

## BIOTOPE INFORMATION SHEET

English name: <b>Baltic esker islands with sandy, rocky and shingle beach vegetation and sublittoral vegetation</b>		Code in HELCOM HUB: <b>1610</b>	
Characteristic species:			
Past and Current Threats (Habitat directive article 17): Eutrophication (H01.05), Construction (dredging J02.02.02), Tourism (G01), Mining and quarrying (both terrestrial and underwater extraction of sand; C01.01)		Future Threats (Habitat directive article 17): Eutrophication (H01.05), Construction (dredging J02.02.02), Tourism (G01), Mining and quarrying (both terrestrial and underwater extraction of sand; C01.01)	
Red List Criteria: <b>C1</b>	Confidence of threat assessment: <b>M</b>	<b>HELCOM Red List Category:</b>	<b>NT Near Threatened</b>
Previous HELCOM Red List threat assessments			
BSEP 75 (1998): "3" (Endangered) M – Esker islands		BSEP 113 (2007): Regions where the biotope/habitat is under threat and/or in decline: The Bothnian Sea, Åland Sea, Archipelago Sea, Gulf of Finland, The Southern Baltic Proper.	
Higher concern stated by:			

### Habitat and Ecology

The esker islands with related terrestrial and marine vegetation are biotope complexes that have been created by the forces of the melting inland ice sheet at the end of the last ice age some 10 000 years ago. The complex is often a very distinct landscape feature. The substrate consists of well sorted sand, gravel, pebbles and rocks. The vegetation community has adapted to the unstable substrate and perennial vegetation communities are often not established directly at the waters edge due to wave action.

Esker islands are often elongated ridges (stretched), consisting mainly of relatively well sorted sand, gravel, stones, boulders, or of till. The sorted material of the esker islands may sometimes form a 'tail/tails' behind a 'head/heads' of bedrock.

The saline environment has an effect on the vegetation on land, favouring halophytic species, e.g. at high water levels or by seawater spray. Drift-walls may occur. Also, the on-going land upheaval cause a succession of different vegetation types that, especially on larger islands, form a complex of biotopes/habitats covering the terrestrial part of the island as well as its underwater areas (base up until the shoreline). Several rare vegetation types e.g. heaths, sand and gravel shores with threatened and or declining species occur.

Definition of the habitat according to the 'Interpretation manual of European Union Habitats' EUR27:

Glaciofluvial islands consisting mainly of relatively well sorted sand, gravel or less commonly of till. May also have scattered stones and boulders. The vegetation of esker islands is influenced by the brackish water environment and often by the ongoing land upheaval, which causes a succession of different vegetation types. Several rare vegetation types (heaths, sands and gravel shores) and threatened species occur.

Plants: *Artemisia campestris*, *Cakile maritima*, *Calluna vulgaris*, *Empetrum nigrum*, *Honkenya peploides*, *Juniperus communis*, *Lathyrus japonicus subsp. maritimus*, *Leymus arenarius*, *Pinus sylvestris*, *Potamogeton filiformis*, *Potamogeton pectinatus*, *Potamogeton perfoliatus*,

## BIOTOPE INFORMATION SHEET

---

*Myriophyllum sibiricum*, *Salsola kali* Algae: *Ceramium tenuicorne*, *Chorda filum*, *Chara aspera*, *Cladophora glomerata*, *Fucus vesiculosus*, *Pilayella littoralis*

Animals: Insects- *Athetis lepigone*, *Simyra albovenosa*, *Actebia praecox* Molluscs- *Cerastoderma glaucum*, *Mya arenaria*

