims to reduce nutrient loading and promote nutrient recycling in the Archipelago Sea area, making it a model region for nutrient circulation to improve the state of the water and the coastal area of the Archipelago Sea (see 4.3).

The BR Office has primarily focused on sharing information about the condition of the sea through various public events or through educational work with the Biosphere Academy. One especially important activity is the Kids’ Lab (see 2.4.9).

Climate change is present in the Archipelago Sea. Diminishing ice and snow cover in addition to increasing temperatures and other changes are already having a strong impact on both coastal

and underwater habitats and species. Mitigation of the effects on species and habitats will be a major issue during coming years.

2.2.5 Update on the development function, including main changes since last report.

(Note briefly here and refer to 5 below).

Agriculture, fishing and forestry are traditional livelihoods in the BR, but their importance has steadily been decreasing over a longer period. Governmental employment in the region has also been of great importance, as has employment by the military, the coast guard 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 sources of livelihoods. Since the COVID-19 pandemic, remote work opportunities have grown enormously, giving archipelago residents more job options and likely contributing to immigration as well as increased remote work from summer cottages and second homes.

A special feature of the area is the large number 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 for a longer season. The large number of people moving around in the archipelago, including both part-time inhabitants and tourists, plays a crucial role in the success of the local entrepreneurs, e.g. those running shops, restaurants, construction and other services, which clearly offers economic benefits for the local society.

Agriculture in the area has always been small-scale, because of the nature and the geology of the area. The islands are small and the 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 has had a major negative impact on the state of the Archipelago Sea for decades. However, in the past decade, significant investments have been made in water protection within agriculture by reducing nutrient leakage in various ways.

Livestock 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 livestock farmers to brand their products as quality products, such as meadow meat, if they conduct management of cultural habitats. Since 2024, grazing areas that were previously approved no longer fulfil the Finnish Food Authority's new interpretations and instructions for environmental agreements. Many farms are now losing income from the agreements. In particular in the Åboland archipelago, where the costs of grazing animals on the islets are high, the loss of income is a severe blow to livestock farmers. The preservation of biodiversity is not fully taken into account in the new interpretations.

The BR Office supports local development by promoting **local food and small-scale food processing** (see 5.10) in the region. Over the last five years, several projects within the food sector have been realised. *Mathantverk* (artisan food) is a new concept that is particularly well

suited for small-scale surroundings like the archipelago. In cooperation with other regions in Finland, a training programme for different trades within food craftsmanship started in 2013. Currently, the training programme is running for the second time and spans 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.

Commercial fishing in the ASABR is a traditional livelihood struggling with economic viability. The number of professional fishermen in the Archipelago Sea has been decreasing since the 1980s. There has been a constant drop in profitability 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 species caught. The competitiveness of seals and cormorants for 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 changes in the ecological balance. The collaboration between fishing operators, aquaculture, and feed producers in creating Baltic Sea feed is an important part of the circular economy. A fishmeal factory established in 2015 in Kasnäs has played a significant role in the development of fish feed based on Baltic Sea fish

The Archipelago Sea BR Office pays significant attention to taking into account the possibility of **halting the depopulation of the archipelago** in all activities and projects that are conducted in connection with the BR (see 5.4). The BR was centrally involved in 2008, when the ÅSS was founded. The BR has had a fantastic opportunity to strengthen tourism and the local economy through the work of the ÅSS. By purchasing archipelago properties, the aim is to promote all-year-round accommodation and activities, thus preventing these socially and culturally important estates from being solely used as places of private leisure. The foundation has four important properties that it owns partly or entirely. All of them are very different from each other. The foundation works to promote a thriving archipelago by promoting sustainable economic, ecological and socio-cultural development in the Archipelago Sea. The foundation works closely with the BR and is administering the BR Fund, which has opened new opportunities for the BR Office.

Over the past decade, the work of the BR has increasingly focused on participation and sharing both the joy of success and responsibilities for shaping a sustainable future. The key factors have been the development of the Biosphere Ambassadors programme and the Biosphere Partners programme. Alongside these is the Biosphere Academy programme, which also strongly supports the strengthening of the sense of belonging and empowerment of children and young people. The recently activated Habitability groups likewise provide space and tools for involving people in the activities of the BR.

2.2.6 Update on logistic support function, including main changes since last report.

(Note briefly here and refer to 6 below).

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A central task of the BR 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. Over the past years, we have developed long-term educational activities that are now brought together under one umbrella, called the Biosphere Academy. The education is based on sustainability, nature, and culture within the BR and aims to strengthen the sense of belonging and the engagement of children and young people. Through the Biosphere Academy, which serves as an educational programme for the BR, we aim to promote a sustainability mindset that permeates early childhood education and care, as well as primary and secondary schools.

We want to strengthen young people's ability to take action for sustainability in their local environment and increase their participation in the BR. We also aim to deepen their connection to nature and the local environment by increasing knowledge about the archipelago's nature and culture. This will be done through activities carried out in collaboration with various organisations, within the framework of UNESCO's programme for BRs and the national curriculum.

The continuous project Biosphere Goes to School and the Sustainability Path (see 2.4.9), are good examples of long-term educational activities that are well incorporated into and adapted to the school curriculum. The environmental education in preschool, which has been realised through a project based on the mascots *Gäddan och gänget* (transl. the Pike and his friends), offers different themes with well-prepared material for the preschools to work on themselves, for example on 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 ÅAU, the BR Office has developed a special series of seminars – Forum for Archipelago Science – organised 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 popularised manner, as well as local experts who share their traditional knowledge or experiences. The BR has an important role as a neutral arena for sharing knowledge, both traditional and scientific. The Archipelago Sea Winter Meeting was established to create a forum for all those who are interested in the BR activities. The winter meetings are nowadays also important forums for building bridges and developing cooperation projects.

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. The University of Turku (UTU), with its Archipelago Research Institute (ARI); ÅAU with its field base at Korpoström; TUAS; Metsähallitus's Parks & Wildlife Finland unit; the ELY Centre; and Natural Resources Institute Finland (LUKE), amongst others play 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.

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Archipelago Centre Korpoström is a venue where science, art and culture intertwine. The BR Office is actively involved in the activities at the centre, as are many of the collaborators of the BR. The centre is therefore a place where many cooperation projects are realised and many seminars or workshops are held. Activities at the centre include marine science, management of the national park, traditional handicrafts, exhibitions and seminars. The exhibitions, which bring together art, archipelago knowledge and science, always address key themes of the BR and the office is contributing to the production of them.

In 2016, the Kids' Lab, an educational corner for children to discover marine science, was opened as a cooperation project initiated by the BR Office. The Kids' Lab, or Biosphere Lab, welcomes just over 2,000 visitors a year.

The BR Office has put a lot of effort in enhancing the visibility and increasing awareness of the BR. Communication is continuously broadened and improved, with different means and through new partners and the Biosphere Ambassadors. The main channels are the electronic newsletter, the website and social media, e.g. Facebook and Instagram. The BR logo is used to identify the activities of the BR and customised versions of the logo have been developed for Biosphere Ambassadors and Partners. The BR flag and information boards are found at about 12 sites in the BR. We have included more stakeholders and target groups and improved our communication within these networks. The BR Office coordinated a collaboration between local actors – with the schools and preschool centrally involved – around the creation of a Biosphere Trail in Korpo. The trail is about 2 km long and winds through diverse natural environments: coniferous forest, a small hazel grove, rocky terrain, and along roads near the school centre in Korpo and Verkan's Guest Harbour. The overarching theme is the balance between people and nature, highlighting the very essence of our UNESCO ASABR. The trail crosses rocky ground and requires hikers to be agile on varied terrain. The schools and preschool use the trail as an outdoor classroom, while tourism companies can integrate it into their activities.

The coordinator of the ASABR co-led the NordMAB network during 2016–17, until a circulating coordination group was established. Finland was also a member of the EuroMAB Steering Committee (2015–2017). The task was shared between North Karelia Biosphere Reserve and the ASABR. Furthermore, the BR is active in the World Network of Island and Coastal Biosphere Reserves, and has participated in a few conferences and contributed to the newsletter. Common projects have been carried out with BRs in the networks of NordMAB and Biosphere for Baltic. During 2014–2016, NordMAB received network grants from the Nordic Council of Ministers, which facilitated a higher degree of participation during the annual meetings and strengthened the cooperation across Nordic BRs. The annual meetings have included workshops designed to enhance NordMAB synergy, capacity and visibility. The BRs in the Baltic region share the problems connected to the environmental challenges facing the Baltic Sea. To address these, the Biosphere for Baltic network was established in 2016 and the ASABR naturally took a central role. The BRs in the Baltic Sea region carry a lot of information and knowledge that can be shared, both between the BRs and with others, and Biosphere for Baltic is an important platform to stimulate cooperation and share ideas.

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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 the Environment** is responsible for the BRs at a national level. At a regional level, the responsibility lies with **the ELY Centre** (the Centre for Economic Development, Transport and the Environment in Southwest Finland), previously the Centre of Environment of Southwest Finland. The ELY Centre receives an annual payment from the Ministry of Finance for the coordination of the BR. The fixed sum of EUR 60,000 was increased to EUR 70,000 in 2021. Since 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. Since 2009, when the boroughs merged into the two larger municipalities of Pargas and Kimitoön, the coordination services have been bought from Pargas. The coordination arrangement has been very successful, since it has brought the management of the BR even closer to the local society, increased the involvement of local stakeholders and strengthened the connection to the local inhabitants. **The administrative cooperation based on a three-part contract** between the ELY Centre, Pargas and Kimitoön gives the BR Office a structure. Pargas is in charge of the BR Office, which is a cooperative model rather than a physical place. The coordinator is 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 supporting the BR by conducting activities mainly by running development projects and sometimes with economic support for the projects. The Town of Pargas also contributes through translation services, which is of great importance in our bilingual environment.

The BR Office moved to **the Archipelago Centre Korpoström** in 2022. Since the planning phase of the Archipelago Centre, the BR has played a central role in the centre's activities. Many of the BR's events have been held there, and since 2006, the Kids' Lab programme has been developed with the BR Office in a coordinating role. When the ÅSS acquired majority ownership of the property company and moved its office to the Archipelago Centre in 2015, there were many reasons to also relocate the BR Office there. Over the years, the BR's role in planning and implementing exhibitions – highlighting themes of interest to the archipelago through science, art, and local knowledge – has grown significantly. Today, exhibitions serve an important function in the work of the BR by spreading knowledge and illustrating what the reserve is all about. The Archipelago Centre is now an important Biosphere Partner and has recently updated its goals with the ambitious aim of becoming an official biosphere centre.

On the **Steering Committee of the BR**, local people are represented through two politically elected or politically active delegates (+ two substitute members) from the local communities. For the last few years the municipalities have also been represented by two clerks, to strengthen

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the involvement of the municipalities. Since 2024 we also have a representative of the Regional Council and a youth delegate on the committee. The committee is responsible for the strategy and action plan of the BR. At seminars and through other educational activities, a natural balance between traditional and scientific knowledge is always sought.

The governance of the BR is based on cooperation on many levels. In 2018, the previous letter of intent for cooperation in the BR (2012–2017) was replaced with partner-specific agreements. Agreements were made with the Town of Pargas, the Municipality of Kimitoön, Metsähallitus's Parks & Wildlife Finland unit, ÅAU, UTU, and the Regional Council of Southwest Finland. These agreements were renewed for the period 2023–2027.

Metsähallitus is **responsible for the Archipelago National Park** and the management of protected areas in the BR.

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

An updated strategy for the BR was in place until 2017. Through an inclusive process, a new strategy was developed and finalised for 2018–22, followed by the next strategy for 2023–27.

In the current strategy, the vision states that in the ASABR, the inhabitants live and work in a sustainable archipelago environment with a rich natural environment, a healthy sea and a vibrant society. The area actively co-operates with other areas both nationally and internationally. Our mission is defined as follows: To achieve sustainable development, we work on behalf of UNESCO to find local solutions to global challenges for sustainable development, through education, research and development projects, as well as through awareness raising and cooperation and voluntary efforts. The ASABR, in collaboration with the global network of BRs, will serve as a model area for sustainable solutions. The partner organisations are committed to cooperating 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. In order to create a framework for the various organisations that contribute to the activities of the BR, we also have three operating principles that we want to permeate the activities of the BR:

1 Through knowledge and experiences, people's relationship with nature and culture is deepened and their capacity to act to contribute to a sustainable future is strengthened.

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2 The BR, with its UNESCO status, unites and inspires, and shared successes are celebrated by all.

3 The BR is a model for sustainable development locally, nationally and internationally.

And the goals of the special focus areas are formulated as follows:

1 Everyone can help preserve biodiversity

- management of cultural biotopes and viability of natural pastures
- restoring and strengthening ecosystem services, such as pollination and drinking water
- realising educational activities for active participation in the preservation and management of nature.

2 A healthy sea for the vitality of the archipelago

- implementing nutrient reduction measures and nutrient recycling
- reducing levels of marine litter and microplastics
- increasing knowledge about marine habitats.

3 Thriving islands where the individual is a strength

- use of local knowledge for habitability analyses for individual islands and archipelagos
- adaptation to climate change
- promoting young people's sense of belonging and empowerment
- promoting housing options for different needs
- exploring sustainable solutions for energy and transport
- promoting the role of archipelago culture in a sustainable society
- ensuring commitment, pride and joy in spreading knowledge about the UNESCO BR.

4 The archipelago thrives on a diverse and sustainable economy

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- industries based on creativity and sustainability
- sustainable tourism industry
- food crafts and local food products
- diverse coastal fishing industry.

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.

BR Office: The annual budget consists of a fixed payment by the state to the ELY Centre (EUR 70,000 /year). The coordination is outsourced from the ELY Centre to the Town of Pargas, which employs one full-time coordinator. The BR Office also gets a small contributions based on needs or own financing of projects by Pargas (about EUR 5,000/year). Pargas also supports the office by offering some essential services like translation (SV-FI). Both municipalities involved handle project planning and administration for several of the BR projects. They also contribute to the marketing and visibility of the BR. About 2–6 part-time personnel/year are employed with external project financing. Staff from local partners, like schoolteachers, national park staff, clerks and researchers, often provide in-kind contributions at seminars or other events. Other local people also contribute in this way. BR projects can be run by different organisations and partners of the BR.

Funds and financing of activities: All activities and projects are realised using external funding. Funding pathways include EU programmes like Interreg, Leader, other developmental programmes of the state, and private funds for cultural, educational and environmental purposes. Some of the activities are conducted by partner organisations of the BR. The BR Office has initiated and been involved in conducting externally financed developmental projects. Additionally, the BR is centrally involved in many other developmental projects that promote the local society and nature preservation in the Archipelago Sea area.

Annually, the BR Office gets EUR 2,000–6,000 from external funds such as William Thuring's stiftelse, Lisi Wahls Stiftelse, the Martha and Albin Löfgren Cultural Fund, and the ÅSS for seminars, educational material and workshops. Over the last five years the educational programme the Biosphere Academy has been financed with about EUR 125,000/year from four foundations: the Swedish Cultural Foundation in Finland, Konstsamfundet, Stiftelsen Brita Maria Renlund minne, and Svenska Folkskolans vänner.

A Biosphere Fund was established in 2019 by the ÅSS and aims to support the activities of the ASABR. The Biosphere Fund can accept grants or donations intended for the BR's activities

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in general or targeted at any specific part of the activities. The BR Office, which is administered by the Town of Pargas together with the Municipality of Kimitoön and the ELY Centre, may, when applying for money from foundations and funds, name the Biosphere Fund as the recipient of the contribution. Any fundraising, with the necessary fundraising permits, can also be directed to the BR. The use of the funds must support the objectives of the BR as set out in the relevant steering documents (see strategy and action plan). The ÅSS Board may request an opinion from the BR's Steering Committee or coordinator in unclear cases.

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

The communication plan is described in every action plan. The BR Office has many tools for communication. The BR's external communication channels are flags and information boards distributed around the area, information in tourist brochures, a BR brochure, social media such as Facebook and Instagram, a website and a digital newsletter twice a year. Local media such as newspapers and radio channels are used to reach a broader public. Internal communication is handled mainly by email and WhatsApp groups.

Over the last decade, one of the most important means of communication has taken shape with the launch of the BR Partners and Ambassadors Programmes. The number of people, companies and organisations representing the BR through their activities or through communication with different people has multiplied. Important themes for promoting a sustainable future in the archipelago are highlighted in various contexts, via those involved in the BR's activities. The BR Office offers continuing education and both seminars and various materials for raising awareness or promoting sustainability.

An important tool for raising awareness about the UNESCO BR has been the recently created **Biosphere Trail** on the island of Korpo (see 5.2.). The same material has also been produced as a mobile version of the Biosphere Trail. The BR Office has distributed '**Biosphere Backpacks**' to Biosphere Partners, containing educational material and a booklet showing the trail's information signs, making it possible to organise similar walks in different parts of the BR.

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 relationships between the nature protection programmes of the protected areas and the agenda of the MAB Programme have been thoroughly explained, in order to emphasise 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 realised by focusing on actions for

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ecological, economic and social sustainability at the same time. Most of the BR projects have, in one way or another, related to issues concerning livelihood and/or residence.

In the strategy of the ASABR, all four goals of the BR address in one way or another socio-cultural, ecological and economic issues. Among the focus areas are preserving cultural landscapes, use of local knowledge for habitability analyses for individual islands and archipelagos, housing options for different needs, the role of archipelago culture in a sustainable society, and supporting traditional livelihoods, as well as new industries based on creativity and sustainability in the region.

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

The presence of the BR at **Archipelago Centre Korpoström** provides additional tools for reaching local people and connecting archipelago culture and cultural history with natural science and other scientific fields. Archipelago Centre Korpoström is a centre for science, art and culture alike, united by the archipelago and its nature. Situated in the heart of the BR, the centre provides venues for meetings and seminars as well as private events throughout the year. The Archipelago National Park opens up to the south. Metsähallitus's Parks & Wildlife Finland unit has offices at the centre, while ÅAU's Environment and Marine Biology Department has a field base 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 ÅSS** (see 2.1, 5.4, 5.10) received the majority of the estate as a donation and is now the main owner of the centre. The programme management is based on local cooperation and the activities are run by several organisations. Korpoström Archipelago Centre merges science, art, history, traditions and even popular culture. Until now, the centre has supported the promotion of the BR in many ways. In the future, we hope to integrate the concept of the BR into the activities at the centre even more, since the centre could conveniently be functioning as an official biosphere centre. We continue to link the Archipelago Centre's exhibition activities and programmes with the BR agenda and vision.

In all the BR municipalities, information on buildings, rural history and antiquities has been collected over the years in cooperation between the municipalities, local communities, the Provincial Museum and the Regional Council of Southwest Finland. The local building conservation association, Curatio, started a project in 2016 with the aim of creating a cultural environment programme for the Åboland archipelago. The publication contains interesting expert articles on the cultural environment, as well as village history data, building history data and landscape history maps published as open data on the map. https://issuu.com/kulttuuriaturussa/docs/turunmaa_yhteinen_kulttuuriymp_riist_mme_-_boland. The article section of the publication also provides convenient access to the geospatial data of the sites, which can be found on the map service of Lounaistieto: [Lounaistiedon Karttapalvelu](#) ('Lounaistieto map service').

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The wooden clinker-built boat tradition is now, as of 2019, featured on UNESCO's List of the Intangible Cultural Heritage of Humanity – traditional knowledge passed on from generation to generation. The traditional wooden boats have been important for life along the coast, for fishing, livestock farming and shipping. The BR has been involved in arranging an event and producing some material for raising awareness and celebrating the nomination and clinker boat tradition at Archipelago Centre Korpoström.

For two decades now, the educational activities of the BR have been being developed. Today, we have an educational programme called the Biosphere Academy, with a long-term perspective on how we can strengthen children's sense of belonging and thereby their engagement with their local environment. The programme naturally takes both nature and culture into account. (see 2.4.9).

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

On the Steering Committee of the BR, local people are represented through two ordinary and two substitute members from the local communities. The committee is responsible for the action plan of the BR. In the preparation of the BR strategy for 2023–27, local residents and associations were involved through a survey. We collected thoughts and ideas for future activities. Key findings from the survey included the importance of engaging people, working with children and young people, focusing also on livelihoods other than tourism, and working towards a cleaner sea.

At seminars and other educational activities, a natural balance between traditional and scientific knowledge is always sought. Different planning processes always involve local people from the occupational group of concern for specific projects. The collaboration networks managed by the BR always include representatives of the local community.

Traditional and local knowledge plays a central role in the management of species-rich semi-natural grasslands. Historical maps have also been studied to learn more about how grazing was organised in the past. Local farmers are actively involved in the planning of grazing today.

The Habitability concept (see 2.4.3.) has been developed to give islanders a tool to better understand their habitat and to analyse the habitability of their own island community and thus also the sustainability of their own community. The BR has supported local habitability groups in working on their own analyses. With the help of project funding, the BR has employed 1.5 people to support and guide them in their work. The habitability analyses also provide the BR with valuable information about things such as real human pressure, perceived distance, safety, wellbeing, service provision and the local economy.

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?

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

Children and young people who live in or visit the archipelago are an important target group for us. The BR has long-term goals for the Biosphere Academy, which are adapted to the evolving needs and opportunities of our key partners and local society. In the programme 'The Archipelago Superheroes' for early childhood education and care (ages 0–6), the children collect stamps to become mini-ambassadors for our BR. Together with their teachers, they explore various topics pertaining to nature, culture and sustainability in the BR. Every second year we have developed material for a new theme: for example in 2017 this was the food cycle and 2019 it was archipelago culture, addressing the culture from many perspectives. The theme packages always include a teacher's handbook that explains the concept and topic in detail. The package also contains various activities for the children, such as letters from the pike, craft activities, board games, and colouring pictures. We have also developed a sustainability pathway with tips and tools for teachers in elementary school. Students track their learning in workbooks, exploring ecological, economic, and social sustainability. (See 2.4.9)

The BR Office has promoted **documentation of cultural heritage** in different ways. At all the Archipelago Sea Winter Meetings and Forums for Archipelago Research, both traditional and scientific knowledge is presented. Often, parts of these are documented by the Archipelago Institute at ÅAU in *Tidskriften Skärgård*, which is a journal focusing on documenting a cultural heritage.

Nordic boat traditions, such as the clinker-built boat, have over 2,000 years of history behind them. The traditional wooden boats have been important for life along the coast for centuries, for fishing, livestock farming and shipping. The wooden boat tradition has, since 2019, featured on UNESCO's List of the Intangible Cultural Heritage of Humanity – traditional knowledge passed on from generation to generation. The nomination helps to make the tradition of clinker boats more visible, since there is a risk that knowledge of it will disappear. The BR was involved in arranging an event and producing some material for raising awareness and celebrating the nomination and clinker boat tradition at Archipelago Centre Korpoström.

CAA Contemporary Art Archipelago is a curatorial collective supporting site-sensitive artistic work at the intersection of ecological, feminist and decolonial enquiries. CAA has been initiating and leading long-term multidisciplinary collaborations in the Turku Archipelago in the Baltic Sea since 2009. The BR Office has been consulted by the engaged artists on many issues concerning the balance between man and nature. The artists are working with issues of relevance for the BR. CAA opens up for the BR an interesting approach for cooperation with artists to promote sustainable development and showcase the natural and cultural values of the region.

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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 of the BR are Swedish-speaking Finns, speaking Finland-Swedish as their first language. Interestingly, this is specific to this region. If you move north across the municipal border, the majority language shifts to Finnish, as it does on the mainland. However, heading southeast along the coast, Swedish-speaking areas continue. In Finland, the Swedish-speaking minority has been decreasing and is now about 5% of the population. Swedish came to Finland in the 12th century when Swedes colonised the country. At that time, it was Old Swedish that was brought over. This influence can still be heard in the Swedish dialects spoken along Finland's coastal areas today.

Exact language statistics are not available for the BR as such, except for the two municipalities of Pargas and Kimitoön. Pargas is bilingual with a majority of 53.9 % speaking Swedish as their first language, 41.5 % speaking Finnish, and 4.6 % speaking another language. The other languages include Arabic (14%), Ukrainian (14%), and Estonian (12%) (Statistics Finland 2024). Kimitoön is bilingual with a majority of 66% speaking Swedish and 29.7% speaking Finnish and 4.3% speaking another language. The other languages include Estonian (29%) and Ukrainian (22%) (Statistics Finland 2024). The large proportion of Arabic and Ukrainian can be explained by the unstable global situation and the need for asylum over the past decade.

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 its own language system. Across 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 of 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 to preserve the dialects. One example is the book 'Läsåbook e hootsjärså', 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.

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The ASABR has developed its management structure since the nomination. The goal has been to ensure 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 dominant. The 'Office' is administratively located in 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 local society in the management and activities of the BR. Thanks to the three-party contract, the BR Office and the coordinator have a plain coordinating function and work only 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 strongly supports new partner organisations in participating in and running activities in connection with the BR. The BR office is continuously working to encourage the involvement of new partner organisations and spread the sense of shared the responsibility for the BR among all local stakeholders.

The BR's partnership programme contributes to a clearer structure for collaboration around the activities of the reserve. Each partner defines their own role and objectives in their five-year partnership agreement. Naturally, the growing network of partners requires considerable coordination, which can still turn out to be challenging due to the limited staff resources of the BR Office.

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 annual payment, but the financial arrangement is reviewed on an almost annual basis, which is strongly affecting the continuity. During recent years, the three-party contract has been made for 2–3 years a time, which allows for better focus on the work. The insecurity with the continuation makes the planning of activities difficult, not least given the implementation is based on cooperation built on trust between the partners. The BR's major investment in children and young people through the Biosphere Academy – an educational programme with a long-term perspective – is entirely dependent on contributions from various foundations and funds. The constant financial uncertainty affects both the staff and the models of collaboration. However, luckily, all projects are run by different partner organisations, mostly the municipalities, and are therefore not totally dependent on the BR Office.

Over the last 10 years, many governmental organisations have been re-organised. Once again, we have a forthcoming re-organisation of the ELY Centres, which might affect the management structure of the BR. It is challenging for the small organisation of the BR to protect its interests during the process of re-organising governmental institutions. Nevertheless,

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every re-organisation 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 or the BR is centrally involved.

In **The National Archipelago Programme** (*Kansallinen saaristo-ohjelma, 2024-2027*), the development of the archipelago areas is guided by a vision of a prosperous archipelago, now and in the future. The programme is published by the Ministry of Agriculture and Forestry of Finland. This seventh national development programme for island and other water-based regions addresses issues related to security more comprehensively than before. The foundation of island policy lies in the Act on the Promotion of the Development of the Archipelago (494/1981, the 'Archipelago Act'). According to the Archipelago Act, central and local governments must strive to secure a permanent population in the archipelago by providing the population with sufficient opportunities for livelihoods, mobility and access to basic services, while protecting the archipelago's landscape and nature from environmental harm. To promote place-sensitive development, this Archipelago Programme includes the new element of encouraging the creation of local archipelago programmes.

The regional strategy of the Regional Council of Southwest Finland combines two statutory documents: the regional plan and the regional programme. The regional plan outlines the long-term development goals of the region, looking ahead to 2040 and beyond. **The regional programme for Southwest Finland 2022–2025**, which is prepared every four years in alignment with the municipal election cycle, presents a plan for how the goals of the regional plan will be achieved. The BR is among the partners in the partners forum.