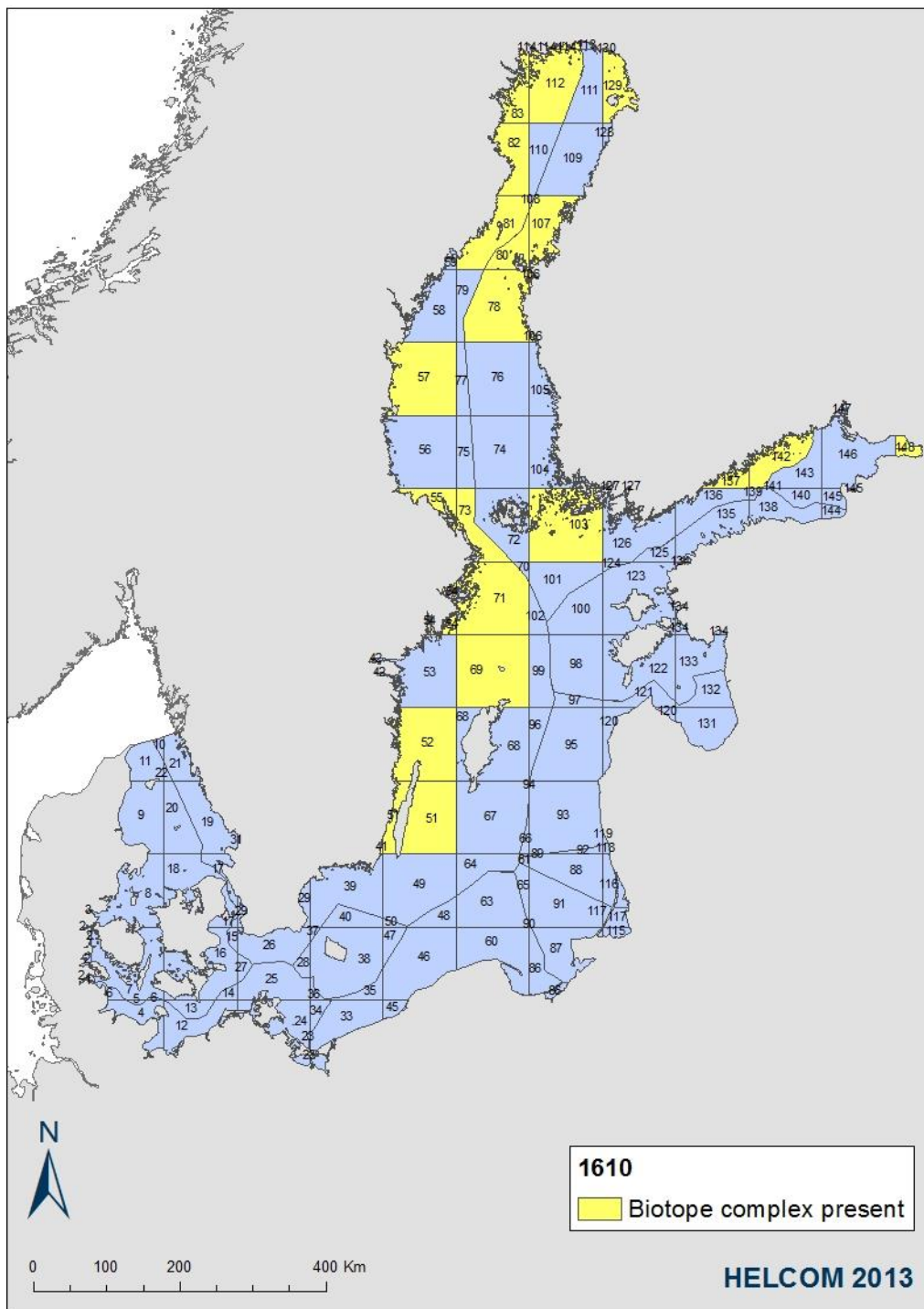


Underwater pebble bottom at an esker island (Photo: Metsähallitus)

## BIOTOPE INFORMATION SHEET

### Distribution and status in the Baltic Sea region

Esker islands occur mainly in the northern parts of the Baltic Sea but are most abundant on archipelago coasts. Typical esker islands in Finland and Sweden are Hailuoto and Gotska Sandön. The islands may include dune areas, sandy plains, sandy banks or pine forests also common in other areas with sand or gravel. The distribution map indicates the area in the 100 x 100 km grid where biotope is known or inferred to occur (Naturvårdverket 2011, HELCOM 1998). The geologically defined occurrences are considered to be permanent.



## BIOTOPE INFORMATION SHEET

### Description of Major threats

Eutrophication is a major threat of the biotope complex. Increased siltation and decreased water clarity have adverse effects on the associated underwater floral communities. Various construction activities have also destroyed and changed natural habitats of esker islands and part of the islands are inhabited and utilized year-round. Recreational activities on the islands affect some of the terrestrial features and construction of leisure houses and other constructions can pose a threat both to the terrestrial and underwater features. Dredging of shallow shores threatens the integrity of the underwater features, and extraction of sand and gravel has also affected both the terrestrial and underwater parts of esker islands.

### Assessment justification

C1

Over 70 % of the biotope complex is believed to have experienced moderately severe quality decline during the past 50 years. Dispersed habitation and seasonally intensive recreational use of the esker islands are the major cause of the quality decline. Especially beaches that consist of sand or gravel have been negatively impacted by human activities. Frequent recreational activities may cause abrasion/wear as well as visual, acoustic or physical disturbance to wildlife.

The underwater areas surrounding esker islands were previously also threatened by sand uptake but present legislation and improved understanding of the esker islands values prevent this from taking place. However, dredging of shallow shores of esker islands is still a threat in some areas.

Eutrophication of the sea area increases the amount of dead plant material washed ashore, which in turn increases the nutrient level of the shores which gradually changes the shore plant species diversity. In the southern parts of the boreal zone, eelgrass meadows (*Zostera marina*) are a characteristic feature of the sandy areas of the esker islands. Eelgrass meadows are known to have disappeared completely from some locations due to eutrophication. Due to eutrophication the light availability decreases and mats of filamentous algae covering the eelgrass also affects the eelgrass meadows negatively.

### Recommendations for actions to conserve the biotope

As for many other biotopes/biotope complexes would a Baltic wide biotope inventory and a threat assessment make it possible to assess the status of esker islands. A decrease of the eutrophication also would result in a favourable development of esker islands.

### Common names

Denmark: Marine åse der danner øer med sand-, klippe- eller stenstrandsvegetation og sublittoral vegetation i Østersøen, Estonia: -, Finland: Itämeren harjusaaret ja niiden hiekka-, kallio- ja kivikkorantojen sekä vedenalainen kasvillisuus, Germany: Esker (Moränen)-Inseln des Baltikums mit Sand-, Fels- oder Kiesstrand-Vegetation und sublittoraler Vegetation, Latvia: -, Lithuania: -, Poland: -, Russia: -, Sweden: Rullstensåsöar i Östersjön med littoral och sublittoral vegetation

### References

European Commission (2007b). Guidelines for the establishment of the Natura 2000 network in the marine environment. Application of the Habitats and Birds Directives. (EU interpretation manual) Available at: [http://ec.europa.eu/environment/nature/natura2000/marine/docs/marine\\_guidelines.pdf](http://ec.europa.eu/environment/nature/natura2000/marine/docs/marine_guidelines.pdf) (viewed

## BIOTOPE INFORMATION SHEET

---

4 June 2013)

HELCOM website:

[http://www.helcom.fi/environment2/biodiv/endangered/Biotopes/en\\_GB/Esker\\_islands/](http://www.helcom.fi/environment2/biodiv/endangered/Biotopes/en_GB/Esker_islands/) (viewed 26 June 2013)

Naturvårdsverket (2011) Vägledning för svenska naturtyper i habitatdirektivets bilaga 1, Blottade sand- och lerbottnar. Available at: [http://www.naturvardsverket.se/upload/stod-i-miljoarbetet/vagledning/natura-2000/naturtyper/kust-och-hav/vl\\_1610\\_Brackasoar.pdf](http://www.naturvardsverket.se/upload/stod-i-miljoarbetet/vagledning/natura-2000/naturtyper/kust-och-hav/vl_1610_Brackasoar.pdf) . (Viewed July 19 2013)