The Regional Councils have initiated the update of **Finland's Maritime Spatial Plan 2030**. The plan will be updated during the period 2024–2027. The preparation of the Maritime Spatial Plan is stipulated in the Land Use and Building Act. The BR and all its central partners are important stakeholders in the process.

In the **Development strategy of the local Leader association 2023-2027 'With the wind – Vitality and Quality of Life in the Archipelago'** (*I samma båt - Samassa veneessa rf ry, Utvecklingsstrategi 2023-27*), the BR is an important cooperation partner at 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 strategy, the BR is highlighted as a strength in developing the area into a diverse, year-round tourist destination.

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In the **Fishing Strategy of the Archipelago Sea 2021–2027** (*Skärgårdshavets fiskeristrategi 2021-2027, Med fisk till toppen!*), it is stated that the BR Office is a key partner for cooperation. The 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.

The Archipelago Sea Management Plan (*Saaristomeren hoito- ja käyttösuunnitelma*), completed in spring 2025, covers an area that includes the Archipelago National Park, nature reserves, Natura 2000 sites, and private conservation areas. The purpose of the plan is to balance the needs of nature and cultural heritage conservation, recreational use, and nature tourism in the area. For privately owned land, the plan serves as a recommendation. According to the Archipelago Sea Management Plan, the BR is of great importance for the Archipelago National Park in many respects. The BR is mentioned as an important partner in educational activities in schools, as well as in information dissemination and communication. The BR, through its cooperation network, also plays an important role in developing sustainable tourism and recreation in the Archipelago Sea. Metsähallitus settled on the current delineation for the area that the plan considers, because it encompasses both the boundaries of the ASABR and the comprehensive Archipelago Sea Management Plan. Additionally, the Archipelago Sea's exceptional biodiversity, significant species and habitat values, birdlife, rich cultural heritage, and marine environment extend in many areas beyond the boundaries of the national park. The plan also states that Metsähallitus's Parks & Wildlife Finland unit considers it absolutely essential that the BR continue to exist and develop in the future as a platform for engagement with the local community.

In the **Strategy of the Town of Pargas for 2023**, the ASABR is highlighted in connection with goals for sustainable development, as well as the marketing and development of the area as a destination for sustainable tourism.

The BR is also mentioned as an important actor in **the Town of Pargas's Climate and Environment Programme 2023–2035**. Among the town's measures, the municipality's key role in managing the BR Office is highlighted, as is the BR's role in educational activities.

In the **Tourism Development Programme of the Municipality of Kimitoön 2022–30**, the BR is mentioned as one of the four key strengths for tourism development.

Örö Nature Tourism Development Plan (published in Finnish: *Örön luontomatkailun kehittämissuunnitelma*. Vuorinen Jouni, Sorakunnas Esko, Högmänder Jouko. 2014, Metsähallitus's Parks and Wildlife Finland unit. [c127.pdf](#).)

On 31 December 2014, the Finnish Defence Forces gave up Örö Fortress Island, and the island was transferred to Metsähallitus and incorporated into the Archipelago National Park. Metsähallitus's aim is to safeguard Örö's rich cultural heritage and exceptionally diverse nature by developing the island into an attractive nature and cultural tourism destination to complement the offerings of the Archipelago National Park. A plan has been drawn up for the development of tourism on Örö. (See 5.2)

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

The central role of the BR in the National Archipelago Programme has led to a seat in the secretariat of the Archipelago Delegation and to several collaborations, in which the BR's educational models have been disseminated nationally through a development project led by the Archipelago Institute at ÅAU. In addition, the activities of the BR were presented to the Finnish Parliament at a joint archipelago event held in Parliament House

Metsähallitus has used as a boundary for focus areas for several strategies and programmes the boundaries of the ASABR, which creates many synergies in terms of strategic goals and development activities.

A significant advancement for the BR in recent years has been its inclusion in municipal strategies and programmes. The municipalities have finally begun to grasp what the BR represents and how it can benefit them on a broader level. However, it is still noticeable that in most strategies and plans where the BR is mentioned, it is primarily in reference to its UNESCO status or its role in promoting sustainable tourism. Nonetheless, in the follow-up and evaluation of these municipal strategies and programmes, there are already signs of a broader understanding of the BR's potential

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 launch of the BR, all activities have involved different groups of local actors. The activities have been presented and planned in open forums. Expert groups have been formed and involved with the planning and implementation of projects. The seminars and events organised have engaged the local population, as well as various local associations.

The participation of the local population in BR activities has been constantly expanded. Through the seminars and projects of the BR, new and old target audiences are regularly offered the opportunities to meet and influence. Since 2018, the BR has offered a possibility to join the work of the BR for a sustainable future as Biosphere Ambassador. A Biosphere Ambassador has the knowledge, interest, and commitment to spread information about our BR to others. All ambassadors are allowed to define their own role as ambassadors – some use the knowledge and contacts in their professional lives, while others want to work for sustainable development within different associations or on a purely personal level. All our ambassadors are very valuable for the activities of the BR. The Biosphere Ambassadors meet regularly to discuss various topics that deepen their knowledge of the Baltic Sea, sustainable business, environmental issues, and other things that are important to know when working for a viable archipelago. The ambassadors take an active role in the BR's regular activities, for example in our recurring events: the Archipelago Sea Winter Meeting and the Forum for Archipelago Research. Whenever possible, an ambassador participates in various national or international

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network meetings. The BR Office maintains a register of ambassadors; involving different people in specific situations and offering further training or network meetings when needed. The Biosphere Ambassador training, which has been arranged in collaboration with the Centre for Lifelong Learning at ÅAU and UTU, is open to everyone. Today, we have around 60 people from diverse backgrounds involved as Biosphere Ambassadors. Among them are teachers, entrepreneurs, journalists, retirees, farmers, municipal officials, local politicians and guides. Although the impact of this programme cannot be measured quantitatively, it can nevertheless be claimed that it has been one of the BR's most impactful initiatives in spreading knowledge and fostering engagement with its key themes.

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 traditional livestock operations. However, through projects, camps and events, this trend is being counteracted. Nowadays, most 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, WWF, the Finnish Association for Nature Conservation and Arkipelagia Society participate in voluntary work for the clearing of meadows.

Awareness of the condition of the sea and the interest in what we 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, such as avoiding use of single-use plastic items, minimising food waste and cleaning up beaches. For some years, the association Keep the Archipelago Tidy has organised national campaigns to clean the beaches.

One nice example was the collaboration on 'Plastic-Free Archipelago' in 2019. News about the challenges of plastic waste and microplastics in the sea had started to become part of everyday life in the Archipelago Sea as well. Archipelago Centre Korpoström made a major effort on the theme and hosted an international exhibition about plastic in the ocean. The collaboration between the BR and the Archipelago Centre began to solidify, and the theme was further strengthened through the BR's activities, including both the Archipelago Research Forum and the important role of the Kids' Lab in leading activities related to plastic. Schools also began to discover the Archipelago Centre. A working group of residents from various parts of the BR, volunteering out of personal interest, jointly planned a campaign for a plastic-free archipelago. They outlined various actions to focus on throughout the year. These included establishing stations for reusable cloth bags in local grocery stores, lobbying for a plastic collection point in Nagu, and launching a campaign with ten practical tips for companies and residents on how to reduce the use of single-use plastics.

Local inhabitants are also reached through cooperation with the third sector. Seminars, other events and projects have been carried out with, for example, Arkipelagia Society, FÖSS, local nature protection associations, Keep the Archipelago Tidy, the ÅSS and local cultural associations or village associations. Many local associations participated in the celebrations of the 30th Anniversary of the BR by arranging local events.

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During the anniversary year 2024, the focus of the celebrations was specifically on participation and local cooperation. By inviting local and regional organisations to participate in the celebration with an event or in some other way, we prioritised reaching out and engaging more people in the BR and strengthening local residents' ties to their local environment and the BR. To engage and inspire local actors and partners, the BR launched the '30 Ways to Celebrate' campaign, inviting them to plan events or find their own way to celebrate the reserve. The list of 30 ways to celebrate was published on the reserve's website throughout the year. The events highlighted both natural and cultural values and illustrated the core mission of the BR: 'a balance between people and nature for a sustainable future in the archipelago.' The BR reached out to new groups, including many local associations.

Activities ranged from weaving workshops on Vänö and a folk music tour with traditional boats in the outer archipelago, to seminars and a sailing trip for young people to the island of Berghamn to learn more about biodiversity work on coastal meadows. Local associations, newspapers, and even the local Swedish-language newspaper *Åbo Underrättelser* contributed to raising visibility for the jubilee year, including a featured full-page article.

At Archipelago Centre Korpoström, visitors could explore the BR through an exhibition that presented its development over the past 30 years, as well as everyday life in the archipelago today. This was conveyed through the artistic project *Human by the Sea* by ElinMaria Sydänvirta and Lotta Virtanen. ElinMaria Sydänvirta also created a dance documentary about life in the archipelago, uniquely portraying human presence and activity in this special environment. Korpoström chose to open its large exhibition hall to a variety of events and smaller exhibitions, which contributed to a diverse and festive programme throughout the jubilee year.

All islanders are experts on their own islands. They live their everyday lives there and know the fluctuations over the year and between the seasons. The BR supports the local society with their own Habitability analysis. The Habitability concept sees habitability as the concrete core for assessing the sustainability of an island. Every sustainable society has to be habitable to survive, develop, and maintain its resilience. An island has all the presumptions to be habitable if the islanders feel secure and comfortable, if there are children in the school, and if there are workplaces, affordable houses and effective and sufficient logistics. Habitability, in this context, consists of seven aspects. These aspects, or areas, are divided into 45 indicators. The aim is to support islanders in screening their island with the help of the indicators and to help them understand the most crucial parts of their island's habitability. Which are the strengths to highlight in the strategies and marketing processes? Which issues need more effort to improve the habitability of the island? Naturally, the environment and nature also play an important role in the habitability process.

Other groups in focus during the past years have been the local producers and entrepreneurs (e.g. the *Mathantverk* project) and local livestock farms by arranging network meetings and arranging a public campaign on social media about the nature preservation work done by grazing animals.

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Last but absolutely not least, it is worth mentioning the broad group of children and young people, primarily locals, but also part-time residents and visitors. Through our major educational initiative, the Biosphere Academy and its various programmes, we reach more or less all children and young people growing up in the BR. (See 2.4.9). In the long term, this is absolutely the most important target group. Again, it is difficult to measure the impact of our work. We can more or less track how many children we reach, but not the effect our activities have on their wellbeing, knowledge, or life choices. The local children and young people have also been involved in several activities of the BR, such as the annual winter meetings, planning the Biosphere Trail and hosting groups of students from other parts of the country or from abroad.

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 to women and men on all occasions. According to the law, both genders should be treated equally. Women are well represented in the community organisation and in the local governmental councils. In the archipelago, many of the traditional livelihoods have been and are still dominated by men, including agriculture, fishing, maritime service and hunting. Women have traditionally taken care of the house and family and were often in charge of the finances when their men were out at 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 at 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 female entrepreneurs is growing. The BR has focused on a new income possibility particularly suitable for female farmers – *Mathantverk* – or 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.

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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?

UTU, with its ARI; ÅAU, with its field base Korpoström; Metsähallitus's Parks & Wildlife Finland unit; the ELY Centre; and 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.

The focus of the ARI on the island of Själo (Finnish language name: Seili) in the middle of the BR has been on long-term monitoring of the brackish water environment for 50 years and statistical time series modelling, supported with experimental laboratory facilities. At the Ocean Data Acquisition System (ODAS) intensive water quality monitoring station north of Själo island, variations in sea water salinity and temperature are monitored, as well as many other parameters for overall water quality, depth stratification and changes in these during the open water season. ARI is part of a national (FINMARI) and European (EMBRC) marine research infrastructure. The prevalence of nanoplastics in water bodies, especially in the Archipelago Sea, is also studied on Själo. UTU is also home to the Sustainable Landscape Systems research group, which has studied place-based assessments of people's perceptions of ecosystem services and landscapes, using participatory mapping methods in the ASABR.

Metsähallitus's Parks & Wildlife Finland unit carries out monitoring of protected marine and land areas in the BR. Protected species, species that are rare outside nature reserves and species that 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 including eutrophication issues), population biology, effects of introduced species on native fauna, effects of climate change on biodiversity, biodiversity effects on ecosystem functioning, food web ecology, modelling studies and studies on management. The research profile **The Sea** at ÅAU launched in autumn 2017 and provides knowledge on marine and maritime life for a sustainable future. The interdisciplinary approach applied by profiling the area at ÅAU integrates ecological and social sciences knowledge and develops methods for knowledge production across disciplines and different types of knowledge. The Sea is particularly focused on combining research on ecology, industrial management, political science and law. The Sea works closely with the ÅAU **Centre for Sustainable Ocean Science (SOS)**, which was established in January 2024. SOS is built upon the longstanding work within The Sea and shares many of the profiling area's theoretical and methodological approaches but focuses more tightly on biodiversity-related wicked problems in the Archipelago Sea region. (See more info in 6.2)

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The BR Office has an important role in this context: to raise awareness and communicate information about nature, the state of the environment, and research findings related to the archipelago. The BR, with its participatory structure, serves as a platform for knowledge exchange – not only from researchers to the local community, but also in the other direction. It also provides a valuable platform for citizen science. The BR Office spreads information on various online portals for collecting data on species, as well as citizen science projects.

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 Committee. Recently, the committee has been strengthened with the addition of a representative from the Regional Council of Southwest Finland and a youth representative. 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. We launched a Partners Programme in 2018, which opens up wider participation in BR activities. The programme is open to all organisations, associations and companies that want to find their role and participate through their own activities in the ambitious work of the UNESCO BR for a sustainable future. The network also creates synergies between different organisations from different backgrounds.

Later in 2018, we launched the Biosphere Ambassador Programme aimed at individuals who want to be involved in the BR's activities. This programme was structured in a different way. All Biosphere Ambassadors participate in training on the UNESCO MAB Programme, the ASABR, and interactive sessions, which help them to shape their own role as a Biosphere Ambassador. The Biosphere Ambassador Programme opens up the possibility for several people to work together in a meaningful context for a sustainable future. Biosphere Ambassadors also provide the BR with valuable human resources with different backgrounds, expertise and social or professional networks.

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 zoning of the BR is planned to coincide with the two zones of the national park, in order to maximise synergies and strengthen the functions of the zones. The core area of the BR overlaps with the protected areas of the national park, while the buffer zone of the BR follows the boundary of the national park for its cooperation area. The BR supports scientific research in the national park and in its cooperation area. Within the buffer zone,

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which is a patchwork of protected areas and privately owned land, human activity is naturally quite limited.

The Archipelago National Park was established to protect the nature and culture of the Archipelago Sea, to safeguard traditional forms of land and natural resource use, to preserve the living archipelago community, and to support environmental research and general nature-related recreation. The state has had very limited resources to support a vibrant archipelago in connection with the national park, which has instead strengthened the role of the BR. The state can grant hunting and fishing licences in the national park to residents living within the buffer zone. The BR Office organises cooperation and financing for development projects, indirectly supporting the national park. Within the BR, many projects are planned and realised together with municipalities, entrepreneurs, organisations, research institutes, governments and individuals, providing the national park with broader communication. Environmental education is carried out both in the BR and in the national park.

The BR has had a supportive function in the communication between the national park and surrounding societies, especially when it comes to children and young people. Tourism is connecting the zones to each other on many levels, as well as the management of the semi-natural meadows in the national park. The management of these ecologically valuable cultural landscapes in the core zone has a strong connection to the agriculture in the transition zone. The livestock 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 on 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?

Over the past few years, we have developed long-term educational activities that are now brought together under one umbrella, called the Biosphere Academy. The education is based on sustainability, nature, and culture within the BR and aims to strengthen the sense of belonging and the engagement of the children and young people. Through the Biosphere Academy, which serves as an educational programme for the BR, we aim to promote a sustainability mindset that permeates early childhood education and care, as well as primary and secondary schools.

We want to strengthen young people's ability to take action for sustainability in their local environment and increase their participation in the BR. We also aim to deepen their connection to nature and the local environment by increasing knowledge about the archipelago's nature and culture. This will be done through activities carried out in collaboration with various organisations, within the framework of UNESCO's programme for BRs and the national curriculum.

Children and young people who live in or visit the archipelago are an important target group for us. The BR has long-term goals for the Biosphere Academy, which are adapted to the evolving needs and opportunities of our key partners and local society. We started by focusing on younger children, while the activities have gradually expanded to also include older children and young people. We believe that the more you know about something, the more you want to take care of it. That is why we want to create materials that teachers and trainers can use from year to year. The materials we create are always linked to the national curriculum and are available to everyone on our website. We have well-established cooperation with the nature school and the municipal education departments in our BR. We actively promote our pedagogical models both nationally and internationally.

In 2021 and 2022, we collaborated with two students at ÅAU to conduct a study on the prevalence of environmental anxiety among children and young people. The results showed that just under half of young people experienced moderate climate anxiety, while only a few experienced climate anxiety in a clinical sense. Climate anxiety was higher among women and students in the capital region than in the BR and rural areas. Based on the results and because there was a need among teachers, we developed a discussion game about environmental feelings.

Objectives

- Strengthen young people's sense of local identity and pride in their environment.
- Develop educational activities focused on nature, the environment, culture, and sustainability that reach children and young people living in, staying in, or visiting the ASABR.
- Equip children, young people, and educators with the knowledge and tools to take meaningful action. In turn this should reduce anxiety about climate and environmental issues, and foster a shared vision for a sustainable future.
- Increase interest in the natural sciences and studies related to sustainability, as well as job opportunities in the archipelago.
- Make the Biosphere Academy's models accessible to others, both nationally and internationally.

Early childhood education

In the programme 'The Archipelago Superheroes' for early childhood education (ages 0–6), the children collect stamps to become mini-ambassadors for our BR. Together with their teachers, they explore various topics, and after completing each task, they receive a stamp in their own passport.

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The mascots of this programme are pike and his friends (soft toys and illustrations). In the beginning, they travelled between all early childhood education units in a fish basket. As the concept gained popularity, we decided to provide each unit with a package containing soft toys and essential materials for both teachers and children.

Every second year the theme has changed:

2009 - Children's rights
 2013 - Waste management
 2015 - The sea under the surface
 2017 - The food cycle
 2019 - Archipelago culture
 2021 - No new theme because of the COVID-19 pandemic
 2024 - Biodiversity in the Baltic Sea

The theme packages always include a teacher's handbook that explains the concept and topic in detail. For the children, there is a passport in which they collect stamps for each completed activity. The package also contains various activities for the children, such as letters from the pike, craft activities, board games, and colouring pictures. The content varies depending on the theme. These activities focus on sustainability, nature and culture within the BR.

Basic education

We are actively working to find long-term and motivating solutions for older children and young people. For basic education, ages 7–15 (primary and lower secondary school), we have developed a sustainability pathway with tips and teaching ideas for teachers. Pupils document their progress in a workbook while learning more about the three dimensions of sustainability.

Over the years, we have also organised different activities for different age groups. We invite pupils from the local area to the popular Kids' Lab and every year we offer all seventh graders in the BR an excursion to the national park. The excursion also involves teachers and representatives from our partners, like Metsähallitus's Parks & Wildlife Finland unit. The aim of the excursion is to give the pupils a sense of belonging, to learn more about the national park and BR and to meet each other pupils from different schools within our area.

Young people

One of our key challenges is that many young people, particularly those around the age of 16, move away to pursue further education. This makes it essential for our educational activities to effectively engage young people who may no longer be based locally. We have implemented a range of initiatives aimed at involving young people. Primarily, we have participated in various course modules to raise awareness of the BR among young people. In connection with the ViMe project, the BR, together with the upper secondary schools in Pargas, developed joint courses on sustainable development and globalisation, which were

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held in 2016–2017. Together with a group of young people, we applied for funding for their self-initiated projects involving vlogs about sustainability and life in the archipelago. While we initially tried to engage local young people through a youth council, we found that this model was not effective for our context. Young people often find it difficult to commit for longer periods of time. In 2024 we appointed a youth delegate to our Steering Committee to ensure that young voices are represented.

We have also organised a variety of youth-oriented activities, with mixed levels of participation. Some events – such as youth forums, sailing trips, and participation in EuroMAB conferences – have been particularly successful and well-received. These experiences have provided valuable opportunities for young people to engage with both local and international networks.

We have also had the opportunity to offer chances to explore work, internships, and summer jobs to varying degrees over the years. These have proven to be important entry points into the activities of the BR.

We have initiated a collaboration with Finland's other BR, the North Karelia Biosphere Reserve, to develop a joint concept for engaging young people. We also work together on these issues through the biosphere networks *Biosphere for Baltic* and *NordMAB*. Together, we organised an international youth forum in 2025 at Kristianstad Vattenriket Biosphere Reserve in Sweden. We also hosted a student exchange for students from Kanazawa University in Japan.

In Kimitoön and Pargas, the municipalities have established youth parliaments, consisting of local young people from lower secondary schools, upper secondary schools and college. The aim is to encourage young people to participate in decision-making and encourage proposals of new ideas from them within the community. The BR has an established contact with them.

Visitor education and Kids' Lab

Children, young people and curious adults can be archipelago scientists for a few hours in the Kids' Lab at Archipelago Centre Korpoström. Children can learn about different animal and plant species in the Baltic Sea, look at the animals that live in the Baltic Sea and take different kinds of water samples. Here, children can study marine life with equipment found in a real laboratory. Like the rest of the activities at Archipelago Centre Korpoström, Kids' Lab combines art and science.

Island Expedition is an adventure route around the Archipelago Sea. On the expedition visitors learn about the nature and culture of the archipelago, perform fun and educational challenges and collect stamps in a researcher passport. On each of the islands along the route, there is a sign with information and assignments for children and others with a taste for adventure.

3. ECOSYSTEM SERVICES:

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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/>)).

In the Archipelago Sea Area Biosphere Reserve (ASABR), no complete study covering all ecosystem services has been carried out, but several research projects have assessed (e.g. Viirret et al. 2019) or are currently developing methods for scalable models to assess ecosystem services (ESs) in the region (e.g. EU Horizon Europe projects [PROTECT BALTIC](#) and [MARBEFES](#), or the [Centre for Sustainable Ocean Science](#) at Åbo Akademi University).

As a background to the evaluation of ESs, one of the most important aspects of the Baltic Sea, or more precisely the Archipelago Sea environment, where the biosphere reserve (BR) is situated, is water quality. As a relatively small, shallow and isolated sea area (the Baltic Sea), as well as a geographically and hydrologically complex archipelago area, the marine ecosystem of the Archipelago Sea is especially vulnerable to eutrophication and other forms of pollution. Clean sea water benefits several other ESs, ranging from wild fish caught for human and domesticated animal nutrition through healthy fish populations, to cultural services linked to recreation, cultural heritage and landscape/seascape enjoyment, to give just a few examples. Another central aspect when evaluating and discussing ESs for the BR is the cultural landscapes. These consist of seminatural meadows used for traditional agricultural purposes like grazing. These are high in biodiversity and considered important from the perspective of provisional and cultural ESs.

Descriptions of habitat types and habitat type combinations studied from the perspective of ESs in the ASABR. (*Viirret et al. Ecosystem Services at the Archipelago Sea Biosphere Reserve in Finland: A Visitor Perspective, Sustainability 2019, 11, 421*).

Common name	Habitat type name	Description of habitat type or habitat type complex
Bladder wrack	<i>Fucus</i> ssp. communities on rocky and stony bottoms	Continuous <i>Fucus</i> vegetation from 0.5 to 5 (10) metres deep in salty waters (3–4‰).

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Bird islet	Coastal islets and cliffs with bird colonies	Small islets and open parts of larger islands colonised by seabird species. Nesting places consist of rock or moraine, different species prefer different bottoms from open rocks to steep slopes and scattered, woody islands. Bird islands sustain characteristic communities of calcareous vascular plants, lichens and mosses.
Sand beach	Costal sand beaches	Baltic Sea sand beaches consisting of fine and coarse-grained sand and gravel. This habitat type is characterised by unsettled soil, low nutrient levels, water level fluctuation, wind, heat and salinity. Vegetation is mosaic-like and zoned. Invertebrate biodiversity is high and beaches sustain a lot of specialised species.
Reed bed	Coastal reed beds with <i>Phragmites australis</i>	Common reed (<i>Phragmites australis</i>) vegetation along sea shores and in open and sheltered habitats further from the waterfront. Based on soft (clay and silt) bottoms. This habitat type has become more common following eutrophication and decreased pasturage.
Seaside meadow	Seaside meadow habitat type complex	Mosaic-like habitat type group containing open meadows with low, continuous vegetation cover. Vegetation is zoned as per the moisture level and consists of herbaceous plants and grasses. Seaside meadows are located between the highest and lowest waterfront and characterised by floods and continuous water level fluctuation.
Dry meadow	Dry meadow habitat type complex	Treeless grass and herbaceous plant vegetation in open habitats. Dry sand-, gravel- or moraine soil. Vascular plant and invertebrate diversity is high. Dry meadows are often dependent on pasturage and therefore have become less abundant following decreased domestic animal pasturage.

Pasture meadow	Pollard meadows and wooded pastures habitat type complex	Domestic-pasturage-influenced meadows with sparsely scattered tree cover and a park-like landscape. Patchy grass and herbaceous plant vegetation as a ground layer. Wooded pastures are often on stony soil on slopes or other difficult terrains that have been used as pasturage. Tree crowns in pollard meadows are often densely branched following domestic foliage harvesting.
Herb-rich forest	Herb-rich forests with broadleaved deciduous trees habitat type complex	Mixed-species deciduous tree forests. Soil is eutrophic and rich in biodiversity. The bottom layer is dominated by bryophytes and the ground layer by herbaceous plants and grasses. Great variety in tree age and species structure.
Juniper thicket	Coastal <i>Juniperus communis</i> thickets	Dense juniper (<i>Juniperus communis</i>) shrubberies on open moraine islands and on top of rocks and moraine hillocks. Ground layer is insubstantial, species are adjusted to dry soil with low nutrition levels. Shrubberies have become more frequent since the decline in pasturage and controlled shrubbery burning. Harsh winter conditions keep the shrubbery vegetation open.

(According to Raunio et al. 2008)

Descriptions of ESs studied and division into ecosystem service categories. The classification of ESs into service categories is not inclusive because some services can be perceived as having multiple different values. For example, hunting and fishing or quality of water as ESs also have cultural values apart from provisioning or regulating service values (CICES 2013, Mononen et al. 2015).

Ecosystem service	Category	Description of studied ecosystem service
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Hunting and fishing	Provisioning service	Hunting and fishing for household or commercial use.
Berry, mushroom and vegetation harvesting	Provisioning service	Berry, mushroom and/or vegetation harvesting for household or commercial use.
Energy production	Provisioning service	Biomass based-energy production for household or industrial use.
Quality of water and soil	Regulation and maintenance service	Ability of habitat type to maintain the good quality of soil or water. In land habitat types this can refer, for example, to resistance to erosion or ability to maintain water conditions and the nutrient cycle. In water and seafront habitat types this can refer to ability to maintain good water quality.
Scenery	Cultural service	Personal perception usually based on visual evaluation of the habitat type.
Cultural value	Cultural service	Significance of a habitat as maintainer of the archipelago traditions, such as land use and other cultural practices and heritage.
Recreational value	Cultural service	Self-directed or professionally organised recreational use: hiking, travelling, boating or other activities.
Biodiversity	All services	Including plant and animal species richness.

Sections based on CICES classification (Haynes-Young and Potschin 2013)

Existing ecosystem service assessments

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Ecosystem service profiles based on different habitat types within the ASABR were assessed in a scientific study by Viirret et al. 2019. The study was conducted for nine distinctive, characteristic and culturally important habitat types and eight shortlisted ESs that are relevant for recreational use. ES profiles were built on stakeholder perceptions, collected from participatory interview surveys conducted in the area during 2013. The interview data included 78 responses from visitors and summer residents of the area. Respondents were asked to evaluate the ability of habitat types to produce the shortlisted ESs. The aim of this study was to build service profiles on the habitat types studied, based on the knowledge of the actual users of the area. Excluding the reed belts, most habitats were both highly valued and considered important producers of the listed ESs. The derived ES profiles were partially overlapping and skewed towards appreciation of cultural services, and the importance of scenery was highlighted. Provisioning services were not particularly highly appreciated, which is probably a result of the profile of the responder group. We discovered several linkages among biodiversity, ESs, and recreational land uses. (Viirret et al. *Ecosystem Services at the Archipelago Sea Biosphere Reserve in Finland: A Visitor Perspective, Sustainability* 2019, 11, 421)

Another ES assessment relevant for the region is the national TEEB report for Finland by Jäppinen and Heliölä 2015 (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>). In the report, the status and trends of ESs in Finland were demonstrated, with several examples that could be applied in the ASABR. However, the BR was not targeted in particular as a case study area in the report. Another pertinent study is the scientific study by Jernberg et al. (2024).

Linking natural capital stocks with ecosystem services in the Northern Baltic Sea. Jernberg S., Kuosa, H., Boström, C., Burdon, D., Haavisto, F., Heiskanen, A-S., Kiviluoto, S., Kuningas, S., Kunasranta, M., Uusitalo, L., Villnäs, A., Westerborn, M., Kostamo, K. 2024 Ecosystem Services, <https://doi.org/10.1016/j.ecoser.2023.101585>

An additional relevant study, which assesses stakeholder opinions on ESs and how management decisions could affect these in the Archipelago Sea, is: Uusitalo, L., Puntila-Dodd, R., Artell, J., Jernberg, S. (2023) Modelling framework to evaluate societal effects of ecosystem management. *Science of the Total Environment* <http://dx.doi.org/10.1016/j.scitotenv.2023.165508>.

Ongoing ecosystem service evaluations and developments relevant to the BR

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As interest in and need for understanding of the supply and demand of ESs both for nature conservation and maritime and nature spatial planning has increased, several efforts have been initiated with relevance to the region and the BR. An effort with great potential future impact is the development and application of the Ecosystem Service Cascade Model by Potschin & Hains-Young (2011) on a pan-Baltic Sea level, conducted in the EU Horizon project PROTECT BALTIC (2024–2028). The overarching aim of the project is to develop the basis for a network of marine protected areas in the Baltic Sea. The project is led by the Baltic Marine Environment Protection Commission (HELCOM), which is a key actor for implementing marine protection and marine management in the Baltic Sea. The ecosystem component of the model is species and the aim of the model is to provide the potential supply of ecosystem services based on the CICES classification of ESs, harmonised in turn with previous HELCOM work. The model is also being tested on more local scales, such as areas in the Archipelago Sea region, with the final goal that it is scalable to local areas such as BR, to be used in conservation planning.

The Centre for Sustainable Ocean Science (2024–2028) is building on works by Jernberg et al. (2024) as well as the Baltic Sea ES cascade model being developed by PROTECT BALTIC, to assess ecosystem services specifically focusing on eelgrass (*Zostera marina*), blue mussels (*Mytilus edulis/trossulus*) and bladderwrack (*Fucus vesiculosus*) in the Archipelago Sea and Åland Island areas.

In the EU Horizon project MARBEFES, the diversity of ecosystem service potential in the Archipelago Sea area is assessed based on the species-to-service links identified in the review by Jernberg et al. (2024). The information is assessed across different seabed habitats (EUNIS level 3) to assess spatial variation in the service potential. This work was initiated in an MSc thesis (Rodriguez 2025, University of Helsinki), and is currently continuing on a larger scale.

Furthermore, a study on the socio-cultural valuation between ESs will be conducted as part of the MARBEFES project in the Archipelago Sea area in 2025. In the study, stakeholders will have the opportunity to answer a questionnaire to share their views on the ecosystem benefits they value most, the factors that in their opinion affect the health of the Archipelago Sea area the most, the changes in the area, benefits, and management aspects.

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.

We have not specified any ES indicators for the ASABR. However, a general framework for national ecosystem service indicators, i.e. FESSI Finnish Ecosystem Service Indicators (2012–

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2014) has been launched, which could be applied also in the biosphere area. The indicators are available online at Luonnontila.fi/en and the results were published in a research article by 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.

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.

Cultural ESs have been studied in a project coordinated at the Department of Geography and Geology of the University of Turku (Associate Professor Nora Fagerholm and Post-doctoral Researcher Liliana Solé Figueras).

Solé, L., Hearn, K.P., Witra, T., Lechner, A.M. & Fagerholm, N. (2025). Balancing landscape values and tourism choices: Integrating participatory mapping and the IPBES Values Typology. *Ambio*. <https://doi.org/10.1007/s13280-024-02112-6>

The BRs aim to balance nature and human coexistence, but increasing tourism levels pose challenges for landscape management. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) stresses the importance of understanding stakeholder values for effective management of natural spaces through a typology of intrinsic, instrumental, and relational values. This study applies this IPBES typology to tourism preferences in the ASABR using Public Participation Geographic Information Systems (PPGIS). A 2022 survey gathered data from 690 locals, recreationists, and tourists, revealing intrinsic values as the most significant. Locals prioritised intrinsic and relational values, while recreationists and tourists emphasised relational and instrumental values. The study highlights a preference for small-scale tourism that preserves landscapes and heritage, illustrating the complexity of aligning stakeholder values in tourism and conservation. Insights from this research guide policymaking to better accommodate diverse values in protected areas.

MARBEFES is an ongoing project and cannot yet provide any information for management purposes (see 3.1). For SOS and PROTECT, see 3.1. Both of the outcomes from these can be used for the BR management plan in the future.

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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 depopulation and changes in agriculture, are important issues for the BR. Since the old cultural landscapes are no longer cultivated by humans for 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 nowadays very 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 favour high vegetation, e.g. meadowsweet, *Filipendula ulmaria*, and bushgrass, *Calamagrostis epigejos*, are increasing, while species common on meadows and heaths, e.g. catsfoot, *Antennaria dioica*, and Alpine Cinquefolie, *Potentilla cranzii*, have almost disappeared. Outside the conservation network, the overgrowing of cultural landscapes is fast and increasing due to changes in agricultural support system (Common Agricultural Policy, CAP) funding for grazing. Diminishing resources are also a problem for the restoration and management of cultural biotopes and their threatened species in the Archipelago National Park.

There is a constant need of more grazing animals for both the needs of the national park and on private land for maintaining cultural landscapes. The BR Office has had a central role in promoting cooperation in the management of cultural landscapes, in engaging both new and existing livestock farmers. The BR Office has also raised awareness about the values linked to the cultural landscapes and the importance of the work done by the local farmers. The number of managed cultural biotopes has been slowly increasing and there have been enough animals available for grazing in the national park. However, new challenges have arisen with changes in the interpretation of the criteria of the environmental subsidies for management of biodiversity. Valuable areas are excluded due to the stricter interpretation of the criteria. Unfortunately, the changes make it less profitable for farmers to take animals to islands with only small patchy areas of cultural biotopes, even though these areas may be in particular need

of grazing. In only the last two years the amounts of managed cultural landscapes have decreased.

The changes in the marine environment, however, are probably the greatest. Habitats like bladder wrack belts, *Fucus vesiculosus*, sea grass meadows of *Zostera marina* and blue mussel beds, *Mytilus edulis*, in particular are threatened due to eutrophication and overgrowth of filamentous algae. The hypoxic areas at the deep bottom of the sea are also increasing due to eutrophication. The eutrophication has also affected the vegetation of the coastal zone. Species that favour 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 utilisation of cyprinid fish significantly if we could find a viable use for the catch. In practice, fishing is also one way of removing nutrients that are already in the sea. Professional fisheries in Finland remove some 500 tonnes of phosphorus annually from the Baltic Sea. Most of this consists of nutrients that have accumulated in herring and sprat in open sea areas. Fishing for cyprinids and other underutilised coastal species is nowadays primarily restricted by the fact that there is insufficient demand for the catch, therefore it is 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 eutrophication, salinity and the introduction of new species that arrive with marine cargo traffic from other regions. Amongst the new arrivals is the American mud crab *Rhithropanopeus harrisii*, 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 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 is increasing steadily. The increasing numbers of eagles are putting additional pressure on the eider duck population. Other bird species that have increased in numbers 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*. Cormorant numbers have increased radically

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due to the nutrient-rich marine environment and locally they have become a plague on the coastal fishing industry (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 fishing industry mainly because of the damage caused to fishing equipment.

Litter has become a significant problem. Most of the litter that ends up in the sea is plastic, which remains in the marine environment for a long time and, when broken down into smaller pieces, is difficult to remove. Litter causes significant harm to marine animals when animals eat the litter or get stuck in it. The issue of litter was first assessed in the 2024 Marine Environment Assessment, and the Archipelago Sea is in poor condition in terms of litter, as the amount of macrolitter (over 2.5 cm) that ended up on the shore exceeded the threshold value for good condition (over 20 pieces/100 m). However, the total amount of litter has decreased on the monitored beaches of the Archipelago Sea since 2012.

Long-term trends show that the salinity of the Baltic Sea has decreased, stratification has increased, and the surface layer of the water has warmed up, especially in winter. The effects of climate change on the plankton community are similar to those of eutrophication, as both accelerate primary production and increase plant and algal biomass. Ice cover in the winter has become shorter, and the extent of ice cover has decreased, which has a particular impact on southern ringed seal populations. As a result of climate change, the distribution of precipitation has changed. Increased winter precipitation washes nutrients from fields and reduced summer precipitation causes drought during the growing season.

Underwater noise has also increased in recent decades due to the increase in both international maritime traffic and recreational boating. However, according to the latest assessment, the intensity and temporal occurrence of underwater noise in the Archipelago Sea is not yet worsening the living conditions of marine life.

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

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species of birds and mammals not specifically listed as game species or unprotected species. Species that are not 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 International Union for Conservation of Nature (IUCN) Red List classification, these species belong to the following categories: critically endangered (CR), endangered (EN) and vulnerable (VU). It is forbidden to destroy or weaken habitats that are important to the survival of a species in need of special protection. Metsähallitus conducts or commissions inventories of species on its own or together with the ELY Centre. Metsähallitus is responsible for monitoring species in the areas it manages. In addition, Metsähallitus is also nationally responsible for monitoring a number of threatened species or species that 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 13 habitats under protection and two under strict 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 and 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 intended 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 an 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 characterised by its diverse or otherwise significant natural features and considered valuable at least at a national level. Such an area must also constitute a significant natural attraction or be important in terms of increasing public

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awareness and interest in nature. National parks should be permanently preserved by prohibiting 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 preserving 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 fishing 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 temporary strict protections during the bird nesting period.

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 National Park was established to protect both nature and culture, to secure the utilisation of nature, to preserve a vibrant archipelago, and to promote environmental research and general interest in the archipelago. A statutory management plan and site regulation orders have been 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 Finnish Defence Forces, have been renovated for interpretational use. Several nature huts feature exhibitions of 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 the 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.

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Details on the quantity and quality of environmental education, 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 centres, 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 significantly 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 ASABR. 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 seals, they also further research on and the tracking of seal populations. Rocky islets, which are the seals' 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 designated as nature reserves in accordance with the Nature Conservation Act. Entering and walking in old-growth forest reserves is permitted under Everyman's Rights but camping and lighting campfires are forbidden in the conservation regulations for these reserves.

Protection areas on private land or water areas

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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 been being 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 Centres (previously Regional Environment Centres) are responsible for establishing private nature reserves. ELY Centres 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 largest private marine protection area in the Archipelago Sea was established in the Gullkrona region in 2022. The protected water area covers an impressive 4,800 hectares. The landowners of the area – the local fishing community – made a unanimous decision to establish the conservation area. Behind the initiative is the Baltic Sea Action Group, founded by the couple who have owned Gullkrona Guest Harbour since 2016. The goal of the Gullkrona conservation pilot is not only to set an example and inspire, but also to help clarify the process of establishing a private conservation area.

The **Forest Biodiversity Programme METSO** (2008–2025 and 2026–) aims to halt the ongoing decline in the biodiversity of forest habitats and species and to establish stable favourable 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. It 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, SYKE, the Finnish Forest Centre and NGOs.

Nationally Valuable Landscapes

There are 186 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 landscapes, 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 on regional land use plans.

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However, rural landscapes are threatened by the impoverishment of nature, the decay of buildings, and unsuitable new construction projects. 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 landscape inventory update was carried out regionally between 2010 and 2015, mainly by the ELY Centres. The current landscapes were selected in 2021 by a government decision. Evaluation of the areas is based not only on the particular features and specialties of the areas, but also on the regional landscape division.

Nature Management Plan for the Conservation Sites of the Archipelago Sea

This is a valuable plan for the safeguarding of valuable flora and fauna in the Archipelago Sea. It sets out management on two spatial scales and on a temporal scale and identifies six special nature management areas, or prioritised managed habitat networks, in the nature conservation areas of the Archipelago Sea. These nature management areas are functional entities in which a large proportion of the endangered species of the Archipelago Sea can be preserved by diversifying and increasing nature management areas. Management areas are defined based on the best available information, and the management measures strive to mitigate the effects of climate change and safeguard the species in the face of future challenges. The management plan is the first step in a cost-effective process of preservation of nature values. The management plan was drawn up as a part of the CoastNETLIFE project, the aim of which was to restore important coastal and archipelagic habitats. Restoration of these areas improved the living conditions of species such as the Apollo butterfly and the hermit beetle. The project was administered by Metsähallitus's Parks & Wildlife Finland unit and conducted in 2018–25

Maija Mussaari. 2021. Nature Management Plan for the Conservation Sites of the Archipelago Sea. Published by Metsähallitus. MH5484/2021. [Luonnonhoidon kokonaisuunnitelma Saaristomeren luonnonsuojelualueille 2021](#)

Priodiversity LIFE project

The largest biodiversity loss prevention project in Finland's history, Priodiversity LIFE, was launched in 2024 and will continue for eight years. The cornerstone of Priodiversity LIFE is biodiversity action plans known as LUMO programmes to be prepared for eight regions. These action plans will identify key biodiversity hotspots with their buffer zones and connections and ensure that species can move from one site to another. Some of the biodiversity hotspots will be selected for restoration with project funding. In the initial selection of hot spots, the BR is well represented. During the project, more hot spots will be found and more carefully analysed,

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which will increase the number of hotspots in the archipelago area and the BR. In the next selection, marine hotspots will also be determined based on the work of marine specialists.

The LIFE IP Biodiversea project focuses on mapping marine areas to identify their natural values, monitoring the condition of previously surveyed areas, creating a more effective network of protected areas, studying human impacts on marine nature, developing sustainable nature tourism, and providing information on the importance of marine biodiversity and its conservation. The eight-year project started 2021 and represents a major step forward in protecting Finland's marine nature. Among other actions, it focuses on developing the network of marine protected areas and preparing a restoration plan for the entire Finnish coastline. Public awareness of marine nature will be increased by promoting nature tourism and communicating openly about the importance of Baltic Sea biodiversity and the impacts of conservation on both nature and people.

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 BR, sustainable development has been integrated into several conservation programmes, such as the Archipelago National Park. Apart from nature protection, the task of a national park is also to promote the development of a vibrant society, to support environmental education and to promote recreation in the area. Several areas are also protected by private conservation areas through the METSO programme, for example (see 4.2).

One of the most central themes of the BR is caring for 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 therefore have economic touristic value. In addition, the management of the cultural landscape provides value for the local economy. This value is based on the EU support available for landscape management, as well as meat from grazing animals, which is profiled as a high quality product.

The Finnish Inventory Programme for Underwater Marine Diversity, VELMU, collects data on the occurrence of underwater marine biotopes, species and communities in Finland's marine waters. The programme contributes to Baltic marine protection and to the sustainable use of the sea and its natural resources. The marine environment is threatened by various human-

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induced pressures and activities. While the uses of the sea areas are increasing constantly, the lack of knowledge on 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 hotspots 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 through sustainable allocation of various uses (see also 6.2).

The cooperation programme **Pro-Archipelago Sea** (In Finnish: *Pro Saaristomeri-ohjelma*) that was founded in 1999 was a cooperative environmental research and protection programme. The objective of the programme was 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 cooperation is to activate the actors who are able to improve water quality in the Archipelago Sea and its catchment area. For several years, the BR coordinator held a secretary role in the sub-network for the Archipelago Sea area in particular. In 2016, the programme was closed down. However, it was later in many respects compensated for by the Archipelago Sea Programme (see below).

Agriculture is the largest contributor to nutrient pollution in the Archipelago Sea and the agricultural runoff into the Archipelago Sea is Finland's last remaining HELCOM hot spot. The **Archipelago Sea Programme 2024–2027** is based on the Government Programme and the aim of it is to reduce diffuse pollution in the Archipelago Sea catchment area so that the area can be removed from the HELCOM's hot spot list by 2027 at the latest. In the long run, the aim is the good status of water in the Archipelago Sea. Based on the Government Programme, actions in Archipelago Sea catchment area focus on measures that will lead to significant improvements in the nutrient cycle. Measures are being taken in the whole catchment area of the Archipelago Sea, but the focus is on the three pilot areas, one of which is located in the ASABR (Municipality of Kimitoön). The BR is actively involved in the Archipelago Sea Programme, especially in passing on information to BR operators and providing a forum for discussion.

The large scale removal of the alien species American mink and racoon dog has been being conducted in the southern parts of the BR since 1992. Actions have been coordinated by Metsähallitus and practical work conducted by local hunters in cooperation with the association Skärgårdshavets vänner.

The Helmi habitats programme, led by the Ministry of the Environment, aims to strengthen Finland's biodiversity and safeguard the vital ecosystem services that nature provides for us.

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At the same time, the programme is working to curb climate change and promote adaptation to it. The Helmi programme is based on voluntary action by landowners. The programme includes measures such as management of semi-natural grasslands, management of woodland habitats and restoration of aquatic and shore habitats. The Helmi programme is a key tool for halting biodiversity loss in Finland. The programme's actions will provide help for hundreds of endangered species and most of the endangered habitats in our country.

The Finnish Defence Forces left **Örö Coastal Fort** in 2014, at which point the island was incorporated into the Archipelago National Park. Örö's century-long period as a coastal fort ended and the previously closed island was opened to the public. Metsähallitus aims to safeguard Örö's rich cultural heritage and protect its exceptionally diverse nature by developing the island into an attractive natural and cultural destination that complements the offerings of the Archipelago National Park. Örö is an extremely important area for threatened species and for habitats worthy of protection. The habitats are particularly representative because they have been exceptionally well preserved in their natural state.

The largest **private marine protection area** in the Archipelago Sea was established in the Gullkrona region in 2022. The protected water area covers an impressive 4,800 hectares. The landowners of the area – the local fishing community – made a unanimous decision to establish the conservation area. Behind the initiative is the Baltic Sea Action Group, founded by the couple who have owned Gullkrona Guest Harbour since 2016. The goal of the Gullkrona conservation pilot is not only to set an example and inspire, but also to help clarify the process of establishing a private conservation area. The conservation effort helps preserve both the natural environment and the cultural vitality of the archipelago. Landowners know their area best and understand what life in the archipelago requires in practice. That all the landowners were involved from the very beginning has been essential in planning the Gullkrona protection area.

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 monitored by the authorities. Metsähallitus monitors the management plan for the Archipelago National Park, as well as for the other protected areas under its management.

Protected area management planning is supported by monitoring 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:

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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 changes in the Natura 2000 and PA networks in connection to regional master planning.
7. State of the Parks reporting: a report on the state of the PA network produced on a regular basis. This can also include an external evaluation of the effectiveness of PA management.
8. Reporting on the Natura 2000 areas required by the EU Habitat Directive: the area of a habitat type 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.
9. The reporting on the realisation of the CBD Programme of Work on Protected Areas (PoWPA): reporting every 3–4 years.

At the request of Metsähallitus, an extensive international evaluation of the effectiveness of PA management in Finland was carried out in 2004. (MEE: Management Effectiveness Evaluation of Finland's Protected Areas). Finland was the first industrialised country to have the management effectiveness of its protected area network evaluated this extensively. The evaluation carried out in Finland has served as a model for other countries when implementing the PoWPA of the CBD.

The effectiveness of the activities aimed at promoting the management of cultural habitats, including those outside the protected areas, can be measured in the number 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 number of people participating in the events and meetings.

The Helmi programme also monitors the number and area of restoration sites annually (See 4.3).

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?

Increased awareness of and strengthened relationship with nature In general, from a BR perspective, it is clear that people want to protect what they love. That is why we focus primarily on raising awareness and strengthening people's connection to nature in their local environment. One of the main factors that positively influences the success of preservation of highly natural values is increased awareness of ecological values, including knowledge on their identification and preservation. Landowners are proud of what they own 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. Regarding the state of the sea, the major emissions are made far from the boundaries of the BR. Therefore, the major role of the BR lies in environmental education.

The BR Office has primarily focused on raising awareness through various public events and seminars tackling the often very diverse themes surrounding changes in nature and nature preservation. The informational activities of the BR on the marine environment have been increasingly directed towards children and adolescents with the Biosphere Academy programme. The educational programme of the Biosphere Academy now reaches all schools and preschools in the BR and in the BR municipalities. The Kids' Lab is visited by more than 2,000 persons a year (see 2.4.9).

In addition to information and environmental education, participation and involvement play a significant role in the success of the protection of biodiversity. There has been and will be even more in the future a focus on strengthening the sense of involvement and participation in the work of the BR and on protecting its natural and cultural values.

The long-term cooperation in management of cultural landscapes has 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 1950s and the consequential disappearance of traditional

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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 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. There has been a repeated lack of available animals for grazing. The BR Office, together with Metsähallitus, the ELY Centre and active local livestock farmers have played a central role in promoting cooperation in the management of cultural landscapes. The BR Office has also raised awareness about the values linked to the cultural landscapes. The EU subsidies for preserving cultural landscapes and biodiversity that have increased lately 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 knowledge 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 marine habitats. The nutrition input from agriculture and sewage has clearly decreased, but the positive effects are not yet being seen. Knowledge on the marine habitats has increased with the major marine inventories that have taken place since 2000 (see 4.3), which is of high importance for the conservation activities.

Established in 2018, **Operation Unique Archipelago Sea** aims to save the heavily eutrophicated Archipelago Sea. The operation is targeting the politicians at national level. The first initiative was for the government to decide to launch an Archipelago Sea Programme, with the goal of removing the area from HELCOM's hot spot list. The second initiative proposed that the government establish a high-level steering group for the programme.

The goal of Operation Unique Archipelago Sea is to increase awareness and appreciation of the globally unique Archipelago Sea and to secure a clean future for it. The situation analysis and action plan were published in 2020. The project resulted in the Archipelago Sea Programme, started 2024 and financed by the government.

In the **Archipelago Sea Programme**, the focus is on the three pilot areas and the purpose is to target a large number of measures as intensively as possible at a smaller geographical area, which brings efficiency to the implementation. Every pilot area has its own coordinator of the catchment area, who works closely with local actors and residents, especially farmers, and through this aims to engage local people in measures and engage in discussion.

4.6 Other comments/observations from a biosphere reserve perspective.

Nature conservation through protected areas is realised through lawful processes of the governmental authorities. The basic idea of a BR is to include ordinary people 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. As humans, we have a need for truth and clear rules. One of the main tasks of the BR is to educate and create discussion about difficult topics related to humanity and nature, and to popularise research and make it more easily understood.

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

Various tools and programmes that engage people in studying the nature in their local surroundings, monitoring changes, and building a connection to it are of great value to the BR. In the reserve, several citizen science projects have been carried out, such as Who Eats the Bladderwrack? by a research group at ÅAU and long-term monitoring programmes where participants report annually on water quality at their own shoreline or their findings on invasive species for national monitoring programmes.

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 BR, but their importance has 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 guard and

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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 sources of livelihoods. Since the COVID-19 pandemic, remote work opportunities have grown enormously, giving archipelago residents more job options and likely contributing to immigration to the area as well as increased remote work from summer cottages and second homes.

A special feature of the area is the large number 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 for a longer season. The large number of people moving around in the archipelago, including both part-time inhabitants and tourists, plays a crucial role for the success of the local entrepreneurs, e.g. shops, restaurants, construction and other services, which clearly brings economic benefits for the local society. According to a study by Metsähallitus, tourism brings about EUR 7 million to the local society and 59 job opportunities to the region. In 2019, the total number of visitors to the national park was 72,590. (2015: 78,700, 2017: 84,816).

Agriculture

Agriculture is, as in the rest of 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 Finland's entry into the EU, the number of farms growing special varieties of vegetables, new potatoes etc. has been decreasing. The cultivation of new potatoes holds a special position in the archipelago, where the country's first new potatoes are harvested each year.

In Southwest Finland, where the BR is located, the conditions for cultivation are ideal, even though the land areas are small and fragmented. Organic farming has increased extremely slowly, however. But the largest organic apple farm in Finland is located in the BR.

Agriculture has had a major negative impact on the state of the Archipelago Sea for decades. However, in the past decade, significant investments have been made in water protection within agriculture by reducing nutrient leakage in various ways. The challenge of increasing drought due to climate change can already be observed through reduced snowfall in winter and long dry periods during spring and early summer. At the same time, climate change is bringing heavier rainfall, which in turn increases nutrient runoff into the sea and accelerates the eutrophication of the Archipelago Sea.

Today, most farmers run several businesses, since small-scale agriculture alone is no longer economically sustainable.

Livestock farming

The number of livestock farms has decreased in recent decades, while the remaining ones have grown bigger. Over the last two decades, the decrease has ceased. When it comes to sheep

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farmers, there are even new ones coming in, but most have only a few animals, kept without any economic interest. Both cows and sheep are needed as grazers in the preservation and restoration of traditional biotopes. Products from animals grazed on semi-natural meadows, known as meadow meat products, can be marketed as premium quality goods, potentially increasing their value. Livestock farms struggle with profitability due to their small scale and, more recently, because of subsidy reforms and differing views among authorities regarding nature conservation support. Because of the small-scale nature of the meadow meat producers, they also face challenges due to the criteria and logistics of the slaughterhouses.

Forestry

Forestry is quite a stable industry. However, it seems to have decreased somewhat since the Natura 2000 programme was introduced. Some inhabitants of the BR 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) 2014–2025 continues to promote voluntary conservation schemes for privately owned forests. Forestry is guided by the National Forest Strategy 2035, which is a business strategy that coordinates the needs of people, the economy, and the environment.

Fishing industry

In 2021, the Finnish Government approved the Domestic Fish Promotion Programme, which aims to increase fish consumption among Finns to an average of 2.5 servings per week by 2035. The programme seeks in particular to promote the consumption of sustainably produced domestic fish. In 2021, fish was consumed at a rate of about 1.7 servings per week. Of all fish consumed, about 80% is imported, 10% domestically farmed and only 10% is caught by commercial Finnish fishermen. The number of professional fishermen in the Archipelago Sea has been decreasing since the 1980s, and the number has decreased to a third of what it used to be during the last decade. Today, there are only about 30 registered fishermen in the municipalities of the BR area, according to the fishermen's association for the Åboland region. Furthermore, the average age of professional fishermen has increased and is today about 60 years. Despite increased catch efficiency, the profitability of coastal fishing operations has decreased. Factors to explain this include higher costs, lower fish prices, marketing difficulties, changes in fish stocks with higher proportions of 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.

Fish farming

About a quarter of all fish farmed 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 number of fish farms. Since 2005, the number of fish farms has remained relatively consistent, but the

output has decreased somewhat. 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 manageable rate. Domestic tourism still far outweighs international tourism. Interestingly, the COVID-19 pandemic had a positive impact on tourism in the archipelago. 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 chose the project *Merellinen saaristo* ('Archipelago at the seafront') as one of top three projects to be completed during a three-year period from 2015. The aim was to make the archipelago area internationally competitive through the development of networks, service infrastructure and product commodification.

A very interesting addition to the tourism destinations of the Archipelago Sea was Örö, an island in the outer archipelago. The Finnish Defence Forces left Örö Coastal Fort in 2014, at which point the island was incorporated into the Archipelago National Park. Örö's century-long period as a coastal fort ended and the previously closed island was opened to the public. Metsähallitus aims to safeguard Örö's rich cultural heritage and protect its exceptionally diverse nature by developing the island into an attractive natural and cultural destination that complements the offerings of the Archipelago National Park.

Construction

In Pargas and Kimitoön, the two municipalities of the BR, there are approximately 14,000 summer cottages (2023). They constitute two of three top municipalities in Finland with more summer cottages than inhabited properties. Due to the huge number of cottages, in addition to the trend of building and renovating buildings for part-time living, construction seem to be an ever-growing industry. The Russian invasion of Ukraine led to a general rise in building material prices. Despite this, the construction industry in the archipelago was not significantly affected.

State employment

Historically, governmental jobs have had 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, including during the past decades. Pilots have been present on Finland's southernmost inhabited island, Utö, since the 1600s. The Utö pilot station has played an important role in many ways, and even today pilots are vital for many cargo vessels – as well as providing local employment. One of the last governmental employers is the West Finland Coast Guard District, which still has one office in Nagu and one in Hitis, both located in the BR.

Multiple jobs

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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 is particularly pertinent for 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 handicrafts.

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.

While international tourism grows worldwide, Southwest Finland still attracts fewer international visitors than regions like Lapland. However, tourism in Finland's southern region is one of the top three employment generators and showing significant economic value for the area. The ASABR is a steadily growing tourism destination, and the archipelago has been defined by Visit Finland to be the area in Finland with the largest potential for tourism growth. Tourism is the only rapidly growing industry in the archipelago. International tourism has shown relative growth in recent years, but the overall volume remains very moderate. For example in 2024, there were 2,129 registered international guest nights, less than 3% of all guest nights in the Municipality of Kimitoön. Germany is the most consistent international market, accounting for more than 1,700 guest nights in the period 2020–2025. Other notable markets include Estonia, Latvia and the Netherlands, while around 30% of guest nights come from smaller-volume countries. According to Visit Finland (2023), German and Central European visitors are drawn to nature, tranquillity, and sustainability, which makes them a good fit for destinations like Kimitoön in the ASABR. (Read more in: Törnroth, S. (2025). *Sustainable and International Tourism Development in Kimitoön: a Service Design Approach*. <https://urn.fi/URN:NBN:fi:amk-2025060821507>)

There has been no method to measure the actual total number of tourists, but the Archipelago Trail, for instance, which goes through parts of the BR, shows an increase in the number of visitors from 12,500 people in 2000 to 37,500 in 2010 and 59,000 in 2021. The increase in ferry passengers and total estimated overnight stays in private apartments and commercial accommodation combined shows about the same nearly fivefold increase during the same time span. More and more focus has been concentrated on keeping the development sustainable and on spreading out visitors' arrival to outside the peak season.

Archipelago Centre Korpoström, administered by the ÅSS, Metsähallitus's Parks & Wildlife Finland unit and the Municipality of Pargas, is today the only visitor centre in the BR and is

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located on the island of Korpo. The Archipelago Centre brings together art, archipelago culture and science in close connection with the UNESCO biosphere context. The centre produces an exhibition every year in close cooperation with the BR Office. The extremely popular Kids' Lab is run by the BR in cooperation with ÅAU, which manages a research station in the centre. The centre is aimed at tourists of all ages as well as local residents who want to enjoy the wonderful nature, relax by the sea and participate in many different activities. The centre is available for cooperation and attracts all kinds of interesting events. The unique location in the Archipelago Sea at the threshold to the Archipelago National Park opens up opportunities for the more adventurous, but also interesting possibilities for all kinds of marine research.

There are not actually any official visitor centres for the Archipelago National Park anymore. The Nature Centre Blue Mussel in Kasnäs, administered by Metsähallitus's Parks & Wildlife Finland unit, was closed in 2017 due to budget cuts. Archipelago Centre Korpoström today serves several functions in support of the Archipelago National Park. It operates both as a service station with workshops, office spaces, and storage facilities, and as a visitor centre providing information and education about the archipelago's nature and culture.

Other popular destinations in the BR are the islands of Själö, Jurmo, Björkö, Rosala, Kasnäs, Örö, Bodö, Jungfruskär, Berghamn, Brännskär and Utö. All of these are unique island destinations, each with a slightly different profile, attracting a variety of target groups. Some are visited by birdwatchers following bird migrations, others by sailing enthusiasts who love the archipelago, and some by nature- or culture-hungry cyclists travelling by ferry. Själö, with its fascinating history, is probably the most visited small island. The majority of tourists still visit the ASABR by car and mainly stay on the main islands, which have a wide range of services.

Around 80% of the visitors to the area have for a long time been domestic. Only in the last ten years, with the exception of the COVID-19 years, has there been a slight increase in the levels of international tourists. 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 through wellness holidays during the off season, with a focus on nature, quietness and wellbeing. Here, the efforts in finding new target groups abroad are important for low season growth.

Activities. Visitor surveys are regularly carried out in the Archipelago National Park, the most recent ones in 2019. According to these studies, most visitors visit to enjoy nature, the scenery and relaxation. The most important motives for visits were mental wellbeing and enjoying time with friends. The most convenient way to move around in the national park is by boat, so sailing and motor boating are important activities. A good number of sustainable nature activity providers, such as kayaking companies, have been established and spread the word about the archipelago as a perfect destination for small group eco-tourism. The national park has 13

nature paths showcasing special natural, cultural and /or historical values and two underwater nature paths for divers and snorkelers.

Outside the national park, bike and car tourism are popular, and the main islands 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 quieter activities like bird watching, and nature photography are also popular. The public right of access, or so-called ‘Everyman’s Right’, gives, by international standards, citizens (and foreign visitors) to Finland exceptionally equal and diverse opportunities outdoors.

A new niche in tourism has been established in the archipelago with the St Olav Waterway Pilgrimage Route. Pilgrim on the Sea was an international project that created the first pilgrimage and hiking route between Finland and Sweden through the archipelago. The project ran from 2016 to 2019 and was funded by the Central Baltic Programme. The project partners were ÅAU; the Town of Pargas; Novia University of Applied Sciences; the Franciscan Association of Kökar; the municipalities of Sottunga, Söderhamn and Östhammar; and Pilgrim Time Sweden. The route in the Finnish archipelago is 4–5 days long depending on the length of the walking days and how much you want to experience in the archipelago. It is easy to walk from Turku to Mariehamn in Åland, in one week. There is a main trail that goes through Turku, and through the BR to Galtby in Korp. From the BR the trail continues by ferry to Kökar, Sottunga and mainland Åland. From Grisslehamn in Sweden, the route continues north along the coast and three different existing routes connect to Norway.

The BR Office coordinated a collaboration between local operators – with the school and preschool centrally involved – around the creation of a biosphere trail in Korpo. The trail is about 2 km long and winds through diverse natural environments: coniferous forest, a small hazel grove, rocky terrain, and along roads near the school centre in Korpo and Verkan’s Guest Harbour. The overarching theme is the balance between people and nature, highlighting the very essence of our UNESCO ASABR. The trail crosses rocky ground and requires hikers to be agile on varied terrain. The schools and preschool use the trail as an outdoor classroom, while tourism companies can integrate it into their activities.

Sustainability.

In Finland, Metsähallitus manages most of the state-owned protected areas, like the Archipelago National Park. Thus, it also has responsibility for tourism development in connection with the protected 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. Local implementation has been done through activating companies with the Sustainable Travel Finland programme and sustainability certifications.

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Over the past decade, the ASABR 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 promote sustainable tourism through communication, cooperation and education together with the growing network of Biosphere Partners. New tourism products that reflect all dimensions of sustainability are being born through cooperation between partners. A regenerative approach to tourism development strongly supports the holistic agenda of the BR.

The Finnish Defence Forces left Örö Coastal Fort in 2014, at which point the island was transferred to the administration of Metsähallitus and incorporated into the Archipelago National Park. Örö's century-long period as a coastal fort ended and the previously closed island was opened to the public. Metsähallitus aims to safeguard Örö's rich cultural heritage and protect its exceptionally diverse nature by developing the island into an attractive natural and cultural destination that complements the offerings of the Archipelago National Park. Örö is an extremely important area for threatened species and for habitats worthy of protection. The habitats are particularly representative because they have been exceptionally well preserved in their natural state. This is largely thanks to the Finnish Defence Forces, whose activities have worn down the terrain to a reasonable degree and prevented access to the island by outsiders. A plan for the development of tourism on Örö has been drawn up. The vision is that the island will act as a model for combining larger-scale tourism with effective protection of the sensitive archipelago nature. Today, the facilities are rented to a tourism entrepreneur, who runs a tourism business including guest harbour, hotel and restaurant.

Metsähallitus 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. Some of these proposed indicators are used continuously, while others have not been measured due to a lack of resources. The ecological effects of tourism are considered small, due to relatively small-scale tourism and effective management of the Archipelago National Park.

Tourism development in Kimitoön is guided by both the UN SDGs and the UNESCO BR objectives. These objectives, such as conservation and sustainable development, are reflected in local strategies and projects. The Municipality of Kimitoön focuses on economic sustainability, as tourism is necessary for maintaining the vibrancy and overall habitability of the archipelago.

New initiatives in Kimitoön have concentrated on sustainable and international destination development. A co-created strategic roadmap (Törnroth, 2025) highlights five priorities: sustainable infrastructure and visitor flow management; season extension; support for sustainable business growth; international positioning and marketing; and knowledge-based, participatory development.

In addition, the Municipality of Kimitoön is preparing to obtain a ***Green Destination Certificate*** in 2025, which includes systematic tourism impact assessments and reporting. According to the Green Destinations framework, tourism's economic impacts (e.g. employment, local purchasing, business viability), ecological impacts (e.g. resource use, waste management, conservation of marine and island ecosystems), and social impacts (e.g. community wellbeing, cultural identity, stakeholder participation) will be evaluated and monitored regularly.

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 in 2019, the local economic effect of visitors in the national park was estimated to be about EUR 7 million (EUR 6.4 million in 2015) and 59 person-years (77 person-years in 2015). The national park has 33 partner companies (2022). However, tourism cooperation has been limited in recent years due to resource constraints and has been concentrated on Örö. The role of Metsähallitus is to familiarise the partners with nature conservation and the values of nature, and to explain the boundary conditions for their activities.

Tourism is one of the main sources of livelihood in the area. Tourism businesses are typically small family businesses. 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 the tourism industry. Because of the short tourism season, private tourism entrepreneurs typically cannot sustain themselves on tourism only, but income from tourism is an important side income. Local farmers are also supported by tourism, with many farmers supplying restaurants and businesses with locally produced food products. An increased general interest amongst people in visiting farm shops and buying 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 the need for projects about supporting the development of artisan food. Artisan food projects have offered education on food processing, in order to strengthen the entrepreneurs' knowledge, develop their methods and boost their entrepreneurship. The results of the project were encouraging – new companies were set up, already established companies developed further and new local food products came onto the market.

Over the years, several projects aimed at extending the season have been realised by the municipalities. These have provided businesses with new knowledge and new tools to develop their own activities, as well as increasing cooperation between stakeholders. For instance, during 2022–2023 over 15 companies from the BR area took part in a project entitled 'Enhancing Tourism Services: Productization, Visibility and Accessibility in the Sparsely Populated Archipelago', and developed a large number of new low season products together for international and domestic markets. Several have also been inspired and helped to certify their company with a sustainability certification through project-based development.

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The BR has had a fantastic possibility to strengthen tourism and the local economy through the work of the ÅSS, which acquired archipelago properties with the aim of promoting all-year-round accommodation and activities, thus preventing these socially and culturally important properties from being used solely as a place of private leisure. The foundation partly or fully owns three properties that are important from a tourist point of view: two properties rented to families with tourism companies on the small islands of Brännskär and Björkholm and Archipelago Centre Korpoström. The tourism services offered at Brännskär; a marina, cafeteria and adventure services, are run in a sustainable way, supporting the local economy. The population of Brännskär has grown from zero in 2009 when Brännskär was purchased to seven today. At Björkholm, the Kronehags, a local couple, chose to donate almost the entire property and their life work, the holiday village with several cottages, a conference space and a church, to the ÅSS in autumn 2020. Today, the place is rented to a family, and the population has grown from two to five people.

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 the 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 the rest of Finland and Europe generally, becoming more and more economically pressed. Producer prices are constantly decreasing. Furthermore, overall trade has changed in such a way that farmers themselves must be more market-aware, signing contracts at the right times, securing fertilisers and other supplies, and selling products such as grain at the best possible prices. Small farms in the archipelago cannot compete by 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. However, since Finland's entry into the EU, the number of farms growing special varieties of vegetables, new potatoes etc. has for several different reasons been decreasing. The number of farms, regardless of their production type, has declined, while overall production has not necessarily fallen. Still, the BR is considered the region of new potatoes, and the first new potatoes are harvested here. In the BR the climate is also very suitable for fruits and berries and you can find Finland's largest organic apple farm on the island of Heisala in the BR.

Of the current challenges in the region, the choice of crops in view of weather conditions is affected by changes to the climate. The hot summers have become a challenge for farmers who

have suffered reduced harvests due to drought. Coriander has been highlighted as an alternative crop that is suitable for the fields of the archipelago, because it tolerates drought well.

Another challenge, which has now been solved, has been the recycling of agricultural plastics. In future, the costs of recycling will be borne by the companies selling the products. This will be done by introducing a recycling fee included in the purchase price. A project has also been run by UTU to collect old agricultural plastic left in nature.

Agriculture has had a major negative impact on the state of the Archipelago Sea for decades. However, in the past decade, significant investments have been made in water protection within agriculture by reducing nutrient leakage in various ways. Measures that have been tested and established include keeping fields covered with vegetation year-round. Currently, 70–80% of the fields in Åboland have some form of winter vegetation cover. Efforts have also been made to grow catch crops, which are cultivated solely to bind nutrients, as well as to treat fields with gypsum or structural lime, which bind nutrients to the soil. Gypsum has now been spread over approximately 70,000 hectares in the Archipelago Sea's catchment area. The development of new technology and precision farming has also greatly contributed to reducing nutrient leakage into the sea. In addition, the cultivation of biodiversity and soil improvement crops has become more common in recent years, which at the same time helps to increase biodiversity.

The BR Office has actively supported local producers. In connection with the BR, the municipalities of Pargas and Kimitoön have run several projects within the food sector. Active projects in 2013–2018 include: *Mathantverk i Finland* ('Artisan Food in Finland') and *Kustens mat* ('Coastal Food'), focusing on introducing the concept of artisan food ('*Mathantverk*'), which was developed in Sweden by the national resource centre Eldrimner. The projects worked 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. The artisan food projects have also played a significant role in employing women in connection with agriculture.

The profession of food artisan is a new and growing one. Food artisans use food crafts to create unique products with a rich flavour, high quality and distinct identity. The products are mainly made from local raw materials that are processed carefully, on a small scale and on their own farm or in their own company. Food crafts are characterised by the fact that people's hands and skills are involved throughout the production chain. Food crafts honour old traditions or combine them with new innovations. '*Kustens Mat*' was a national Finland-Swedish food crafts project that started as a follow-up to the artisan food project and was initiated by the BR. Through this cooperation, the foundations for a network of food artisans throughout Finland were laid. A national association for food artisans was established and national championships with several categories in which entrants can compete have been arranged since then and have been bringing together experiences and knowledge in artisanal food processing. Today, there is even a certification of artisan food products managed by a national association for artisan food.

There has been a positive development of straight-forward producer-consumer trade in the area, called REKO. The REKO retail and distribution model offers customers a way of ordering

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products directly from the producer, without the need for middlemen. The REKO networks operate via Facebook as closed groups in which orders and deliveries are agreed on. The groups are run by volunteers, who do not receive payment for their contribution. Today, there are REKO groups in both Pargas and Kimitoön. Another successful direct sales system is small, self-service farm shops.

Livestock farming

The number of livestock farms has decreased in recent decades, while the remaining ones have grown bigger. Many of these are sheep farmers with only a few animals that are kept without any economic interest. Some combine sheep farming with other business activities like tourism. Animal farming in the archipelago has both ecological and cultural benefits, as long as traditional methods are maintained. Small-scale farming is the only possibility in the scattered landscape in the archipelago, but it is a good precondition for the production of quality products. The biodiversity and the cultural values of the traditional agricultural landscape are dependent on management by grazing animals.

Both cows and sheep are needed as grazers in preservation and restoration of traditional biotopes. During recent years, small-scale livestock farmers have been fighting many challenges. The increasing bureaucracy and stricter requirements for farms that have signed environmental agreements for grazing areas are making livestock farmers frustrated and stressed. Since 2024, grazing areas that were previously approved no longer fulfil the Food Authority's new interpretations and instructions for environmental agreements. Many farms are now losing income from the agreements. In particular in the Åboland archipelago, where the costs of grazing animals on the islets are high, the loss of income is a severe blow to livestock farmers. The preservation of biodiversity is not fully taken into account in the new interpretations. There are legitimate concerns about the future and the interest of future generations in taking over farms, as challenges mount. At the same time, grazing is of utmost importance for biodiversity on the islands. In the summertime, many of the islands in the national park and the BR are grazed.

Interest in quality meat products in general has probably increased and the farmers have good channels for selling directly to customers. The BR has promoted meadow meat from animals used in landscape management by raising awareness of the importance of the work done by the farmers and their animals. Over the past two years, a social media campaign initiated by the local meadow meat farmers and carried out by the BR Office, in cooperation with the national association of meadow meat producers, has been conducted in connection with National Meadow Meat Day and the International Day for Biological Diversity.

Fishing industry

Commercial fishing in the Archipelago Sea is a traditional livelihood struggling with economic viability. The number of professional fishermen in the Archipelago Sea has been decreasing since the 1980s. In the BR there is small-scale coastal fishing with nets and/or fyke nets and trawling. In 2024, there were a total of 24 registered professional fishing units, and perhaps

slightly fewer than 30 professional fishermen in Åboland, including both BR municipalities in their entirety (compared with 95 in 2015). The three most important scaled fish species caught are zander, perch and whitefish, which together account for around 70% of the total commercial catch. There are fishermen in the BR who conduct salmon fishing using seal-safe traps. Salmon fishing requires the professional fisherman to have an individual quota. Most of the fishing for herring and sprat is done with trawls, but there are still a few fishermen who fish with nets. Of the herring catch, only 17% is used directly as food for people and of that 4% stays in Finland and the rest is exported. The rest of the catch is used for fish meal production (34%), feed for the fur industry (4%) or export as both fishmeal and feed (44%). The average age of professional fishermen in Finland is over 60 years old and there are difficulties in attracting younger generations to becoming fishermen.

There has been a constant drop in profitability for many years now, not least due to the economic competition on the world food market. The costs of things like fuel and transportation have increased, which has reduced the profitability of fishing in our vast archipelago. Since people still want to eat fish, and preferably cheaply, this is compensated for by importing farmed Norwegian salmon. However, local markets work in such a way that those who still fish sell their catch in the nearby area, and the local fish no longer reaches the big cities. 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 for 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. Zander and perch play some role for almost all coastal fishers, making it essential to safeguard and promote the fishing of these species. This is also supported by future projections: LUKE estimates that stocks are increasing, and forecasts suggest that perch species will benefit from climate change.

The cormorant benefits from the nutrient-rich waters and has therefore its numbers have increased sharply in recent years. Successful conservation programmes have led to the recovery of the grey seal population, after a sharp decline during the 1970s. The grey seals suffered greatly from PCB discharges into the Baltic Sea, as the females became sterile due to this environmental toxin. The ban on the use and release of PCB and DDT has had a positive effect on the grey seal population. Seals and cormorants cause direct damage to fish landings and equipment, but are also suspected of causing changes in the behaviour of fish and in fish stocks, and their geographical distribution. Several projects have been carried out to combat the problem of direct damage and several versions of seal-safe fishing equipment have been developed. In Finland, problems are also resolved by paying compensation to the affected fishermen. The EU's banning of all trading in seal products affected the use of seals as a natural resource in hunting. Soon, seal hunting skills might also be lost.

Herring landings have escalated, but the demand on the market has previously been low. The demand for herring as a food fish has partly been affected by its high levels of dioxin in recent decades. Dioxin levels have fortunately decreased, so that herring is now classified as 'clean' in the Archipelago Sea. The new fishmeal factory on the island of Kasnäs, inside the BR, has increased the demand for local herring and sprat. Based on a study by LUKE (Setälä et al.

2016, <http://jukuri.luke.fi/handle/10024/535286>), the new fishmeal plant has had 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. Kasnäs fishmeal plant enables recycling of nutrients from the Archipelago Sea and dioxin and PCB compounds can be removed in the process.

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 fishing operations in Finland remove some 500 tonnes of phosphorus annually from the Baltic Sea. Most of this consists of nutrients that have accumulated in herring and sprat in open sea areas. Fishing for cyprinids and other underutilised coastal species is 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.

During the last few years, new possibilities for fishing 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 consumers would like to support the local producers. The surveys indicate that visitors to the archipelago are interested in local fish and also in species like pike, cyprinids and bream. In the Local Fish Project carried out by the John Nurminen Foundation between 2015 and 2019, a market-based value chain for cyprinid fish from the Archipelago Sea – from sea to plate – was created for the first time. At the same time, the image of cyprinid fish as a food fish was significantly improved. In the project, a total of 700 tonnes of bream and roach were caught from the Archipelago Sea and the Bothnian Sea, removing approximately 5 tonnes of eutrophication-causing phosphorus from the sea along with the fish. Alongside these successes, the project also identified that there is still room for development in the value chains related to the commercialisation of cyprinid fish.

According to current knowledge, some of the most significant impacts of climate change will include rising air and sea temperatures, shorter ice cover periods and increased difficulty of winter fishing, more winter precipitation, and an increase in nutrient runoff from the mainland. Additionally, the salinity of seawater is expected to decrease. Coldwater species are likely to decline, while freshwater species that benefit from eutrophication may become more abundant.

Fish farming

Fish farming serves as a good complement to the fishing sector to ensure the availability of fish for human consumption. About a quarter of all farmed fish for human consumption in Finland is produced in the Archipelago Sea. Fish farming is, however, a relatively new industry

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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 number of fish farms. Since 2005, the number of fish farms has remained relatively constant, but the output has decreased somewhat. In recent years, environmental authorities have conducted a repositioning of farming units to concentrate emissions in 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 in a few large companies. The relocation has led to larger units further offshore, generating a lower local environmental impact. Today, there are about 25 fish farming units in the BR. In the future, the local eutrophying impact of aquaculture is expected to decrease further as some facilities are moved to areas where the environmental load is spread out wider by currents in the open sea. The collaboration between fisheries, aquaculture, and feed producers in creating Baltic Sea feed is an important part of the circular economy. The fishmeal factory, which was established in 2015 in Kasnäs, has played a significant role in the development of fish feed based on Baltic Sea fish. When aquaculture uses feed made from fish caught in the Baltic Sea, the amount of nutrients entering the sea from external sources is reduced, and nutrients circulate within the Baltic ecosystem. In practice, nutrients are extracted from the sea in the form of herring and sprat, which are then used to produce fishmeal and fish oil as raw materials for feed.

Forestry

Forestry is quite a stable industry that perhaps has decreased slightly since Natura 2000 was implemented. 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 was extended to 2025. The programme promotes voluntary conservation schemes for privately owned forests.

Some local inhabitants make part of their livelihood from their own forests. Logging in the archipelago requires special equipment. In sustainable forestry, timber production is combined with efforts to support biodiversity, recreation, wildlife management, and landscape conservation. Forestry must also take into account the forest's role as a carbon sink and carbon storage. Forest owners can choose between continuous logging or logging by figures. Everyman's Rights give everybody access to the forests and permission to pick berries and mushrooms.

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

General aspects of the Biosphere Reserve area

Tourism is one of the main sources of livelihood in the area and most tourism companies are small, family-run companies. In 2019, the local economic effect of visitors in the Archipelago National Park was estimated to be about EUR 7 million and 59 person-years.

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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 from the tourism industry.

The ASABR is one of the most densely populated areas of summer cottages in Finland, meaning that a relatively large number of people spend their leisure time or extended periods working remotely. Remote work has increased significantly since the COVID-19 pandemic.

Archipelago residents often have multiple professions and are accustomed to adapting their work according to the seasons. There is a long tradition of making a living through multiple occupations, which means that business growth is not always the primary goal. This has been particularly evident among small-scale food producers, who prefer to keep their business activities rather small, alongside some other work. In the **KulTa project** ('Consumers at the Heart of the Food Economy'), it was found that in 2020, 94% (52) of the food companies in Pargas and Kimitoön employed fewer than five people. The largest sector was bakeries (36%), followed by the processing of vegetables, berries, and fruit (25%), fish processing (21%), and beverages (8%).

Aspects of activities initiated by the BR Office

The management of the ASABR 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 on. The BR Office is located at the Department for Livelihood in the Town of Pargas and is linked to the Development Department in the Municipality of Kimitoön, in which other business-related activities are also conducted. This fact makes it easy to link BR activities to local business issues and introduce reflections of sustainability into other operations within the departments.

The BR has the potential to contribute to immigration to the area through its UNESCO status and its work on local sustainable solutions, which may attract young families to settle in the area. For example, the initiatives of the Biosphere Academy and various networks and community activities help strengthen the sense of belonging and everyday wellbeing.

The BR has very much highlighted the economic aspects of cultural landscape conservation and encouraged livestock farmers to brand their products as quality products, using labels such as meadow meat, if they conduct management of cultural habitats. The BR Office has also supported local economic development by promoting local food and small-scale food processing in the region (see 5.10).

The organisation of the BR has had very limited funds for conducting its activities. In 2008, the ÅSS was founded. The foundation works to ensure the vibrancy of the archipelago by promoting and supporting opportunities for permanent living in the archipelago and by promoting sustainable economic, ecological and socio-cultural development in the Archipelago Sea. The objectives of the ÅSS go hand in hand with the ambitions of the BR. These two bodies work in close cooperation, which has opened new opportunities for the BR Office.

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The ÅSS flagship base is a culturally and socially valuable archipelago property, purchased on the open 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 was at that time not inhabited any more, but is now the home of two families and a total of seven people. The new inhabitants have developed an innovative tourism business and it is now one of the most visited small guest harbours in the region. All the construction work and 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 has served as a role model for other tourism entrepreneurs in the region and also as a model for the purposes of the foundation. As a result, the Åboland Archipelago Foundation received a donation consisting of a cabin village with an adjoining conference space and chapel on Björkholm in Pargas. A similar model to that in Brännskär was developed there, and the number of residents grew from two to five. Today, a young family rent the property and run the operations. Through the development of these models, the ÅSS has been able to realise an action that exactly corresponds with the purposes of the BR.

The BR has not developed into a tourist destination in itself, but the BR Office has participated in the development of sustainable tourism through strategic planning, constructed a new nature and culture destination called the Biosphere Trail in Korpo, handed out information material, and made the BR visible through flags and signs around the reserve. All these efforts to improve the visibility and profile of the BR can contribute to the attractiveness of the area and thus to an increase in tourism.

The most important of the efforts to disseminate knowledge and make the BR visible, as a positive brand for the area, has been the commitment through the Biosphere Partner Network and the Biosphere Ambassador network. Biosphere Partner companies have also potentially benefited from the visibility of being a Biosphere Partner, and the visibility of their sustainability values.

Virtually all events arranged by the BR Office are arranged within the BR and hence favour 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 economic sustainability are conducted by development projects. EU-funded projects always have their own quantitative indicators. However, qualitative indicators are often more important for assessing 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, the focus lies on initiating, catalysing and starting up projects and initiatives. When up and running, the projects are then handed over to other operators. What can be counted is the number of projects with a local economic approach, the number of entrepreneurs involved and the number of companies started.

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The actions of the BR are managed according to a work plan. Every year, the work plan is evaluated in the annual report, which is approved by the Steering Committee. In the annual report, the implementation of different projects can be monitored. Quantitative indicators are difficult to use, since qualitative indicators often better describe the results. Quantitatively, the BR Office measures, for example, the number of events organised, persons in the audience, presentations, initiated or implemented projects, visitors to BR exhibitions, children involved and so on. However, the estimate depends on whether the BR Office is the sole arranger of the events, or if they are arranged in cooperation with another party, or if another party has implemented what the BR Office has initiated. Depending on different needs, the role of the BR Office can be very different. The projects of the BR are often pieces of a larger puzzle. Its long-term goals are achieved through many small efforts carried out by various operators over an extended period of time. In this context, it can be both difficult and perhaps not even meaningful to try to measure the specific impact of individual BR projects, as every contribution is equally important. (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 of Mainland Finland* entailed Finland's Rural Development Strategy for the period 2014–2020 and focused on:

- improved skills and dissemination of information, and more innovations and cooperation 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 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 associations (Leader groups) with their own regional strategy. The BR municipalities Kimitoön and Pargas together with the Municipality of Kustavi, form a local Leader group called 'I Samma Båt'. During the programme period 2014–2020, the transition

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period in between the programme periods, and current period of 2023–2027, the BR initiated and participated in several Leader-supported projects. The Leader group ‘I samma båt’ typically distributes around EUR 400,000 in grants annually. The funding is allocated to between 12 and 20 projects each year, with project budgets usually ranging from EUR 10,000 to EUR 100,000, although they can occasionally be higher.

The Central Baltic Programme 2014–2020 and 2021–2027 is a funding programme financing cross-border cooperation projects in the central Baltic Sea region that aim at solving common challenges together and across borders. The participating countries are Finland (incl. Åland), Estonia, Latvia and Sweden. The programme budget for 2021–2027 is EUR 152 million from the European Regional Development Fund (ERDF), which can be applied for in the calls. The BR Office has participated in several CB projects.

The Interreg Baltic Sea Region 2014–2020 and 2021–2027 covers a slightly larger area with nine countries: eight EU Member States and one non-EU country around the Baltic Sea. Currently, the ASABR is involved in a project together with other BRs along the coast of the Baltic Sea called ‘Supported by Nature’ with a total budget of about EUR 4.5 million.

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.

Several projects have been carried out to increase employment in Kimitoön, which has lost many jobs due to the closure of larger industries. The same applies to the entire archipelago, although the change there has occurred more gradually, creeping in from all directions. In the archipelago, the number of microenterprises is high, and people are accustomed to making a living through various seasonal activities. The concept of the ‘multi-skilled entrepreneur’ is well established in the region. Most businesses in the archipelago are, in one way or another, closely tied to nature and dependent on collaboration with other entrepreneurs, which makes sustainability issues especially important.

During the last period, serious efforts have been made to improve guest harbours in the area. The Town of Pargas has been responsible for two projects with the main goal of improving the services available in the guest harbours 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 of improving accessibility, ecology and comfort. The harbours invested in family-friendly solutions and environmentally friendly technology, including lighting using solar panels and charging stations for electric motors, as well as creating joint marketing material.

Another very important project for small guest harbours in the BR was **Smart Marina**, an Interreg Central Baltic Project, aiming to develop climate-smart solutions in 32 guest harbours around the Baltic Sea Area. The countries or regions participating are Sweden, Finland, the Åland Islands and Estonia.

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Below are some of the sustainability projects realised since 2015 that concern the microenterprises or small enterprises in the BR:

The project **MÅSSE** (Microenterprises in Åboland in Cooperation for the Archipelago Sea and Effect), focuses on both the UNESCO ASABR and local entrepreneurs. Through the environmental project, the Municipality of Kimitoön, together with the Town of Pargas, wants to highlight its small businesses in the ongoing work on sustainable development in the archipelago. In practice, the project aims to achieve the following: highlight the role of local small businesses in work for the Archipelago Sea, consolidate an organised pathway for cooperation and concrete actions for the Archipelago Sea and create a concrete toolbox for the businesses to take part in.

The **More Local Food in Southwest Finland** (*‘Mera Närmat i Egentliga Finland’*) project includes a dedicated subproject in the archipelago region. The project serves as an active link between local food producers and the food businesses and food sector in Southwest Finland.

Coastal Food (*‘Kustens Mat’*). Through this collaboration, we laid the foundations for a nationwide network of artisanal food producers in Finland, bringing together experiences and knowledge in artisan food processing (*‘Mathantverk’*). The project offered training in artisanal food production with optional specialisations that participants could choose. It also aimed to develop and stimulate food processing as well as opportunities for growth. Artisanal food producers represent a growing professional group. In artisanal food production, unique products with rich flavours, high quality, and a strong identity are created. These products are mainly made from local raw materials, carefully refined on a small scale, often on the producer’s own farm or within their own business. A defining feature of artisanal food is that the human hand and expertise are involved throughout the entire production process. Artisanal food honours old traditions or combines them with new innovations.

Nutrient Cycling in Archipelago Sea Tourism Destinations (*‘SaaRa’*). As a result of this project, a replicable operational model was developed for the Archipelago Sea region to serve tourists, boaters, and tourism entrepreneurs. The model aims to reduce food waste and enhance local nutrient cycling in challenging tourism destinations. Practical guides were produced to support restaurant businesses, tourism service providers, and boaters in their daily operations.

St Olav Waterway

The project that developed the St Olav Waterway Pilgrimage Route during 2016–20 was run by the Archipelago Institute at ÅAU in cooperation with several partners (see 5.2).

The project **Productization, Visibility, and Accessibility of Tourism Services** has a focus on the outer archipelago. The main goal of the project is to create the conditions for extending the tourism season and promoting growth in the sparsely populated archipelago areas. Most of the new tourist product packages tested during the project have a direct connection to the BR’s activities through its partner companies, like the ‘Explore the Biosphere’ trip that takes you out sailing on a traditional boat. During the trip you get to discover nature in the semi-natural

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meadows of the BR, at the same time as you learn more about the preservation of biodiversity by actually doing some practical nature preservation work. In the evening you are served a dinner featuring meadow meat.

Beekeeping in the Archipelago was a mapping project. The survey examined, among other things, the number of beekeepers, the need for training, interest in expansion, further processing of honey, other income from beekeeping, cooperation with growers, joint procurement and cooperation on equipment, interest in and the need for joint sales and marketing efforts, the need for a common brand for archipelago honey, and whether there is interest in joint wholesale of honey to retailers or whether anyone is interested in acting as a retailer of the honey produced by hobby farmers with single bee colonies. The survey tried to reach, as far as possible, all beekeepers in Åboland. Behind the planning of the mapping project is a working group consisting of beekeepers from Kimitoön and the ASABR.

Fish products from the Archipelago Today and in the Future project aimed to pass on knowledge, inspire and create new contact networks. The project produced films to support efforts to increase the consumption of domestic fish and increase interest in unutilised fish species and support the development of new innovative products from them. In this way, it is hoped it will help keep coastal fishing alive in the future.

Within the tourism sector, the Parks & Wildlife Finland unit of Metsähallitus has traditionally had the main responsibility for sustainability issues. They formulate strategies, committing themselves to and handling the cooperation agreements with local entrepreneurs who need to fulfil certain criteria and receive the appropriate training before they can utilise the national park in their businesses. But the role of the municipalities in strengthening sustainability among local tourism businesses has grown larger.

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)).

The major change, affecting everything, is the depopulation of the archipelago. At the same time, the number of people in the area, i.e. people in second homes 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 jointly by many siblings are falling into disrepair. Much of the traditional knowledge about life in the archipelago is disappearing with the older generations, e.g. how to move around on the ice, skills for hunting seals or sea birds and traditional construction methods for houses, fences, boats and so on. The challenge is how to restore the traditional knowledge in both a passive and an active way.

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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 organisations of the BR and in the BR Office, there are possibilities for trainees and placements for undergraduates. The BR Office has also been coaching students with their final degree projects and contributed with subjects for student projects. When possible, the BR has offered smaller jobs to young people, like making blogs.

The Kids' Lab has offered summer jobs for young people since 2016. Today, the Kids' Lab can employ four young people for 1–2 months in the summer. Of these, two are under 18, and they can work as assistants to gain their first experience of work. Everything is financed with projects.

The educational programme for *Mathantverk* has been a 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-scale 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 products. Agriculture is an important industry in the BR, but despite this, local food products were conspicuous by their absence. There was a clear need for training of food processors, partly to provide more knowledge in producing quality products, but perhaps above all to develop attractive, marketable products, and at the same time support new food processors in believing in themselves and their products. Thanks to the artisan food training programme, many people finally dared to invest in such products, which had previously only been sold locally, and others invested in processing kitchens in order to expand their sales. The artisan food projects led to the establishment of a national association of artisan food craftspeople, the organisation of national championships and the branding of the artisan food products. Medallists in the various classes, such as jams, marmalades, juices, varieties of bread, etc. were given the right to attach a sticker featuring the medal to their product. Later on, a certification of food craft products was also developed. Today, we can find many of these products everywhere from neighbourhood shops to local grocery stores.

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 used more frequently than quantitative indicators. Quantitative indicators are, for example, number of events, participants, initiated projects, visitors at exhibitions, etc. However, the role of the BR Office in arranging programmes or starting up projects can vary a lot, which makes the qualitative indicators more relevant. The BR Office

has also been involved in several other projects that have supported the sustainable development of the Archipelago Sea area.

Around 80–100 people attend the annual Archipelago Sea Winter Meetings arranged by the BR, while the Forum for Archipelago Research, held twice a year, attracts 30–50 people. The winter meetings are probably well attended because of their networking nature. People participate to meet, establish contacts and find project partners. The BR Office has initiated, participated in or run about 15 projects a year, which is quite a lot compared with last periodic review when we reported about five projects a year. In addition, the BR Office has had a consultative role in several projects. The projects have either focused on finding a solution that promotes sustainable development, or on highlighting the sustainability aspect in a larger context. Every year since 2014, a fair for sustainable solutions for sanitation and energy has been organised in cooperation with Valonia and Pargas. The fairs have attracted about 500 visitors and 10–15 entrepreneurs presenting their products each year. In recent years, the fair has been incorporated into a bigger event called ‘Pargas Days’.

The BR is mentioned in the local media 10–20 times a year, depending on what activities are arranged. The three island newspapers in Nagu, Korpo and Houtskär feature some news from the BR almost every month. The Facebook page has approximately 1,153 followers and 153 on Instagram. The Kids’ Lab Instagram has 355 followers (2024).

Project-based work is monitored 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. Other projects use more quality-based reporting.

In 2024, the activities of the BR Office, in connection with the projects managed, employed five persons and four summer workers in the Kids’ Lab. The Biosphere Partner Network involves nine local companies. The BR Office arranged six seminars and 36 network meetings.

Good models that are created also serve as important indicators, for example models for managing cultural landscapes and the concept of artisan food. The BR often creates models or inspirational plans of action, the results of which are often only seen after several years. For more than 10 years now, 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.

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 ASABR was involved in founding the ÅSS, a foundation focused on promoting a vibrant archipelago. The foundation collects funds through gifts and donations. Its mission is to work for a vibrant archipelago by promoting and supporting opportunities for permanent housing, promoting migration into the archipelago, and pursuing also other ways of achieving sustainable economic, ecological and socio-cultural development in the Archipelago Sea area.

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Today, the foundation owns four properties either entirely or partly, all of which are very different in character. The foundation also manages a Biosphere Fund.

Brännskär, an archipelago estate with newfound vitality. The ÅSS 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 lived on Brännskär since 2010. All construction work and all activities have been realised 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, two families and a total of seven people live on the island and several new companies, and many employees during summer, are based on the island. Throughout the development of this model, the BR and the ÅSS have been able to realise an action that exactly corresponds to the purposes of the BR.

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 with one of the BR winter meetings, entrepreneurs indicated a great interest in food craftsmanship. The artisan food concept, developed by the national resource centre Eldrimner in Sweden, was presented during the meeting. In cooperation with other regions in Finland, a training programme for different trades within food craftsmanship was started. The first educational programme was held in 2013 and attended by 25 persons, of whom 16 graduated. Some were new entrepreneurs and others developed their business in order to brand themselves as food artisans. During the academic year, the food craftsmen attended eight markets and the project received a lot of publicity (45 mentions in the media). Currently, the training programme is running 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 practised on a small scale and still be profitable are sorely needed. The unique nature and geography limit the possibilities for major cultivation areas. The area is not suitable for large industrial plants either. 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 then refined and many of them possess interesting traditional recipes that could sell well amidst the booming trend in local food. To get a sufficient basis for courses and resource networking, it is important to go beyond the regional borders. A larger project including many regions along the coast was conducted. As a result of the project, a national association for artisan food producers was established, which today is a Biosphere Partner. The artisan food association has since run its own project to establish a certification programme. In addition to the educational programme, the project also initiated the national championships in artisan food, which are still held on an almost annual basis.

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Biosphere Academy

In recent years, we have developed long-term educational activities that are now brought together under one umbrella called the Biosphere Academy. The education is based on sustainability, nature, and culture within the BR and aims to strengthen the sense of belonging and the engagement of children and young people. Through the Biosphere Academy, which serves as an educational programme for the BR, we aim to promote a sustainability mindset that permeates early childhood education, as well as primary and secondary schools.

We want to strengthen young people's ability to take action for sustainability in their local environment and increase their participation in the BR. We also aim to deepen their connection to nature and the local environment by increasing knowledge about the archipelago's nature and culture. This will be done through activities carried out in collaboration with various organisations, within the framework of UNESCO's programme for BRs and the national curriculum.

Children and young people who live in or visit the archipelago are an important target group for us. The BR has long-term goals for the Biosphere Academy, which are adapted to the evolving needs and opportunities of our key partners and local society. We started by focusing on younger children, while the activities have gradually expanded to also include older children and young people. We believe that the more you know about something, the more you want to take care of it. That is why we want to create materials that teachers and trainers can use from year to year. The materials we create are always linked to the national curriculum and are available to everyone on our website. We have well-established cooperation with the nature school and the municipal education departments in our BR. We actively promote our pedagogical models both nationally and internationally and they have been spread by the SALT project.

The pike and his friends teach children about nature and culture in the BR. The mascots of this programme are soft toys. Initially, they travelled between all the early childhood education units in a fish basket. As the concept gained popularity, we decided to provide each unit with a package containing soft toys and essential materials for both teachers and children.

Every second year the theme has changed:

- 2009 - Children's rights
- 2013 - Waste management
- 2015 - The sea under the surface
- 2017 - Food cycle
- 2019 - Archipelago culture
- 2021 - No new theme because of the Covid-19 pandemic
- 2024 - Biodiversity in the Baltic Sea

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The pike and his friends are incorporated in the programme ‘The Archipelago Superheroes’ for early childhood education (ages 0–6), where the children collected stamps to become mini-ambassadors for our BR. Together with their teachers, they explore various topics, and after completing each task, they receive a stamp in their own passport. The theme packages always include a teacher's handbook that explains the concept and topic in detail. For the children, there is a passport in which they collect stamps for each activity completed. The package also contains various activities for the children, such as letters from the pike, craft activities, board games, and colouring pictures. The content varies depending on the theme. These activities focus on sustainability, nature and culture within the BR.

The pike has visited all the childhood education units in Pargas. Later on, in 2024, the pike and his friends were introduced to the childhood education units in Kimitoön, which means that the concept reached about 900 children in 2024. Through the SALT project, the model was also disseminated to several other municipalities in rural and archipelago areas.

Island Expedition, with ecological, social and economic benefits, is an adventure route around the Archipelago Sea. On the expedition visitors learn about the nature and culture of the archipelago, perform fun and educational challenges and collect stamps in a researcher passport. On each of the islands along the route, there is a sign with information and assignments for children and others with a taste for adventure. The Island Expedition also plays an important role in encouraging visitors to explore multiple small guest harbours and islands in the archipelago. The expedition has generated significant interest, and the passports distributed have been in use for several years. Later, the association Företagsam Skärgård expressed a desire to expand the programme to include more islands in the Åland archipelago as well.

Kids’ lab, to strengthen children’s relationship with marine nature. Children, young people and curious adults can be archipelago scientists for a few hours in the Kids’ Lab at Archipelago Centre Korpoström. Children can learn about different animal and plant species in the Baltic Sea, look at the animals that live in the Baltic Sea and take different kinds of water samples. Here, children can study marine life with equipment found in a real laboratory. Like the rest of the activities at Archipelago Centre Korpoström, the Kids’ Lab combines art and science. The Kid’s Lab is visited by about 2,000 people a year and offers summer jobs to four people, two of whom are under 18.

Models for promoting management of cultural landscapes and meadow meat. Numbers of permanent residents in the archipelago have declined drastically since the 1950s, while numbers of people living in the archipelago only part-time have increased significantly. The decrease in the permanent population and the rationalisation 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 was previously grazed by animals and cleared by humans to prepare winter food for the cattle, has started to go wild with shrubbery. Unfortunately, this leads to habitats poor in species, with both habitats and species decreasing significantly. The

BR was established, among other things, to provide an arena for tackling precisely this challenge. It is a multi-faceted topic, but it fits well into the concept of the BR.

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 strong emotional value – many want to preserve the landscape that they have grown up with, or the idyllic image of what the archipelago landscape 'should' look like.

Is small-scale sheep or cattle production in the archipelago economically profitable for those farmers who choose to ferry their animals out to 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 and maintained by grazing is high and only a small proportion are being maintained. Areas where habitat management can be long-term and fruitful are being prioritised. Many of the particularly valuable meadows are remote and small in size. Transportation to the islands is expensive, as is maintenance of all the fences. Animals on natural pasture are said to grow slower and local sheep breeds, adapted to grazing in the rocky archipelago, produce less meat than improved breeds. Can cultural habitat management also benefit the entrepreneurs of the archipelago economically?

In the ASABR, farmers and the authorities have worked together to promote the management of the cultural landscapes and, at the same time, support 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 with the national park. As a continuation of the earlier project promoting archipelago sheep and sheep products by arranging workshops on the processing of meat, wool and leather, several projects promoting artisan food were conducted in close connection with the BR (see above).

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, they must find out the background of the product themselves. Meadow meat is often sold directly to the consumer. Nowadays, the producer highlights habitat conservation and natural grazing in their own marketing, which certainly makes it easier for consumers to support landscape management and make nature conservation more profitable through their choice of meat products. The BR Office has arranged social media campaigns about the importance of the grazing for preserving biodiversity and a thriving archipelago.

However, based on the number of applications for EU agriculture environmental subsidies for special agreements pertaining to preserving biodiversity and cultural landscapes, one can

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conclude that the area of land that is being managed has stayed more or less equal for the past 10 years, until 2024 when the criteria were changed and many nature types were no longer counted and the areas eligible for subsidies were scattered smaller patches, leaving out everything that no longer met the criteria. This had severe effects on the preservation of cultural landscapes and biodiversity. Additionally, the number of grazing animals on natural pastures has decreased due to these changes.

The BR reserve strengthens cooperation with sustainability education in local schools.

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

The winter meeting, a forum for archipelago issues. The Archipelago Sea Winter Meeting is a forum for all those who are interested in the BR activities. Lately, the meetings have had between 60 and 100 participants, depending on the seminar's theme. Efforts have been made to reach different audiences by tailoring the theme to specific target groups. Sometimes, the forum has been used for more particular issues concerning a special focus area and so on. Nowadays, the meetings are important forums for building bridges and developing cooperation projects.

The concept of Habitability analyses of islands has been developed by the Archipelago Institute at ÅAU, in close connection with the BR. The purpose of the habitability analyses is partly to contribute to the sustainable development of the area. (See 2.4.3)

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 BR are very much about creating models. When developing sustainable solutions, the power of good examples is important. Testing how well suited the solutions are for the local conditions and showing the general public how something has been realised in a tangible way are key. In order to create models for best practices, development projects are important. These are run to test an idea or a possible solution and may either fail or succeed. Even failure can produce interesting information about sustainable solutions that can be adapted to local conditions. The BR Office is completely dependent on **external funding to run projects**. The EU has several programmes suitable for the development of the ASABR and therefore has a significant impact on how activities for sustainable development can be managed. The management of projects is relatively time-consuming in a small organisation. Another important factor for success is to **involve several – and the right – target groups in the work**. When a project is anchored in the local community from the beginning, the greater

the potential that the activities of the project will live on after the project ends. The target groups involved 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, **cohesive communication is required between all stakeholders**, as well as **strong confidence in each other**. 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 efforts for sustainable development. The BR has tried to serve as an arena for cooperation and communication, through both 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 BR. External communication preferably needs a communicator to focus on spreading good models.

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.

UTU, with the ARI; ÅAU, with its field base at Korpoström; Metsähallitus's Parks & Wildlife Finland unit; the ELY Centre; and (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, and marine biodiversity. At the universities and research institutes, the focus lies on marine biogeochemistry, biology and ecology (e.g. water quality and associated 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 common. There is also interdisciplinary research on human-marine interactions. UTU and ÅAU have joined forces in multidisciplinary marine and maritime research. Thematic topics studied at both universities include the marine and coastal environment, the maritime economy and technology, law and governance, and culture and history.

The BR Office has important tasks within this context, in terms of popularising and communicating this information to the public, both children and adults.

Metsähallitus's Parks & Wildlife Finland unit

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 environment 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).

LUKE

Monitoring and research of natural resources, including game species, fish and fishing activities, and natural habitats. Research into sustainable food production.

In 2015, the Agricultural Research Centre of Finland (MTT), the Finnish Forest Research Institute (Metla), the Finnish Game and Fisheries Research Institute (RKTL), and the Information Centre of the Ministry of Agriculture and Forestry were merged into LUKE.

ELY Centre

Abiotic and biotic monitoring of the state of the environment.

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

ÅAU

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

The research in 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.

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The Sea at ÅAU started its activities in autumn 2017 and provides knowledge on marine and maritime life for a sustainable future. The unit supports and carries out interdisciplinary research on the sea, especially the Baltic Sea, as a collaboration between natural, social and economic sciences (marine and environmental biology, industrial economics and public administration). Marine biology, traditionally strong at ÅAU, is now effectively supported by social sciences and economics: problems and opportunities are analysed through broad interdisciplinary collaboration. The overall ambition of the profiling area is to establish a marine centre of excellence that is a global pioneer, with a focus on the Baltic Sea and northern marine areas.

The mission is to find science-based solutions to our '[wicked problems](#)' in order to facilitate coexistence between marine and maritime life and a modern society that promotes sustainable growth in the Baltic Sea and Nordic maritime areas, including the Arctic.

The profiling area combines the research areas of environmental and marine biology, public administration and industrial management, and works in close collaboration with government institutions, policy makers, the maritime industry, research institutes, NGOs, private companies and donors, in a [Living Lab](#) framework.

The research has a particular focus on marine biology, regulation and other steering mechanisms as well as maritime logistics and trade, with the Baltic Sea serving as a global model.

The Sea works closely with the ÅAU [Centre for Sustainable Ocean Science \(SOS\)](#), which was established in January 2024. SOS is built upon longstanding work within The Sea and shares many of the profiling area's theoretical and methodological approaches, but focuses more tightly on biodiversity-related wicked problems in the Archipelago Sea region.

Archipelago Centre Korpoström is the Archipelago Sea field station of ÅAU.

The Archipelago Centre organises science and art exhibitions, seminars, lecture series and theme days. As a research station, it participates in and is part of several Nordic and European research projects and is part of the FINMARI consortium. The Åbo Akademi Aquarium and mesocosm facilities are part of the MESOCOSM network.

The research at the station focuses on experimental marine ecology. In addition to diving work, the station is partly involved in the inventory of marine and coastal biota in the Baltic Sea.

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Research focuses on the distribution and function of plant and animal communities in the intertidal zone, sediment biogeochemistry and functional biodiversity studies (prey-catcher interactions, behavioural ecology of fish, herbivory, etc.)

The station also serves as a base for terrestrial research in the archipelago. It has both indoor and outdoor aquarium facilities, as well as wave mesocosms.

UTU

Research in marine biology and geology, and multidisciplinary research. At the ARI on the island of Sjö, Pargas, the first long-term monitoring of the state of seawater was started in 1966. As a result of this sustained effort, the institute now has access to several time series data sets spanning more than 50 years, which help to understand changes in the ocean.

The institute is situated on Sjö island in the middle of the ASABR and is part of national (FINMARI) and European (EMBRC) marine research infrastructures. In [the nanoplastic laboratory](#), the prevalence of nanoplastics in water bodies, especially the Archipelago Sea, is studied.

As a versatile laboratory, the ARI 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 strength at UTU.

At the ODAS intensive water quality monitoring station north of Sjö island, variations in sea water salinity and temperature are monitored in cooperation with the Finnish Meteorological Institute (FMI) and the ELY Centre.

The ODAS monitoring station is also adjacent to the older ODAS monitoring station, which was launched in 2006 and collects detailed information on overall water quality, depth stratification and changes in these during the open water season. The monitoring is carried out in cooperation with TUAS and other FINMARI partners. The real-time measurement results (depth-specific seawater temperature, salinity, oxygen content, turbidity, chlorophyll-a and blue-green algae) sent by the buoy can be viewed and downloaded [here](#).

Since the early 1980s, the institute has also monitored the characteristics of the spawning herring population in the Archipelago Sea as part of a long-term project on the reproductive biology of herring.

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Meadow and grassland vegetation; weather variability; the presence of birds, moths and bat species; and the abundance of ticks in different habitats is also monitored on the island. Changes in the population of game animals on Själo and its neighbouring islands are monitored by a hunting club, which is a contractual partner of Metsähallitus.

The breeding of osprey has also been monitored on Själo via a web camera since 2006 ([Själo Osprey camera](#)).

Thanks to the unique nature, cultural heritage and long history of Själo, research into societies, history and culture plays an important role in the institute's activities. The island's diversity offers good conditions for multidisciplinary research. In biological studies, the ARI also has experience of terrestrial biological research, for example, studies on ticks. Researchers from various disciplines have studied the distribution of ticks, their living conditions and the pathogens they transmit, their presence on host animals and the parasitic species that live in ticks.

At UTU there is also a Sustainable Landscape Systems research group, which has studied place-based assessments of people's perceptions of ecosystem services and landscapes, using participatory mapping methods in the ASABR.

TUAS

Monitoring the status of water bodies and the biodiversity of the marine environment.

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 on the island of Jurmo, Pargas.

Finnish Museum of Natural History

National coordinator of bird monitoring programmes, research.

Finnish Heritage Agency

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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.

FMI

Research on marine themes, 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).

The role of the UNESCO BR in research and monitoring

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, in next chapter, some inventory, monitoring and research efforts carried out in the BR are listed.

The BR 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, together with the Archipelago Institute of ÅAU, has developed a special series of seminars entitled Forum for Archipelago Science, held two times

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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 of the Steering Committee, also work with raising awareness and science communication, giving lectures to different groups of people, e.g. in schools, or as an invited speaker at seminars outside the BR. The 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 the majority of BR inhabitants speak Swedish, but environmental information and scientific results are often published only in Finnish and English. The BR has, through the educational programme of the Biosphere Academy (see 2.4.9), a well-established relationship with local schools and preschools and has over the course of many projects developed educational material about the nature and culture in the archipelago. The BR also spreads knowledge about the archipelago through its various activities, such as the Kids' Lab, Biosphere Lab, Biosphere Experience Lab, annual exhibition at Archipelago Centre Korpoström and the Island Expedition of the Pike and his friends (see 2.4.9).

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 engage with the results from inventories or research, are becoming increasingly common. Internet services where people can report their observations are also very 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 to find new ways of sharing knowledge and engaging people.

Under the EU MSFD, which came into effect in 2008, Finland has developed a national marine management plan and action programme for the years 2022–2027 for its maritime area. The action programme includes metrics for monitoring the condition and outlines actions to achieve good environmental status. The BR is used as a platform for cooperation and engagement of local society in conducting the actions in the plan at a local level.

The BR is also often used as a pilot area in research projects such as the BIODIFUL project, where UTU plays a central role. BIODIFUL is described as a movement with the heart of an interdisciplinary research project, funded by the Strategic Research Council within the Research Council of Finland. The aim is to create a network of change agents who want to sew the seeds for urgently needed environmental transformation, and to equip them with knowhow, courage and faith, while also promoting biodiversity-respectful leadership. Within leadership research, the focus has for a long time been on the realisation of collective aims and driving transformation to achieve human wellbeing understood predominantly in material terms. In

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combining leadership and biodiversity research, the notion of wellbeing is expanded. The interdisciplinary effort of bringing together insights from both natural and social sciences aims at creating a new paradigm of sustainable leadership. BIODIFUL goes beyond research, being a movement that includes societal organisations, large and small companies, and individual change agents.

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, studies of environmental changes and studies evaluating the effects of management efforts.

At the ODAS intensive water quality monitoring station north of Själö island, managed by UTU, variations in sea water salinity and temperature are monitored in cooperation with FMI and the ELY Centre of Southwest Finland. From the same sampling point, the research institute also collects monthly zooplankton samples from depths of 0–25 m, which are currently updated in SYKE's open environmental database. In addition to this, monthly samples for various studies are collected at a depth of 20–40 m. ODAS also collects detailed information on overall water quality, depth stratification and changes in these during the open water season. The real-time measurement results (depth-specific seawater temperature, salinity, oxygen content, turbidity, chlorophyll-a and cyanobacteria, also known as blue-green algae) sent by the buoy can be viewed and downloaded.

Physio-chemical water quality data from national monitoring programmes are stored in the centralised database HERTTA, maintained by 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 ELY Centres and SYKE, but also by other research institutes and universities in both the public and private sectors.

TUAS's Coastrider research vessel provides an increasingly accurate picture of the state of coastal waters. The Coastrider operating model is based on a dense temporal and spatial monitoring network in coastal areas, modern sensor technology, and continuous water quality measurements carried out while the vessel is in motion. In this way, a considerably larger number of measurement points are obtained compared to traditional monitoring based on individual water samples. The observations focus on areas, periods, and variables for which satellite-based data cannot be produced. The Coastrider method helps identify small-scale environmental variation, pollution sources, and load-sensitive areas, while also providing background information for targeting water protection measures.

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Mass occurrences of toxic cyanobacteria 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 Centres and other observers submit their algae findings collected at observation points to SYKE. The ways of spreading the information have been developed towards online internet services. SYKE compiles all the information on the crowd sourced 'Järvi-meriwiki' website weekly from June to September. On Itämeri.fi (MarineFinland.fi), the online service 'Alg@line' shows the algae situation (chlorophyll concentration) in real-time, using measurements from sensors installed on commercial vessels.

Monitoring marine biodiversity

Over the last two decades, knowledge about coastal marine biodiversity in Finland has increased significantly, thanks to the Finnish Inventory Programme for Underwater Marine Diversity (VELMU). The Archipelago Sea is the most extensively mapped sea area in Finland, with 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. This information is available in the open VELMU Map Service, and the programme has produced a book, *Meren aarteet* (2017, in Finnish), that provides general information on Finland's underwater marine nature (velmu.syke.fi).

The results of the programme 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 Water Framework Directive and MSFD.

Macroalgae and mussel communities, as well as invertebrates living among macroalgae, are monitored by diving in the coastal waters of the Archipelago Sea. The aim is to monitor changes in algae and organism communities, which are particularly affected by eutrophication. In addition, a new monitoring initiative has been initiated to monitor the spread of mobile and clinging alien species.

Within the programme, several inventory, monitoring and research projects have been carried out in the ASABR. Metsähallitus's Parks & Wildlife Finland unit and the ELY Centre have conducted the main part of the inventories. Additionally, the Geological Survey of Finland, LUKE and SYKE have carried out inventories in their respective fields of activities. The role of the BR has been in particular to raise awareness about marine nature and the state of the Archipelago Sea.

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VELMU data were also used for the extension of the marine Natura 2000 sites in the southern part of the Archipelago Sea and for the definition of ecologically or biologically significant marine areas (EBSAs) in the Baltic Sea under the UN CBD. VELMU data also played a key role in identifying and describing Finland's ecologically significant marine underwater areas (EMMAs) in 2019.

References:

VELMU map portal: [Vedenalaisen meriluonnon karttapalvelu](http://vedenalaisenmeriluonnonkarttapalvelu.velmu.syke.fi) (velmu.syke.fi)

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

Monitoring and research on fish and game

Research data and population estimates for the management of fishing operations are produced by the Fisheries Research Unit of LUKE, to promote the sustainable use of fish resources and improve fishing conditions. Official fishing and game statistics have been available since the 1970s, including both commercial and recreational fishing operations. The fish stock assessments are based on catch statistics and catch samples from commercial operations and are produced annually by sea area for the use of the International Council for the Exploration of the Sea (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 methods to assess fishing resources and research about the effects of eutrophication of coastal waters on fish populations and the damage by seal and cormorant populations to fish catches and fishing equipment.

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, the 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. The ARI has also monitored the characteristics of the spawning herring population in the Archipelago Sea as part of a long-term project on the reproductive biology of herring since the beginning of the 1980s. 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

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significantly. During this long-term survey, the environmental conditions of the spawning area have changed considerably, due to factors such as eutrophication and decreasing salinity of the Baltic Sea. The ARI has also focused on studies of fish reproduction areas and inventories of sea bottom anoxia.

Due to the eutrophication, numbers of cyprinids and the common bream have increased during the last few decades. Local commercial fishermen were engaged in a project on removal fishing, and while this project ended in 2015, at around the same time the John Nurminen Foundation's Local Fish project was launched in the Archipelago Sea, which paid a small environmental management fee to commercial fishermen who signed a contract between 2015 and 2019 for catching cyprinids. When the above projects were launched, little information was available on the state of the cyprinid stocks in the sea area. Data on cyprinid catches by commercial fishing operations have been collected regularly and catches by recreational operations have also been estimated through periodic fishing operations surveys. Customers' attitudes towards different fish species of lower commercial value have also been studied.

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[_Söderkultalahti,](#) [Pirkko;](#) [Rahikainen,](#) [Mika.](#) [2025.](#)
[Hylkeiden ja merimetsojen aiheuttamat saalisvahingot 2023](#) (Damage to catches caused by seals and cormorants in 2023) Luonnonvara- ja biotalouden tutkimus: 12/2025 (Luonnonvarakeskus, 2025)

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Environmental change in the Baltic Sea

The effects of eutrophication, the biggest single threat to the Baltic Sea environment, have been an important focus for research in the area. There are numerous research projects working on the effects of eutrophication on plankton, benthic invertebrate fauna, submerged aquatic vegetation and fish, for example. Studies of the effects of climate change have increased during recent decades. There have been many important studies on birds and fish in the Archipelago Sea, for example.

UTU has access to several time series data sets spanning more than 50 years, which help researchers to understand changes in the ocean.

At ÅAU, research about the effects of climate change on the ecological balance of the Archipelago Sea has been conducted during the last decade. For example, the capacity of eelgrass as an ecosystem engineer to stabilise sediments and reduce erosion, and whether marine heatwaves alter the stabilising capacity of eelgrass. As part of this research, eelgrass and sandy bottom communities will first be exposed to a marine heatwave, after which they

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will be exposed to simulated sea waves of the same strength as in normal storm conditions in the Archipelago Sea.

Another project studied the effects of marine heatwaves on a number of typical communities in the Archipelago Sea and how the invasive species the mud crab can restructure communities that have either experienced or not experienced a marine heatwave during the summer season. The aim is to build a picture of what future communities in the Archipelago Sea will look like.

The BaltVib project, in which ÅAU is a partner, aims to both map the state of *Vibrio* bacteria and what influences the occurrence of *Vibrio* bacteria, and identify possible nature-based solutions that inhibit their occurrence. Warmer water temperatures in the Baltic Sea in recent years have led to an increase in *Vibrio* bacteria, microbes that occur naturally in temperate marine environments. Many *Vibrio* species are harmful to humans, which is why there have been increasing reports of skin infections and even deaths caused by *Vibrio* bacteria from various locations along the Baltic Sea coast. Climate change is expected to accelerate this worrying trend, which is a threat to both health and tourism. However, these predictions do not take into account the fact that natural factors, known as ‘ecosystem engineers’, have been shown to limit the presence of *Vibrio* bacteria. It has recently been discovered that in some communities where these ‘ecosystem engineers’ are present, *Vibrio* species have declined in number. It has been noted that bladderwrack, eelgrass and mussel communities can all have an inhibitory effect on *Vibrio* bacteria.

LUKE and the ELY Centre have both been involved with many research/development projects on how to reduce the inflow of nutrients from land, mainly agriculture, by methods such as wetlands or other nutrient traps or fishing as a nutrient remover. Gypsum treatment of fields has proven to be a promising method for agricultural water protection.

In relation to the MSFD, litter is monitored in the Archipelago Sea area by collecting macro-sized litter (over 2.5 cm in size) from six monitoring beaches, three of which are in the inner archipelago and three in the outer archipelago. The beaches vary from natural to urban. Since 2015, the monitoring done by the NGO Keep the Archipelago Tidy has been funded by the Finnish Ministry of the Environment, which reports it to the relevant EU database and funding body.

References:

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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 also 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 on Jurmo Island in the BR.

An exceptionally long-term monitoring site for archipelago birds is situated in the vicinity of the BR, on the island of Aasla, Naantali. The archipelago bird census of Dr Lennart Saari at UTU covers 40 years (1975–2015). This 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 1990s. Of singular species, special attention has been paid to the white-tailed sea eagle, which has been monitored by WWF Finland for more than 40 years.

The eider, an iconic species of the Archipelago Sea, has also traditionally played an important role in providing down, eggs and meat. The ten-thousand-strong eider population in the Archipelago Sea and the Åland Archipelago has collapsed, with only a small fraction remaining today. The archipelagos, with their open nesting areas on bare islets, are rapidly becoming deserted in spring. Nesting in denser vegetation on islands closer to the mainland and on the large islands is slightly more successful. At the same time, the sex ratio has become skewed. Only a third of all eiders nowadays are females. A lot of research and monitoring has been done to find an explanation for the decline.

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Observations by volunteers: [Startsida](#) | [Tiira v2](#)

Archipelago flora

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Traditional landscapes

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

References:

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Sea grass research

Studies on sea grass communities, e.g. the endangered eelgrass *Zostera marina*, at ÅAU form an important research area in the Archipelago Sea. Seagrass meadows are facing structural degradation worldwide, losing both area and biodiversity. Habitat restoration could reverse this degradation, but so far, the success rate of seagrass restoration has been low. Many research projects are focused on restoration.

References:

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Pajusalu L, Boström C, Gagnon K, Kaljurand K, Kotta J, Püss T, Martin (2022) The restoration of eelgrass (*Zostera marina*) in Estonian coastal waters, Baltic Sea Proceedings of the Estonian Academy of Sciences. [proc-1-2023-41-54_20230216151259.pdf](https://doi.org/10.3176/proc-1-2023-41-54_20230216151259.pdf).

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Research and monitoring on invasive species

The distribution and population demography of the northernmost known population of the North American white-fingered mud crab, *Rhithropanopeus harrisii*, are documented in southwest Finland in the Baltic Sea. This species was first reported in Finland in 2009 in the archipelago close to Turku. *R. harrisii* has established successful populations that are able to overwinter under ice and it is expected to expand its range along the coast of the northern Baltic Sea. The impact of this species on food web dynamics, both as a predator and prey item, has been studied.

The eradication effects of the alien American mink on birds, small mammals and amphibians has been studied by researchers from UTU.

The BR has taken part in raising awareness about harmful invasive plants together with the regional ELY Centre. A special focus has been on species like giant hogweed (*Heracleum*

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mantegazzianum), rugosa rose (*Rosa rugosa*) and Himalayan balsam (*Impatiens glandulifera*). Metsähallitus is working continuously to eradicate invasive plants in the national park and other protected areas.

Information about invasive species is collected in the national Invasive Species Portal, run by several national authorities and NGOs.

[Invasive Alien Species – Invasive Alien Species Portal](#)

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Integrated management

There are many agreements and pieces of legislations steering the management of European coastal seas, for example the Baltic Sea Action Plan and the MSFD. These initiatives emphasise actions and the need to integrate ecological and socio-economic systems. There are still methodological challenges, for example in how to detect and evaluate human impacts, and how to achieve integrated planning.

The interdisciplinary approach applied by The Sea at ÅAU integrates ecological and social scientific knowledge to support integrated management (Ringbom et al. 2023), for example.

UTU has been involved from the beginning in ICZM (Integrated Coastal Zone Management) since 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

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Ecosystem services (research)

At both UTU and ÅAU, there is ongoing research into ecosystem services in the BR. The aims of the research projects (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 into environmental management could improve conservation. The new tools will help ecosystem services and biodiversity be taken into consideration better for the management of the BR area.

In the PROTECT BALTIC project, the focus is on developing a methodology to identify, map, quantify and value ecosystem services in the Baltic Sea. The interdisciplinary project studies species, habitats, and human activities to support marine conservation and optimise the marine protected area (MPA) network. This includes measures such as the assessment of ecosystem services provided by eelgrass (*Zostera marina*), blue mussels (*Mytilus edulis/trossulus*) and bladderwrack (*Fucus vesiculosus*) in the Archipelago Sea and Åland Island areas.

Cultural ecosystem services have been studied in a project coordinated by UTU’s Department of Geography and Geology.

In the EU Horizon project MARBEFES, the diversity of ecosystem service potential in the Archipelago Sea area is assessed based on the species-to-service links identified in a review by Jernberg et al. (2024).

References:

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Viirret et al. 2015. Viirret et al. Ecosystem Services at the Archipelago Sea Biosphere Reserve in Finland: A Visitor Perspective, *Sustainability* 2019, 11, 421.

Management effectiveness

A comprehensive international assessment of the management effectiveness of Finland's protected areas was commissioned by Metsähallitus's Parks & Wildlife Finland unit and carried out by an independent expert group in 2023. The assessment was based on a framework developed by the IUCN World Commission on Protected Areas (WCPA).

Coordinated harmonisation of habitat classifications and monitoring across the Nordic countries could increase regional-scale coordination of the management of coastal marshes and facilitate comparative studies.

A project at UTU aims to study the social and ecological complex feedbacks and relations linked to tourism in the ASABR to provide holistic and interdisciplinary knowledge for Archipelago Sea management.

References:

[Management Effectiveness Evaluation of Finland's Protected Areas 2023 - julkaisut.metsa.fi](https://julkaisut.metsa.fi/Management-Effectiveness-Evaluation-of-Finland's-Protected-Areas-2023)

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Multidisciplinary research

The interdisciplinary approach applied by The Sea profiling area at ÅAU integrates ecological and social scientific knowledge and develops methods for knowledge production across

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disciplines and different types of knowledge (see Jetoo et al. 2023). The Sea is particularly focused on combining research on ecology, industrial management, political science and law.

Social, economic and aquaculture production research linked with fishing operations and game husbandry is carried out by LUKE.

Studies on Ixodes ticks and tick-borne diseases, which are a growing problem in the Archipelago Sea area, are also being carried out at the ARI.

References:

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

Monitoring of nature tourism and economic benefits

Visitor numbers are continuously monitored in the Archipelago National Park and visitor surveys are carried out at regular intervals, with the latest ones published in 2019. The economic benefits of the national park on the local society are measured and published annually.

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Assessment of threatened species

The second assessment of Finland's habitats was carried out between 2016 and 2018 by broad-based expert groups involving more than 120 experts in ecology, hydrobiology, forestry, geology, geography and other fields from research institutes, universities and the government. The project was coordinated by SYKE and funded by the Ministry of the Environment.

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Also published as a web-portal.

Etusivu - Luontotyyppien uhanalaisuus

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.

Cultural landscapes like wooded meadows, pastures, coastal meadows and heaths, where cattle have grazed for centuries, are of high importance for both the biodiversity and cultural heritage in the BR. In the Archipelago National Park at the core of the BR, the management of the semi-natural grasslands is of high priority. The preservation of the traditional landscapes and their biodiversity requires management and care. The species-rich meadows, dry meadows and heaths of the archipelago are managed by animals grazing on them. As traditional animal husbandry in the archipelago declined in the 1950s, the traditional landscapes were threatened by the overgrowth of shrubs and trees and loss of biodiversity.

Today, the management of traditional landscapes in the national park is carried out by various operators in cooperation and coordinated by the Metsähallitus's Parks & Wildlife Finland unit, which is in charge of the management of the national park and other protected areas. For the preservation of the biodiversity on the semi-natural grassland, park rangers and conservation biologists of the Metsähallitus's Parks & Wildlife Finland unit work hand in hand with livestock owners, educational institutions, NGOs and volunteers

After the national park was founded and when the management planning of the overgrown species-rich cultural habitats was taken over by Metsähallitus, interviews were carried out with people who 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 ASABR have developed. The staff of Metsähallitus have also been trained in landscape management.

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.

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We share knowledge with the local community through our annual seminars, educational activities, and exhibitions at Archipelago Centre Korpoström, as well as through our electronic newsletter. The local communities are supported in carrying out the Habitability analysis for their islands or island areas. The assessments are not intended for a specific purpose, but the results have strong potential to support local, regional, and national policymakers in decision-making, as well as civil servants in implementing measures for a sustainable future in the archipelago. The results will also be taken into account in the strategies and plans for the BR.

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.

Below is a list of the main education institutions and programmes relating to biosphere activities:

Education provided by the BR

A central task of the BR 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. The office’s 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 activities provided by the Biosphere Academy, such as the Sustainability Path for primary schools and the Biosphere Goes to School programme for seventh grade pupils, are good examples of such activities. Environmental education in early childhood education and care involves programmes such as the Super Heroes of the Archipelago and Pike and his friends, with different themes for the children to work on, for example: recycling, clean water issues, archipelago culture (see 2.4.9).

In 2016 the Kids’ Lab was established at Archipelago Centre Korpoström in cooperation between the BR Office, ÅAU, the Metsähallitus’s Parks & Wildlife Finland unit and the Archipelago Centre. The concept has slowly grown from being a pop-up activity to a well-established site for educational activities for children. Through the Kids’ Lab, the BR offers experience-based courses about the marine environment. During the summer, the Kids’ Lab is open and free of charge for everyone. In spring and autumn, it is visited by many school groups from both nearby and more distant areas.

Through various 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

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arranged by the BR Office, often in cooperation with the Archipelago Institute at ÅAU. Every year between two and four seminars are arranged in the BR, with researchers from the universities attending to popularise scientific findings and activate people to discuss current subjects.

To become a Biosphere Ambassador, interested individuals must complete a training course organised by the BR Office in collaboration with Archipelago Institute of ÅAU and UTU. After that, further education is offered in the form of lectures and excursions open to all participants in the Biosphere Ambassador Programme.

Education provided by other operators

Within or in direct connection with the BR, there are 13 primary schools, eight secondary schools and three upper secondary schools. In Finland, the **Eco-Schools** programme is run under the name *Vihreä lippu* (transl. 'Green Flag') by the Foundation of Environmental Education FEE Suomi. The programme is available for Finnish preschools, schools and other educational institutions. Six schools and/or preschools in the BR municipalities, 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. **The Åboland Nature School** is run by the national association for nature protection *Natur och miljö*. They offer a big variety of programmes for local schools. The municipalities purchase their services and they have agreements with the municipalities to annually arrange special programmes for specific school classes: preschool and grades 5–6. The nature school, as a Biosphere Partner, developed a new programme theme in spring 2024 called 'It's about life'. The theme was developed in collaboration between the Åboland Nature School and the ASABR, and focused on the BR. They organised seven nature school days based on the new theme.

The vocational training institutes in the area are **Livia College** and **Axxell**. Livia College specialises in education and training for land-based fishing operations, agriculture, forestry, nature and the environment, as well as the social and welfare industries. Axxell offers rural studies in Kimitoön and tourism studies in Pargas.

The BR has no visitor centre of its own, but works closely with **Archipelago Centre Korpoström**. The Archipelago Centre is a venue where science, art and culture intertwine. The BR is actively involved in the activities at the centre, as are many of the collaborators of the BR. The centre is therefore a place where many cooperation projects are realised. Activities at the centre 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.

The Children's University, organised by UTU, inspires children to engage in science and research. The university organises science lectures and science workshops in spring and

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science camps in the summer. At the summer camps, which are held at the ARI in the BR, children have the opportunity to be scientists and do hands-on experiments.

Higher education

Both ÅAU and UTU offer bachelor's, master's and doctoral programmes in biology and environmental studies. Sustainability studies at both universities are offered as multidisciplinary minor subjects. Additionally, TUAS offers both bachelor's and master's degree programmes in engineering, with opportunities to specialise in environmental technology.

ÅAU's subject 'Environmental and Marine Biology' and the associated research is tightly linked to the BR through ÅAU's membership of the BR Steering Committee and through the location of ÅAU's Korpoström field station in the BR. There is also an interesting minor subject called 'The Sea – Multiple Perspectives' at ÅAU. This is an interdisciplinary study module. ([Havet - Ett flertal perspektiv | Studiehandboken 2024-2027](#)). Some of the ÅAU courses are arranged by the Open University at ÅAU and are open to the public. ÅAU is also the Finnish National Centre of the Baltic University Programme (BUP). 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. This resource centre for nature, environment and technology is situated in Turku and the BR has been actively collaborating with the institute. The Open University of ÅAU offers several programmes in environmental and sustainability studies.

Also a member of the BR Steering Committee, UTU offers the programmes 'Ecology and Evolutionary biology', 'Master of Science in Geography' and 'Quaternary Geology', which arrange field courses at the ARI, located in the BR. Moreover, on an annual basis, UTU and ÅAU jointly arrange the field course 'Oceanography methods' with close collaboration with Finnish Marine Research Infrastructure (FINMARI). Furthermore, Finland Futures Research Centre offers a two-year 'Master's Degree Programme in Futures Studies' together with Turku School of Economics at UTU.

TUAS offers both bachelor's and master's degree programmes in engineering, with opportunities to specialise in environmental technology. In addition, continuing education is available in areas such as water protection and sustainable development. With a strong focus on environmental issues related to the Baltic Sea, there are many interesting opportunities for students to participate in various water conservation projects

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

(Describe the methods, indicators).

The BR Office works according to a work plan, which is evaluated after each year in the annual report approved by the Steering Committee. In the annual report, the outcome of the plan is evaluated. The quantitative indicators show, for example, the numbers of events, participants, children and young people, and initiated projects, alongside visibility on social media or in local media, scientific publications, etc. But the role of the BR Office in arranging events or

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starting up projects can vary a lot, which makes the qualitative indicators more relevant. The annual report includes qualitative reports from all the partners.

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

The BR Office has many tools for communication. Internal communication is handled mainly by email and weekly meetings with the BR Office team consisting of project leaders, monthly meetings with a broader group of cooperation partners, Steering Committee meetings about four times/year, Biosphere Partner online morning coffees twice a year and Biosphere Ambassador get-togethers four times/year. The BR coordinator also attends the internal meetings of the Department for Livelihood in the Town of Pargas and sometimes the internal meetings of the Development Department in the Municipality of Kimitoön. Each year, the ELY Centre organises a meeting on the activities of the BR for everyone in the organisation that it might concern. At the same time, the ELY Centre reviews its own goals related to the BR's activities. The BR Office is also represented in a few reference groups and boards, which can be used for internal communication, for example, the programme committee for Archipelago Centre Korpoström, the Expert Council of the Archipelago Institute at ÅAU, and the boards of the ÅSS and FÖSS.

The BR's external communication channels are flags and information boards, which are now used at 14 sites in the area; information in the local tourist brochures; a BR brochure; social media like Facebook and Instagram; a website and a digital newsletter twice a year. The Kids' Lab has its own Instagram and TikTok channels. The BR has published all videos produced for the BR on a YouTube channel. The BR has had its own logo since 2012, which is used to mark out the activities of the BR. Local media channels like newspapers, local journals and radio channels are used to reach a broader public. Seminars are arranged regularly. A lot of important communication happens through Biosphere Partners and Ambassadors, through either their channels of communication or discussions.

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

www.biosfar.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 website.

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

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Facebook: ArchipealgoBiosphere, Instagram: archipelagoseabiosphere and the Kids' Lab of the BR has Instagram (knattelabbet) and TikTok (knattelabbet) accounts

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

Internal communication happens by email, WhatsApp 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.

EuroMAB The BR Office participates actively in this network to share experiences and foster collaboration. We have taken part with a full delegation in every EuroMAB conference held, and for the past three conferences, we have also had a youth delegate. At these conferences, we have frequently contributed by presenting good practices from the ASABR.

We also gave a presentation on Habitability analyses at the conference on 'What is the potential for Citizen Science in European UNESCO Biosphere Reserves?' in 2025 in Southeast Rügen Biosphere Reserve in Germany.

NordMAB The ASABR is an active member of NordMAB and is involved in its Steering Committee. Several NordMAB conferences have been arranged and the coordinator has participated in most of them. NordMAB has also arranged side events or workshops at the EuroMAB conferences. The ASABR has been part of the steering group for two projects – MABLAB and MABLAB 2 – which aim to clarify the connection between BRs and the global biodiversity agenda, as well as supporting the establishment of new BRs in the Nordic countries. The ASABR has also been supporting two potential BRs in their planning process: Päijänne Lake District in Finland and Nämndö Archipelago in Sweden.

Biosphere for Baltic We have played a central role in establishing the *Biosphere for Baltic* network, which was launched in 2017 and the ASABR hosted the second meeting of the network in 2018. We have participated in the project planning of several common projects. (See 6.6.1) The coordinator, several project leaders and even Biosphere Ambassadors have actively participated in conferences and shared good practices with other BRs.

World Network of Island and Coastal Biosphere Reserves Furthermore, the BR is active in the World Network of Island and Coastal Biosphere Reserves and has participated in a few conferences. We have contributed by presenting good practices at conferences, such as in 2023 in Australia and in the joint newsletter. We will continue contributing to the network and strengthening the relationships with other island BRs to better share good practices with each other and develop ways to actively involve the local community in international cooperation efforts, in order to foster a shared sense of belonging to a broader context and a common pursuit of a sustainable future.

Other BRs in the World Network of Biosphere Reserves Together with Kanazawa University in connection with Hakusan Biosphere Reserve in Japan, we have planned a

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collaboration on student exchange and carried out an initial pilot with eight students from Japan. We will continue developing the cooperation with student exchanges with BRs in Japan and potentially in other countries. We have participated as invited speakers at local events or conferences in BRs in Japan, Bulgaria, Spain and Sweden.

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

FINMAB Cooperation has been carried out with the Biosphere Reserve of North Karelia, in Finland. We have arranged visits for BR Partners to each other. For five years, the BRs in Finland have jointly arranged an annual virtual FINMAB forum on the International Day for Biosphere Reserves: 3 November. The focus has been on cooperation and sharing good practices between the BRs. Biosphere Partners have been centrally involved. Both BRs have supported the BR initiative in the Lake Päijänne area. Recently, the BRs have decided to jointly develop a youth programme for Finland's BRs. The working group includes young people from both BRs.

Biosphere for Baltic We have played a central role in establishing the *Biosphere for Baltic* network, which was launched in 2017 and the ASABR hosted the second meeting of the network in 2018. In 2018, representatives of eight BRs in six countries around the Baltic Sea met in the ASABR. The meeting was the second in a Biosphere for Baltic project, which highlighted the role of BRs in the work to achieve the UN's SDGs of Agenda 2030. The project focused on goal 14 on oceans and marine resources. Since then, we have maintained regular contact through virtual morning coffee meetings, as well as visits and gatherings at various BRs within the network.

In different groupings, we have taken part in events held in the West Estonian Archipelago, Słowiński in Poland, Southeast Rügen in Germany, and Kristianstad and the Blekinge Archipelago in Sweden. The Biosphere for Baltic network has fostered cooperation and common projects with a focus on ocean literacy, education and sustainable tourism, such as Supported by Nature (2024–26), Future Generations (2024–25), BFB-COLAB (Biosphere for Baltic collaboration), Ocean Literacy & Local Engagement for a Sustainable Baltic Sea (2022–24) and BFB-TOOLS and Biosphere for Baltic – Tourism for Ocean Literacy and Sustainability (2019–20).

At the end of 2023, a new project named **Supported by Nature** was started (2023–26). The aim of the project is to increase the understanding of nature-based solutions (NBSs) and how they contribute to improved environmental conditions for the Baltic Sea with the long-term goal that a better knowledge foundation will lead to more frequent and adequate use of NBSs in planning processes, as well as land- and seascape management. Nine BRs along the coast of the Baltic Sea are involved.

During the project, a number of NBS Learning Sites will be developed particularly focused on NBSs connected to multifunctional wetlands, coastal water habitats, and watercourse

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restoration. In Finland, TUAS is in charge of the activities, which are conducted in the ASABR. The NBSs are multifunctional and pike wetlands. The project will pilot 1) methods of establishing NBS Learning Sites through collaborative multi-stakeholder approaches (learning by doing), and 2) methods to increase understanding of NBSs through activities at Learning Sites (learning by experiencing).

NordMAB The ASABR has been part of the steering group for two projects – MABLAB and MABLAB 2 – which aim to clarify the connection between BRs and the global biodiversity agenda, as well as supporting the establishment of new BRs in the Nordic countries. The projects strongly highlight the potential for positioning BRs as pilot areas for the Kunming-Montreal Global Biodiversity Framework. In the follow-up project, the focus shifted to sharing best practices from Nordic BRs. The projects were funded by the Nordic Council of Ministers' Nordic Working Group for Biological Diversity.

These publications present findings from the projects and are a valuable contribution to the UNESCO MAB Programme:

[UNESCO Biosphere Reserves – A Path to Local Holistic Sustainability](#). A guide to establishing UNESCO BRs in the Nordic Countries

[Local actions for biodiversity – From good practice to next practice in the Nordic Biosphere Reserves: How Nordic UNESCO Biosphere Reserves can support the implementation of the Global Biodiversity Framework](#)

[Sample collection - Local Actions for Biodiversity: Inspiring examples from the Nordic UNESCO Biosphere Reserves](#)

[Local actions for the new Global Biodiversity Framework](#) How do we develop co-existence with nature through the UNESCO Biosphere Reserves?

EuroMAB The ASABR has been actively involved in all network meetings, with several team members including youth representatives representing the ASABR at Haapsalu, Estonia (2015); Sarlat-la-Canéda, France (2017); Dublin, Ireland (2019); Nockberge, Austria, (2021); and Elbe River Landscape, Germany (2023). At the conferences we have shared experiences from our work with, for example, artist cooperation and the Biosphere Academy.

World Network of Island and Coastal Biosphere Reserves In the exhibition about the ASABR that was created for the celebrations of the 30th Anniversary at Archipelago Centre Korpoström, with the help of our colleagues from nine BRs in the World Network of Island and Coastal Biosphere Reserves, we carried out a thematic focus on island BRs. In the same

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section of the exhibition the whole World Network of Biosphere Reserves was presented on a large globe.

The BR hosted a group of students from Kanasawa University in connection with Hakusan BR in Japan in a pilot project in 2023. Further cooperation is being planned.

Additionally, the ASABR was represented and shared good practices at the network meeting in 2023 on K'gari island in Great Sandy Biosphere Reserve, Australia.

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 BR, and especially important in Finland as there are only two BRs, so the national network is small. The local actors also benefit from being part of a larger network, the network brings support and motivation. At present, we are involved in two international projects, one of which gives us the opportunity to share knowledge and learn from each other, and the other to engage young people in the BR. We expect that international cooperation will also enhance national visibility. We hope for increased international cooperation in multidisciplinary research on BRs. We also see great value in being able to involve young people, entrepreneurs, and inhabitants in international contexts. This strengthens the sense of belonging and increases knowledge of, and pride in, one's own area. At the same time, exchanges with people from other BRs provide new insights and can lead to new opportunities or a deeper understanding of the biosphere concept.

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 interesting collaboration partners and to be included in projects that may also involve local target groups. We want to use the World Network of Biosphere Reserves to be inspired and inspire others by sharing good practices. We continue to be actively involved in developing the EuroMAB, NordMAB, Biosphere for Baltic, 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 plays a particularly important and broad role when it comes to logistical functions – by supporting research conducted in and about the reserve and disseminating research results, promoting and implementing education on the archipelago's nature, culture, and sustainability themes, as well as initiating, planning, and implementing development projects for a sustainable future. Factors that have influenced the success are discussed below.

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Improved visibility The BR Office has put a lot of effort into enhancing the visibility of the BR. Communication has continuously been broadened and improved. The electronic newsletter with news from many partners, the website and social media are the main channels of information. The BR logo is well known and has been used to highlight the diversity of work being done. The BR flag and information boards at 12 sites in the BR are improving visibility. We have included more stakeholders and target groups and improved our communication within these networks.

Involvement of people and strengthening the sense of belonging in the UNESCO BR The Partners and Ambassador programmes have resulted in a significant increase in awareness of the BR. Both programmes contribute to a growing sense of inclusion among people and help raise awareness of the BR as well as knowledge about key themes related to the balance between people and nature. This, in turn, leads to new initiatives and collaborative models to help achieve the goals of the BR.

Cooperation with schools and early childhood education and care the Biosphere Academy plays a very important role for introducing the concept of the BR to local people and for enhancing sustainable development. Young people are growing up with their own relationship with the ASABR. Since 2008, we have consistently arranged activities with the seventh grade in all the schools in the BR (Biosphere in the School) and since 2013 with early childhood education and care in Pargas and now since 2024 in Kimitoön. In 2016, the Kids' Lab was established at Archipelago Centre Korpoström in cooperation between the BR Office, ÅAU, the Metsähallitus's Parks & Wildlife Finland unit and the Archipelago Centre. The concept has slowly grown from being a pop-up activity to a well-established site for educational activities for children. Today, the Kids' Lab is visited by many schools and early childhood education and care units. With the long-term approach of the Biosphere Academy, all children in the region grow up with a relationship with the BR (see 2.4.9).

A neutral platform for sharing knowledge The logistical function in terms of supporting research has mainly been to **popularise the research and provide a forum for communication** between researchers and local stakeholders. Two concepts for annual meetings concerning communication and sharing knowledge have been established in connection with the BR: the Archipelago Sea Winter Meeting (since 2010) and the Forum for Archipelago Research twice a year (since 2008). Additionally, the magazine *Tidskriften Skärgård* also works as a forum for important issues concerning natural and cultural heritage in archipelagos. The BR has an important role as a neutral arena for sharing knowledge, both traditional and scientific.

Research in and about the BR The BR is attracting an increasing number of researchers both nationally and internationally, and more multidisciplinary research projects linked to the BR have been launched. The BR provides the knowledge-sharing platforms and local actor networks that researchers are looking for. It also offers interesting multidisciplinary research themes and phenomena.

Shared responsibility The governance of the BR is based on cooperation on many levels. All partners of the BR are participating in the realisation of the BR activities. The municipalities are centrally involved in the management through the cooperation agreement. The ELY Centre and the local municipalities have together been taking care of the coordination of the ASABR since 2004. Since then, the three parties have been establishing 1–2-year-long cooperation agreements, where areas of responsibility have been agreed upon and the basic financing has been determined. Partner-specific agreements are made with the Town of Pargas, the Municipality of Kimitoön, Metsähallitus's Parks & Wildlife Finland unit, ÅAU, UTU, and the Regional Council of Southwest Finland. The Biosphere Partner and Ambassador programmes are even more open to not only shared responsibility, but also the shared benefits of the UNESCO BR.

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 organisations responsible for them. Today, there are also more multidisciplinary research projects that examine the relationship between humans and nature, which benefits the activities of the BR. This also makes the role of the BR as a meeting place for researchers and the local community increasingly important. It is essential that researchers recognise the need to approach research from the perspective of the local community. In addition, there is a growing sense of fatigue when it comes to participating in various studies and responding to surveys, as people often do not know what the results will be used for. This highlights the need for more active communication between researchers and the local community – and here the BR plays a key role.

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 for the BR, and thus also for the financing of the coordination, is given to the regional ELY Centre by the state and the Ministry of the Environment.

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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 one or other of the municipalities. Right now, we have a team of six project employees at four different organisations: the Town of Pargas, ÅAU, TUAS and Archipelago Centre Korpoström and four summer workers at the Kids' Lab. All share office space at Archipelago Centre Korpoström. Both municipalities 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.

All partners and other organisations can plan and administrate projects for the BR. The project staff are important resources for the BR Office.

The BR Office is located in Archipelago Centre Korpoström. The centre functions as a visitor centre for the BR and hosts science and art exhibitions, seminars, lecture series and theme days. The Kids' Lab is also located in the centre. In the centre there is also a **research station run by ÅAU**, with focus on experimental marine ecology. Själö island is home to the other research station of the BR, **ARI at UTU**, with a particular emphasis on understanding the unique dynamics of the Archipelago Sea.

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 the Environment is responsible for the two BRs in Finland and regionally the responsibility lies with the ELY Centres. The Ministry of Education and Culture is responsible for the national coordinator group for international UNESCO scientific programmes. The basic financing is handled by the Ministry of Economic Affairs and Employment, which sets the budget of the ELY Centres. The ELY Centre and the local municipalities have together been taking care of the coordination of the ASABR since 2004. Since then, the three parties have been establishing 1–2-year-long cooperation agreements, where areas of responsibility have been agreed upon and the basic financing has been determined. A Steering Committee has been designated, and they are responsible for planning the activities and the strategic guidelines for the biosphere work. The committee has an operational role. The representatives on the committee represent the ELY Centre (chair), the municipalities of Pargas and Kimitoön with politically elected members and clerks, Metsähallitus's Parks & Wildlife Finland unit, ÅAU, UTU, and the Regional Council of Southwest Finland, along with a youth delegate.

The municipalities are centrally involved in the management through the cooperation agreement. In both municipalities, BR reserve matters are handled by departments and staff with tasks related to development, industry and communications. The BR contact persons at the municipalities are from these departments and they represent the municipalities on the Steering Committee. The municipalities run development projects and participate in organising various events, for example the Archipelago Sea Winter Meeting.

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The governance of the BR is based on cooperation on many levels. All partners of the BR are participating in the realisation of the BR activities. In 2018, the previous letter of intent for cooperation in the BR (2012–2017) was replaced with partner-specific agreements. Agreements were made with the Town of Pargas, the Municipality of Kimitoön, Metsähallitus's Parks & Wildlife Finland unit, ÅAU, UTU, and the Regional Council of Southwest Finland. These agreements were renewed for the period 2023–2027. Universities manage research, monitoring and education and, in addition, they have a central role in terms of popularising science. Metsähallitus manages the Archipelago National Park, as well as other protected areas located in the BR's core area. Moreover, large parts of the BR are located on privately owned land. Metsähallitus also promotes sustainable development in the area, especially in connection with recreation and tourism. The Regional Council of Southwest Finland is responsible for regional-level planning, such as the regional land use plan and the maritime spatial plan. It also manages Valonia, an organisation that supports and advises municipalities on reducing their carbon footprint and taking responsibility for the environment. Other Biosphere Partners such as the Åboland Nature School, the ship *Eugenia* or Naawa Nature Camp all have their specific role and goals described in their Biosphere Partner agreements (See 7.5.1).

Other operators in archipelago development can also manage activities for the BR, such as local associations, national research institutes or universities. Entrepreneurs and residents have an important role in highlighting the work of the BR and realising the goals of the BR through their own activities and everyday actions.

The BR concept and management played an important role in the founding of the ÅSS. Close cooperation has been developed between the BR Office and the ÅSS – today, some of the significant operations of the BR are handled by the foundation. The foundation also manages the Biosphere Fund.

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, but rather as an important resource for local development, since it was initially a bridge-building organisation, active in consulting and initiating projects. When the BR was established, people were worried about the possible restrictions and therefore the core centres 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 centres were included. The change in attitude can be seen as a result

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of the good work done by the BR, hence the MAB concept built on cooperation and voluntary acts, now better understood by the decision-makers.

The only likely threats in terms of conflicts directly concerning the BR are misunderstandings of the role and functions of the reserve. To avoid these, the BR's educational programme, which reaches all children in the area, the Biosphere Ambassadors and Biosphere Partners have invaluable roles to play in learning and disseminating knowledge about the BR.

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 inhabitant numbers have decreased over the last 100 years, the number of part-time residents has increased enormously. According to the Habitability analyses (not yet published), the human presence, including all the people spending time in the BR, is about the same as 100 years ago. 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 in construction along shorelines. These changes have affected both diversity and recreation. The prerequisites 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 taking place in particular in the outer archipelago (the buffer zone of the BR), is the conversion of old archipelago homesteads into leisure homes.

Through the ÅSS, 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, being sold for part-time, recreational use. The foundation has bought or received as a donation island properties that are rented to young families living in the archipelago all year around. The profiles of the three properties are very different from each other, but all of them strongly support the vitality of the outer archipelago. On the island of Brännskär, for example, the population has grown from zero to seven people, and the tenants are focused on entrepreneurship in boat building, woodworking and tourism in the archipelago. The island now has one of the most attractive small guest harbours, with a strong image of sustainability and regenerativity. This archipelago property has served as the first example in the area for a new concept by the ÅSS and the BR and has inspired more similar projects. Today, the foundation has projects at four properties, of which three are rented to families who moved permanently to the archipelago and the fourth is Archipelago Centre Korpoström, which influences immigration by, among other things, offering jobs.

The preservation of biodiversity in the cultural landscapes was of crucial significance when both the national park and the BR were established. The BR has supplemented the operations

of the national park by promoting education and bridge building and arranging training courses in cultural landscape management with a focus also on the national park and privately owned land in the BR. The management of cultural landscapes runs through all the zones of the BR and connects them through valuable cooperation between land owners, livestock farmers, authorities, NGOs and researchers.

Potential conflicts concerning natural resources may arise due to changes in the environment caused by the eutrophication of the sea, which in turn affects fish stocks. Through its educational activities and seminars, the BR has invested heavily in increasing understanding of the complex challenges facing the marine environment, strengthening people's connection to the sea, and sharing knowledge about innovative, sustainable solutions – for example, the use of underutilised fish species that benefit from eutrophication.

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 on the mainland. Because of the differences, the law defines some rights in the so-called Archipelago Act, to ensure equal treatment of inhabitants living in the archipelago and on the mainland. Arrangements for coordinating issues such as post and road connections, including ferries, etc. are different in the archipelago region, consisting of more than 10,000 islands, with some of the inhabited ones lacking 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 municipalities' actions or responsibilities in the archipelago, the matter can be passed on to the Archipelago Board of Pargas or Kimitoön. The boards have a consultative role in giving statements on proposals concerning the archipelago.

There is also the National Island Committee, with politically elected delegates who can, at a national level, prepare actions to promote archipelago matters and monitor developments. The BR is represented in the secretariat of the National Island Committee by the coordinator, representatives of the BR municipalities, the Regional Council and the Archipelago Institute of ÅAU.

In some situations, issues that create conflicts can be addressed in the context of the BR's various forums, such as the winter meeting. The BR has managed to maintain a role as a neutral platform where common concerns can be discussed from different perspectives. The BR also has an important role in preventing conflicts by minimising misunderstandings about the special features of the archipelago, mainly through participation in different local, regional and national networks and working groups, but also by maintaining its own networks of cooperation. Through the Habitability analyses, carried out by the people in the archipelago,

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real statistics about the characteristics of the archipelago, such as the perceived distances instead of distance measured in kilometres, human presence instead of registered inhabitants, are estimated.

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).

On the **Steering Committee of the BR**, local people are represented through two politically elected delegates (+ two substitute members) from the local communities. From 2024, we also have a youth delegate on the committee. The committee is responsible for the strategy and action plan of the BR. At seminars and through other educational activities, a natural balance between traditional and scientific knowledge is always sought. Project planning always involves local people from the occupational group of concern for the specific project.

Other important reference groups:

The Archipelago Institute at ÅAU plays a central role in the popularisation of research in the BR. In cooperation, the BR Office and the Archipelago Institute organise seminars for the popularisation 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, plays an important role in 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 has representation on the Steering Committee of the BR and can participate in local development projects and act in liaison with appropriate cooperation partners.

FÖSS is a civil organisation with the goal of securing the future for islanders and improving their living conditions. FÖSS acts at local, national and European level. FÖSS has run local development projects in the BR, some of which are in direct cooperation with the BR Office.

The network of Biosphere Partners includes organisations, NGOs and companies that are on the Steering Committee or have applied and been accepted to be part of the Biosphere Partner Programme. Every partner defines their own role and own goals for a sustainable future. The partners are in several ways engaged in the work of the BR. The application

Biosphere Partners as of 2024: the Town of Pargas, the Municipality of Kimitoön, Metsähallitus, ÅAU, UTU, the Regional Council of Southwest Finland, Västeräng gård (sheep farm and tourist company), Archipelago Centre Korpoström (visitor centre and tourist company), Åboland Nature School (nature education NGO), Go Archipelago (tourist company), Storbåt Tacksamheten (traditional sailing boat tourism company), Naawa Nature Awakening (camp and nature activities, tourist company), MovingHeart and Paddling

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Academy (kayaking, wellbeing and tourism company), Archipelago Holiday ky on Sandö island (tourism company), Norrgårds bruksgård on Nötö island (animal and vegetable farm, local shop) and Eugenia (traditional ship for education and tourism, NGO with voluntary workers).

The network of Biosphere Ambassadors consists of around 60 people who have attended a training course organised by the BR Office together with ÅAU and UTU, and have graduated as Biosphere Ambassadors. They meet regularly on various themes that deepen knowledge about the Baltic Sea, sustainable business, environmental issues and other things that are important for working for a viable archipelago. The ambassadors take an active role in the regular activities of the BR, for example in our regular events, the Archipelago Sea Winter Meeting and the Forum for Archipelago Research. Whenever possible, one of the ambassadors is invited to attend our national or international network meetings.

The Biosphere Academy is an educational programme of the BR that is built on cooperative premises. There have been several working groups that have planned the programme and annual activities of the BR in schools and preschools.

Meadow meat farmers have been invited a few times to meetings about cooperation for promoting their work.

The BR Office arranges annual events where both scientific knowledge and traditional knowledge are presented to strengthen communication between researchers and the local community. Many initiatives for new activities or projects have been generated at these events.

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 inhabitants

Universities

Metsähallitus/National Park

Regional Council

Youth delegate

Network of Biosphere Partners

Regional environmental authority

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Municipalities: clerks and inhabitants

Universities

Metsähallitus/National Park

Regional Council

NGOs such as Artisan Food and Nature School

Companies

Network of Biosphere Ambassadors

People of different age and backgrounds

Archipelago Institute of ÅAU

University/researchers

Tourism association

Forest Services/National Park

ASABR

University/students

FÖSS rf, the National Association of Finnish Islands:

Representation of inhabitants from different regions of Finland.

ASABR

Winter meeting:

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

Habitability Groups:

Quite recently, the Habitability analyses have been adopted as a tool to analyse various sustainability aspects of local island communities. Many people have engaged in the process, and the results are expected to be useful for area management and for applications for funding for development projects. The analyses are carried out by the islanders themselves. Hopefully,

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the assessments will also be updated regularly. We also believe that this approach can stimulate increased resident participation in the work of the municipality.

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 working on a voluntary basis on local development. The ASABR is involved with or consults with the Pro region associations when appropriate.

Former archipelago municipalities also had their own politically elected boards in the Town of Pargas between 2013 and 2021, which in 2022 were replaced by an archipelago board representing the entire area corresponding to the BR. The board has a consultative role and gives statements on proposals concerning the issues affecting the archipelago. In Kimitoön, since 2009 there has been a politically elected board for the archipelago.

The Delegation of the Outer Archipelago, with politically elected members representing the outer archipelago islands, was an important operator in the BR. The annual action plan was reviewed by the delegation. The chairman and vice chairman of the delegation were always members of the BR Steering Committee. Today, the delegation, which was common to both Pargas and Kimitoön, has been dismantled and replaced by each municipality's own municipal body dealing with archipelago issues.

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

Local people are a permanent part of the BR Steering Committee. In projects, both in the planning process and for project management, local people are always consulted. The Habitability analyses engage people both temporarily and long-term. The Ambassador Network is also unlimited in duration, while the partners are for five years at a time.

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 individual projects are planned, the consultation of experts and the local community can be both decisive and have a consulting function. Naturally, the organisation that administrates a project has a deciding role. Additionally, all representatives of local communities, participating either through the Steering Committee or in project-based activities, have an important role in spreading information about the BR and its activities. The Biosphere Ambassadors can also be in a consultative role, but above all they are in a very central position

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in informing and communicating with local people. The Biosphere Partners who are not involved in the Steering Committee are also very important both in consultation and informing people and other stakeholders about issues concerning the BR.

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 (now the Research Council of Finland) and the Ministry of the Environment played central roles. The municipalities were involved in an early stage of the planning of the BR. The primary boundaries for the BR did not fully align with the municipalities, because of the slightly sceptical 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 and a few others that made the BR more unified. The application for an enlarged area was approved unanimously by the local politicians, which could be seen as an endorsement of the BR's activities. The municipalities and other local stakeholders were all involved from the very beginning in planning the activities.

As the latest BR strategy/management plan was established in 2023, the municipalities and many other stakeholders were closely involved in the process through several meetings and an open questionnaire. All Steering Committee members, including the representatives of 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 organisations and local associations are also involved in the implementation of the action plan of the BR through projects, workshops, seminars and educational events. The BR projects can be conducted by any Biosphere Partner or other organisations in the region.

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, since the last periodic review, there have been small additions of protected areas to the national park. Metsähallitus's Parks & Wildlife unit 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 ELY Centre for Southwest Finland is still responsible for the BR. In 2009, the eight former municipalities of Åboland were merged into two larger ones: the Town of Pargas and the Municipality of Kimitoön, and they are still involved in the management of the BR (for more on the agreement of cooperation see 7.6.3). Pargas runs the BR Office.

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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

Katja Bonnevier 2007 (maternity leave 7/2015–7/2016 and 1/2018–2019) – present

Julia Scheinin 7/2015–7/2016

AnnaMoa Westerlund Rönnberg 2018–2019

Pia Prost 2018–2020

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?).

The responsibility for the BR and thus also the financing of the coordination, is given to the regional ELY Centre by the state and the Ministry of the Environment. Today, the cooperative management structure is still based on a three-party contract – the agreement on cooperation for management of the BR, between the ELY Centre and the two municipalities: Pargas and Kimitoön. The central role of the municipalities in the coordination structure has had a positive effect on their involvement. At the same time, the agreement on cooperation gives a clear focus and relatively autonomous structure to the BR Office.

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 or other partners. Both municipalities provide the BR with technical and logistical resources. The municipalities administrate externally financed BR-related projects and sometimes they also partly finance them. The municipalities also assist with communication and marketing of the BR.

The Steering Committee gained new members: a representative of the Regional Council of Southwest Finland and a youth delegate. The Steering Committee has been kept quite small to be able to have an operational role.

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 BR Office is also in close contact with the Development Department of the other municipality. The

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municipalities have increased their representation on the Steering Committee of the BR to two persons. The new delegates are representatives from the development function of each municipality. This is a very efficient solution for the BR, as all municipal projects are planned and realised by the development functions, enabling the BR to carry out work in different sectors, e.g. the environment, education and business. The model also makes cross-sectoral cooperation easier. The model of cooperation with the coordination enables the municipalities to realise many of the activities of the BR and to take the objectives of the BR into account in their own strategies and programmes.

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 in line with the procedure. Taking into account the small resources of the BR Office, a reasonable number of actions are conducted. The structure of the management optimises 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.

The BR Office is still placed in the Town of Pargas, at the Department for Livelihood and the BR Office, along with the three administrative partners; the ELY Centre, Pargas and Kimitoön, works on the basis of a three-party contract for the administration of the BR.

The physical office moved in 2022 to Archipelago Centre Korpoström in Korpo. Since the planning phase of the Archipelago Centre, the BR has played a central role in its operations. Many of the BR's events have been held there, and since 2006, the activities of the Kids' Lab have been developed with the BR Office serving in a coordinating role.

The role of the BR in planning and implementing exhibitions – highlighting themes relevant to the archipelago through science, art, and local knowledge – has grown significantly over the years. These exhibitions have become an important part of the BR's operations, both by spreading knowledge and by illustrating what the BR represents. Today, the Archipelago Centre is a Biosphere Partner and has recently updated its objectives with an ambitious aim to become an official biosphere centre.

The BR renewed its strategy for the periods 2018–2022 and later 2023–2027, thereby adopting five-year strategic cycles. With the strategy adopted in 2018, several quantitative indicators were introduced, which are monitored annually in connection with the activity report. The strategy processes were inclusive and involved all key partners of the BR. For the most recent strategy, input and ideas were also collected from the public through a survey.

The governance of the BR is based on cooperation on many levels. In 2018, the previous letter of intent for cooperation in the BR (2012–2017) was replaced with partner-specific agreements.

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Agreements were made with the Town of Pargas, the Municipality of Kimitoön, Metsähallitus's Parks & Wildlife Finland unit, ÅAU, UTU, and the Regional Council of Southwest Finland. These agreements were renewed for the period 2023–2027.

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 for the implementation is based on consensus and is shared by the main partners of the BR. The plan is to engage the stakeholders to participate, rather than binding them. More detailed plans are featured in the annual action plans. The coordinator makes the proposal for the action plan. The action plan is then presented at a Steering Committee meeting and the committee participates in the process of finalising the plan.

An updated strategy for the BR was in place until 2017. Through an inclusive process, a new strategy was developed and finalised for 2018–22, followed by the next strategy for 2023–27.

In the current strategy, the vision states that in the ASABR, the inhabitants live and work in a sustainable archipelago environment with a rich natural environment, a healthy sea and a vibrant society. The area actively co-operates with other areas both nationally and internationally. Our mission is defined as follows: To achieve sustainable development, we work on behalf of UNESCO to find local solutions to global challenges for sustainable development, through education, research and development projects, as well as through awareness raising and cooperation and voluntary efforts. The ASABR, in collaboration with the global network of BRs, will serve as a model area for sustainable solutions. The partner organisations are committed to cooperating 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. In order to create a framework for the various organisations that contribute to the activities of the BR, we also have three operating principles that we want to permeate the activities of the BR:

- 1 Through knowledge and experiences, people's relationship with nature and culture is deepened and their capacity to act to contribute to a sustainable future is strengthened.
- 2 The BR, with its UNESCO status, unites and inspires, and shared successes are celebrated by all.
- 3 The BR is a model for sustainable development locally, nationally and internationally.

And the goals with special focus areas are formulated as follows:

1 Everyone can help preserve biodiversity

- management of cultural biotopes and the viability of natural pastures

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- restoring and strengthening ecosystem services, such as pollination and drinking water
- educational activities for active participation in the preservation and management of nature.

2 A healthy sea for the vitality of the archipelago

- nutrient reduction measures and nutrient recycling
- reducing marine litter and microplastics
- more knowledge about marine habitats.

3 Thriving islands where the individual is a strength

- the use of local knowledge for habitability analyses for individual islands and archipelagos
- adaptation to climate change
- young people's sense of belonging and empowerment
- housing options for different needs
- sustainable solutions for energy and transport
- the role of archipelago culture in a sustainable society
- commitment, pride and joy in spreading knowledge about the UNESCO BR.

4 The archipelago thrives on a diverse and sustainable economy

- industries based on creativity and sustainability
- sustainable tourism industry
- food crafts and local food products
- a diverse coastal fishing industry.

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 the main responsibility for BR management, appointed by the Ministry of the Environment. There is a three-party agreement between the ELY Centre and the two municipalities, committing the Town of Pargas to coordinating the BR, and binding

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both municipalities and the ELY Centre to fulfil the BR goals set in the management plan. The ELY Centre has committed to handling the basic funding of the BR.

The governance of the BR is based on cooperation on many levels. In 2018, the previous letter of intent for cooperation in the BR (2012–2017) was replaced with partner-specific agreements. Agreements were made with the Town of Pargas, the Municipality of Kimitoön, Metsähallitus's Parks & Wildlife Finland unit, ÅAU, UTU, and the Regional Council of Southwest Finland. These agreements were renewed for the period 2023–2027. Their specific roles and goals are described in the partner agreements. The agreements primarily focus on jointly defining the organisation's role within the activities of the BR, taking into account its regular operations. They also aim to raise awareness among staff working on tasks related to the BR about the opportunities and responsibilities involved.

At the same time, organisations are encouraged to take a more active role and to explore new ways of contributing to a sustainable future within the BR, to create synergies within the partner network, or to find ways to benefit from the international network.

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 four 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?

Everyone can help preserve biodiversity

Progress has been made in involving a larger number of stakeholders in BR activities, partly through the Biosphere Ambassador and Biosphere Partner programmes. The BR can therefore focus more on its coordinating role, while activities are realised by different local operators. Seminars and other events, many of which are arranged on an annual basis, are conducted in cooperation with BR partners and other stakeholders. The BR partners or other organisations administrate all projects. In recent years, significant efforts have been made to promote educational activities with a particular focus on children and young people. Through the Biosphere Academy's programmes, children and young people have the opportunity to increase their knowledge of their local environment and strengthen their connection to nature through outdoor experiences and discoveries. The BR also works long-term to support livestock farms, which play a central role in maintaining biodiversity on the islands. There is broad collaboration to promote care for these cultural biotopes.

A healthy sea for the vitality of the archipelago

We have made tremendous progress in terms of collaboration around educational activities within the BR. We see it as especially important to work long-term to strengthen the human connection to nature and the sea. Marine nature, in particular, has long remained relatively unknown. We have developed several models, tools, and materials that are used in educational activities with children and young people. The educational programme of the Biosphere Academy has been a success story for the BR. (See 2.4.9).

The Biosphere for Baltic network has strengthened its collaboration on ocean literacy and NBSs for a cleaner sea. A major joint project, 'Supported by Nature', has facilitated concrete actions and more intensive cooperation in recent years.

The interdisciplinary approach applied by The Sea profiling area at ÅAU integrates ecological and social scientific knowledge and develops methods for knowledge production across disciplines and different types of knowledge. The Sea is particularly focused on combining research on ecology, industrial management, political science and law and strongly supporting the work of the BR.

Thriving islands where the individual is a strength

Clear progress has been made regarding the participation of local society. A major asset for the BR is that management responsibility has been gradually shifted from the regional government to closer to the municipalities, the local community and archipelago inhabitants. BR activities have become more rooted in the local communities and the concept made more accessible to local associations, entrepreneurs and inhabitants. The municipalities have taken the main role in carrying out projects. The municipalities also contribute economically to the projects. The success of the Biosphere Ambassador Programme that involves local people in the BR has also brought the activities of the BR closer to the people and strengthened the sense of belonging.

The establishment of the ÅSS has given the BR effective tools for promoting a viable archipelago with a focus on the small islands of the outer archipelago. Young families have been able to settle on the small islands of the archipelago thanks to the ÅSS.

The BR supports the local island societies in the process of carrying out their own Habitability analyses. The Habitability concept sees habitability as the concrete core for assessing the sustainability of an island. Every sustainable society has to be habitable to survive, develop, and retain its resilience. An island has all the prerequisites to be habitable if the islanders feel secure and comfortable, if there are children in the school, and if there are workplaces, affordable houses and effective and sufficient logistics. (See 2.4.3)

Continuous work and special efforts during the anniversary year have made the BR concept and activities more visible, especially within the BR. The anniversary celebrations had a strong cultural and social perspective, and the BR was celebrated with several local happenings. The campaign '30 ways to celebrate the BR' engaged local associations, artists, and private persons.

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The Biosphere Partners and Biosphere Ambassadors programmes are both important tools for participation, increasing visibility and making the concept more accessible to the general public. The visibility has been enhanced with the use of BR flags at several locations around the area, e.g. main ferry piers and schools. 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. We see it as extremely important to strengthen people's sense of belonging and, in doing so, foster residents' pride in their own home region, which has been awarded UNESCO status.

The archipelago thrives on a diverse and sustainable economy

The BR Office has carried out projects to promote the fishing industry, animal husbandry, food processing, and tourism. A specific request from the local population, which emerged strongly during the latest strategy process, was that the BR should also support industries other than tourism.

The BR has put lots of effort into supporting traditional livelihoods and artisan food. The BR initiated and was involved in starting up an educational programme for artisan food processing and promotion of local artisan food products. The number of high quality local food products has increased and they can be found in grocery stores, small farm shops and restaurants. The BR maintains regular contact with the producers of meadow meat and highlights their important work for biodiversity and the vitality of the archipelago in various contexts – both through seminars and informational campaigns. The BR has also contributed to promoting coastal fishing as an important and interesting livelihood through a series of films about the profession and innovative products made from underutilised fish species. Additionally, it has organised training opportunities on the processing of fish products.

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 management structure is based on a three-party contract for the coordination of and shared responsibility for 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.

Through the partner-specific partnership agreements and the process surrounding them, the roles of several partners have been clarified, and a noticeable increase in their level of activity can now be seen. The BR is increasingly taken into account when partners plan projects, making it easier to take advantage of potential synergies.

As a result of the Biosphere Ambassador Programme, more people are representing the BR in different private or professional settings and networks.

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

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 into any national strategy. There are several national strategies of high importance for the BR. Finland's tourism strategy, **Achieving more together – sustainable growth and renewal in Finnish tourism for 2022–2028**, defines targets for the development of tourism until 2028.

In **The National Archipelago Programme** (*Kansallinen saaristo-ohjelma, 2024-2027*), the development of the archipelago areas is guided by a vision of a prosperous archipelago, now and in the future. The programme is published by the Ministry of Agriculture and Forestry of Finland. This seventh national development programme for island and other water-based regions addresses issues related to security more comprehensively than before. The foundation of an island policy lies in the Act on the Promotion of the Development of the Archipelago (494/1981, also known as the Archipelago Act). According to the Archipelago Act, central and local governments must strive to secure a permanent population in the archipelago by providing the population with sufficient opportunities for livelihoods, mobility and access to basic services, while protecting the archipelago's landscape and nature from environmental harm. To promote location-sensitive development, the Archipelago Programme includes the new element of encouraging the creation of local archipelago programmes.

The National Action Plan for Conservation and Sustainable Use of Biodiversity in Finland 2013–2020 (Luonnon puolesta – ihmisen hyväksi, Suomen luonnon monimuotoisuuden suojelun ja kestävän käytön toimintaohjelma 2013–2020). In this action plan, the BRs are mentioned as good model regions for land use planning with integration of both nature conservation and sustainable use.

The BR has its own lead document, **the Strategy for the Archipelago Sea Biosphere Reserve**, which includes all the partner organisations. **The MAB Strategy and Action Plan** as well as the **Management Plan for the Archipelago National Park** (Metsähallitus) and **the strategies and environmental programmes of both municipalities**, are all integrated in the strategy of the BR. The BR is also taken into account in all these documents.

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The current **Finnish Nature Panel** addressed two assessment reports published in December 2024 by the IBPES and describes BRs as excellent tools for safeguarding biodiversity from a societal involvement perspective, providing a short description of the ASABR. The Finnish Nature Panel is an independent scientific panel that supports the planning of and decision-making on nature policy. The role and tasks of the Nature Panel are defined in the Nature Conservation Act. The panel's statements and reports are based on scientific evidence and multidisciplinary expertise.

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)).

According to the Udvardy Biogeographical classification system, the 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. Humans are needed to keep the cultural landscape ecosystem in balance, but in terms of the marine ecosystem, the impact humanity has had has led to an imbalance in the system.

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

The BR is working to restore and maintain cultural landscapes together with Metsähallitus, the ELY Centre and the municipalities.

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

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In the core area, the national park is working for conservation of valuable and typical habitats and species. The BR activities have been concentrated more on the buffer and transitional zones. For example, concerning cultural landscapes, the BR 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 the Archipelago Sea. The activities of the BR are very much about spreading knowledge, creating space for discussion and strengthening people's own ability to act to protect biodiversity.

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 BR demonstrate approaches to sustainable development. The BR is developing and testing models for sustainable development. For several years, the BR has explored different approaches to promoting **cultural landscape management**, such as connecting landowners and livestock farmers with each other, supporting education for local entrepreneurs to become landscape managers and promoting the small-scale sheep industry on islands in the Baltic Sea. The long-term approach for promoting the ecologically, socio-economically and aesthetically important cultural landscape has been an important showcase for the BR.

The establishment of **the ÅSS** has given the BR new tools for putting theories in practice. The foundation has developed and tested a model for promoting immigration and opportunities for sustainable livelihoods on small islands in the archipelago by buying and renting out a culturally historically important property for permanent living and developing it together with the creative entrepreneurs that move there.

The work with schools and preschools is of high importance. Over the past years, we have developed long-term educational activities that are now brought together under one umbrella, called the **Biosphere Academy**. The education is based on sustainability, nature, and culture within the BR and aims to strengthen the sense of belonging and the engagement of the children and young people. Through the Biosphere Academy, which serves as an educational programme for the BR, we aim to promote a sustainability mindset that permeates early childhood education and care, as well as primary and secondary schools. We want to strengthen young people's ability to take action for sustainability in their local environment and increase their participation in the BR. We also aim to deepen their connection to nature and the local environment by increasing knowledge about the archipelago's nature and culture. This will be done through activities carried out in collaboration with various organisations, within the

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framework of UNESCO's programme for BRs and the national curriculum. We have solid experience through several models that have been established in our educational activities over the past decade.

The Pike and his friends is an interactive programme for preschools to introduce issues about sustainable development for children. Similar topics covered are waste treatment and the condition of the sea. The programme gives tools for the teachers to discuss the topic and interact with the children. Through **the Kids' Lab**, the BR offers experience-based courses on the marine environment. During the summer, the Kids' Lab is open and free of charge for everyone. In spring and autumn, it is visited by many school groups from both nearby and more distant areas.

The artisan food concept of *Mathantverk* is about food manufacturing that is based on traditions, handicrafts and genuine products. The concept is well adapted to small-scale environments in the archipelago, where mass production is impossible. In the Archipelago Sea area, primary production is dominant and few or almost none of the farmers process the products in any way. The BR Office has been involved in developing an educational programme for artisan food in Southwest Finland that has grown to include the whole west coast of Finland, including the Åland Islands. Today, the number of food artisans is growing and the products are available at markets and even local food stores.

The BR supports the local island societies in the process of carrying out their own **Habitability analyses**. The Habitability concept sees habitability as the concrete core for assessing the sustainability of an island. Every sustainable society has to be habitable to survive, develop, and retain its resilience. An island has all the prerequisites to be habitable if the islanders feel secure and comfortable, if there are children at the school and there are workplaces, affordable houses and effective and sufficient logistics.

4. "Have an appropriate size to serve the three functions of biosphere reserves".

A determination of the boundaries of the BR took place in 2010 and now the area of the BR is 5,400 km². The new boundaries made the transition zone larger and more unified. The BR includes large nature protection areas, but the majority of the terrestrial area is still private land and therefore a reasonable number of inhabitants and entrepreneurs are involved in the activities of the BR. The total surface is large, but there are still relatively few inhabitants. The total number of people spending time in the BR is continuously growing. There are several organisations doing research and monitoring and two marine research stations in the BR. The size and shape accommodate the three functions of the BRs well.

5. Appropriate zonation to serve the three functions

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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. The core zone is identified by the national park and consists of state-owned land and water. That is where most of the research and monitoring is happening. Moreover, the activities in buffer zones and transition areas share many similarities. These zones may actually be sometimes considered as just one zone. The buffer zone is mostly private land and not designated as any kind of protection area. It is characterised as a small-scale archipelago area with small islands, few inhabitants and little in the way of development activities, designated to function as a cooperation area of the national park. The transition zone is more densely populated and most of the permanent inhabitants of the BR live here. In this zone, most of the people live on a few larger islands with car ferry connections to the mainland. The transition zone is where most of the development projects and education are conducted.

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 BR activities in many ways. The cooperative management structure is based on a three-party contract for the administration. The BR Steering Committee features representatives from the local societies and organisations central to the BR. All of the main organisations have a Biosphere Partner agreement with defined goals for their contribution to the agenda of the BR. The Biosphere Partner Programme is open to any organisation with activities in the BR or any local company. Our most successful programme for involving private persons in the activities of the BR is the Biosphere Ambassador Programme. A forum for cooperation and information, the Archipelago Sea Winter Meeting, takes place annually.

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

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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 BR ('Skärgårdshavets Unesco biosfärområdes strategi för 2023-27' in Swedish) as well as regulations for the core areas and the Archipelago National Park (Metsähallitus) (in Swedish and Finnish). These are referred to earlier in this review.

c. The authority in charge of implementation of the BR is the ELY Centre for Southwest Finland. Based on a three-party contract between the ELY Centre and the municipalities, the Town of Pargas is administratively in charge of the BR. All the main partners have a Biosphere Partner agreement, with their main goals for contributing to the agenda of the BR. In core areas, i.e. the national park, the responsibility for implementation is with Metsähallitus.

d. At both ÅAU and UTU, there are research groups with strong links to the BR. The BR also has connections with research groups at Södertörn University and Uppsala University in Sweden. The BR Office does not run any research or monitoring on its own. However, the reserve has, over the years, taken initiatives to establish or run educational programmes and smaller research projects. The BR arranges together with the universities an educational programme for the Biosphere Ambassadors. Over the past years, we have developed long-term educational activities that are now brought together under one umbrella, called the **Biosphere Academy**. The education is based on sustainability, nature, and culture within the BR and aims to strengthen the sense of belonging and the engagement of children and young people. Through the Biosphere Academy, which serves as an educational programme for the BR, we aim to promote a sustainability mindset that permeates early childhood education and care, as well as primary and secondary schools.

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

At national level: Cooperation has been carried out with the Biosphere Reserve of North Karelia in Finland. We have arranged visits for BR partners to each other. For the last five years, the BRs in Finland have arranged a joint annual virtual FINMAB forum on the International Day for Biosphere Reserves – 3 November. The focus has been on cooperation and sharing good practices between the BRs, with Biosphere Partners centrally involved. Both BRs have supported the BR initiative in Lake Päijänne district. Recently, the BRs have decided to jointly develop a youth programme for Finland's BRs. The working group includes young people from both BRs.

At regional level: The ASABR has been coordinating and actively participating in the activities of the regional and thematic network of **NordMAB**. The ASABR has been part of the steering groups of two projects – MABLAB and MABLAB 2 – which aim to clarify the connection between BRs and the global biodiversity agenda, as well as supporting the establishment of new BRs in the Nordic countries. The projects strongly highlight the potential of positioning BRs as pilot areas for the Kunming-Montreal Global Biodiversity Framework. In the follow-up project, the focus shifted to sharing best practices from Nordic BRs. The projects were funded by Nordic Council of Ministers' Nordic Working Group for Biological Diversity. The publications of the projects are valuable contributions to the UNESCO MAB Programme.

The ASABR played a central role in establishing the **Biosphere for Baltic** network, which was launched in 2017 and the ASABR hosted the second meeting of the network in 2018. In 2018, representatives of eight BRs in six countries around the Baltic Sea met in the ASABR. The meeting was the second in a Biosphere for Baltic project, which highlighted the role of BRs in the work to achieve the UN's SDGs of Agenda 2030. The project focused on goal 14 on oceans and marine resources. Since then, we have maintained regular contact through virtual morning coffee meetings, as well as visits and gatherings at various BRs within the network.

In different configurations, we have taken part in events held in the West Estonian Archipelago, Słowiński in Poland, Southeast Rügen in Germany, and Kristianstad and the Blekinge Archipelago in Sweden. The Biosphere for Baltic network has fostered cooperation and common projects with a focus on ocean literacy, education and sustainable tourism.

The ASABR has been consulted on the process of establishing a new BR in the Nämndö Archipelago in Sweden. ASABR personnel have had regular exchanges 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 with the West Estonian Archipelago Biosphere Reserve. These two are in many ways very similar BRs and we have had an active exchange of information and fruitful cooperation in several developmental projects.

The ASABR has been actively involved in all **EuroMAB** network meetings with several team members, including youth representatives, representing the ASABR at Haapsalu, Estonia (2015); Sarlat-la-Canéda, France (2017); Dublin, Ireland (2019); Nockberge, Austria, (2021); and Elbe River Landscape, Germany (2023). At the conferences we have shared

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experiences from our work with, for example, artist cooperation and the Biosphere Academy.

In the exhibition about the ASABR that was created for the celebrations of the 30th Anniversary at Archipelago Centre Korpoström, with the help of our colleagues from nine BRs in the **World Network of Island and Coastal Biosphere Reserves** we carried out a thematic focus on island BRs. In the same section of the exhibition, the whole World Network of Biosphere Reserves was presented on a large globe. Additionally the ASABR was represented and shared good practices at the network meeting in 2023 on K'gari island in Great Sandy Biosphere Reserve, Australia.

Within the World Network of Biosphere Reserves: The BR hosted a group of students from Kanasawa University in connection with Hakusan Biosphere Reserve in Japan in a pilot project in 2023. Further cooperation is being planned.

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

The BR is run by a BR Office with only one permanent staff member – the coordinator. The lack of resources is challenging. Running core activities solely through projects is not sustainable in the long term and may affect the trust of key partners or inhabitants in the BR. In addition, it is very labour-intensive to constantly apply for funding for new project entities, as well as to monitor and report on them. We are working continuously to find sustainable solutions for running the BR's operations through new models of collaboration.

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.

The goals with special focus areas are formulated as follows:

1 Everyone can help preserve biodiversity

- management of cultural biotopes and the viability of natural pastures
- restoring and strengthening ecosystem services, such as pollination and drinking water
- educational activities for active participation in the preservation and management of nature.

2 A healthy sea for the vitality of the archipelago

- nutrient reduction measures and nutrient recycling

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- reducing marine litter and microplastics
- more knowledge about marine habitats.

3 Thriving islands where the individual is a strength

- use of local knowledge for Habitability analyses for individual islands and archipelagos
- adaptation to climate change
- young people's sense of belonging and empowerment
- housing options for different needs
- sustainable solutions for energy and transport
- the role of archipelago culture in a sustainable society
- commitment, pride and joy in spreading knowledge about the UNESCO BR.

4 The archipelago thrives on a diverse and sustainable economy

- industries based on creativity and sustainability
- sustainable tourism industry
- food crafts and local food products
- a diverse coastal fishing industry.

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)

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(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_Partners agreements_ in Swedish??****(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****III.I_Management Plan of the Archipelago National Park**

The only land use and management plan of relevance is the 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.**

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Management plan/strategy for the Archipelago Sea Area Biosphere Reserve 2023–27
(Strategi för Skärgårdshavets biosfärområde 2023–27 *in Swedish*)

Annex VII_The Management Plan of ASABR 2023-27

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: Korpoströmsvägen 832

City with postal code: 21720 Korpoström

Country: Finland

Telephone: +358-403562655

Email: katja.bonnevier@pargas.fi

Web site: www.biosfar.fi

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

Name: Metsähallitus's Parks & Wildlife Finland unit

Street or P.O. Box: Itsenäisyydenaukio 2

City with postal code: 20800 Turku

Country: Finland

Telephone: +358-400328759

Email: henrik.jansson@metsa.fi

Web site: <https://www.luontoon.fi/en/destinations/archipelago-national-park>

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

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

Annex I to the Biosphere Reserve Periodic Review, January 2013

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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 of Southwest Finland (ELY Centre of Southwest Finland) reporting for the Ministry of the Environment

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

Contact address: Pargas stad, Korpoströmsvägen 832, 21720 Korpoström, Finland, +358-40-3562655, katja.bonnevier@pargas.fi

Related links: www.biosfar.fi

Social networks: Facebook: ArchipelagoBiosphere, Instagram ArchipelagoSeaBiosphere

Description

General description:

Situated in southwestern Finland and representing a coastal environment with small islands in the Baltic Sea. The island societies are small-scale and the people who have lived there for generations have a close connection with the sea and nature. The traditional livelihoods like fishing and agriculture are getting less profitable and the population has decreased greatly 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 strong commitment to the area of 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 BR 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 in the BR are old-growth forests, cultural landscapes, moors, herb-rich forests and marine sea grass meadows with a scattered distribution. The mosaic-like archipelago consists of 6,500 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 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 and 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 Salpausselkä II and III). The main soil type is moraine.

The Archipelago National Park, which forms the core area of the BR, differs in many aspects from other Finnish national parks since it comprises 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 utilising natural resources, to protect a living community and to promote environmental research and interest in nature. With the establishment of the BR, a buffer zone and transition area now surrounds the national park in order to pave the way for sustainable development of the Archipelago Sea area.

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About 3,500 people live permanently within the BR. 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 brought a rich cultural and social exchange to the area. During different wars (e.g. the war between Sweden and Russia 1809 and World Wars I & II) the area was 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 a defence perspective. In addition to Lapland and eastern Finland, this is the only area with a remaining cyclic lifestyle, i.e. a naturally dependent lifestyle in harmony with nature and the seasons.

A number of sustainable development projects are being carried out in the BR, supported by research activities and exchange of experiences in the international network of BRs. The ASABR is administrated by the ELY Centre of Southwest Finland, the Town of Pargas (running the BR Office) and the Municipality of Kimitoön. The activities, often in the form 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, ÅAU, UTU and Metsähallitus (the Forest and Park Service) / Archipelago National Park.)

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

Major habitats & land cover types: Coniferous forests characterised by Scots pine (*Pinus sylvestris*), spruce (*Picea abies*) and birch (*Betula pubescens*); mull-soil forest with spruce, birch and aspen (*Populus tremula*), characterised by alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*) or oak (*Quercus robur*) and hazel (*Corylus avellana*); wood meadow including *Ranunculus acris*, *R. auricomus*, *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. The 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 (exact 538,599)

Core area(s): 53,423 of which 49,250 is water

Buffer zone(s): 257,712 of which 246,094 is water

Transition area(s): 227,464 of which 159,663 is water

Different existing zonation: The BR 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.

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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 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 for 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 new residents, tourists and entrepreneurs.
6. Support construction and maintenance of vertical and horizontal cooperative networks addressing issues that are important for the Archipelago Sea. This also includes promoting communication between universities, decision-makers and local people.
7. Act as a model area for sustainable solutions together with other BRs in the World Network of Biosphere Reserves.

Research

Brief description

Most of the natural science research is conducted in the national park and carried out by governmental authorities or the local universities. The focus is mainly on marine issues, but birds and vascular plants in a coastal environment and on the islands also attract some research attention. Since 2007, the Finnish Inventory Programme for Underwater Marine Diversity has conducted extensive marine inventories of biodiversity. Studies on the resilience and restoration of highly productive eelgrass meadows (*Zostera marina*) and the effect of marine heat waves on the benthic ecosystems have been important focus areas for marine research at Archipelago Centre Korpoström. The majority of the current research projects at the Archipelago Research Institute on the island of Själö are related to understanding the effects of climate change and other human stressors in the Baltic Sea environment. Research in other disciplines is also conducted in the Archipelago Sea area by the local universities. The vision of the recently established Centre for Sustainable Ocean Science at ÅAU is to establish a novel, transdisciplinary and user-centric paradigm for identifying and analysing marine biodiversity-related wicked problems and their solutions to support sustainability transitions. The BR Office works in particular to promote multidisciplinary research including both nature and society aspects. The role of the BR regarding research is primarily to strengthen the communication between researchers and society and to enhance the popularisation 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)

Abiotic		Biodiversity	
Abiotic factors		Afforestation/Reforestation	
Acidic deposition/Atmospheric factors		Algae	x
Air quality		Alien and/or invasive species	x
Air temperature	x	Amphibians	
Climate, climatology	x	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	

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		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

Socio-economic		Integrated monitoring	
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		Modelling	
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			

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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			