

***HELCOM Red List Species Information Sheets (SIS)
Macrophytes***

This document was a background document for the
2013 HELCOM Ministerial Meeting



SPECIES INFORMATION SHEET

Hippuris tetraphylla

English name: Fourleaf Mare's Tail	Scientific name: <i>Hippuris tetraphylla</i>	
Taxonomical group: Class: Magnoliidae Order: Lamiales Family: Hippuridaceae	Species authority: Linnaeus f.	
Subspecies, Variations, Synonyms: –	Generation length: Not known	
Past and current threats (Habitats Directive article 17 codes): Overgrowth of the open areas (A04.03, K01.03), Eutrophication (H01.05), Construction (D01, D03, J02.02.02), Competition (with <i>Hippuris x lanceolata</i> , K04.01)	Future threats (Habitats Directive article 17 codes): Overgrowth of the open areas (A04.03, K01.03), Eutrophication (H01.05), Construction (D01, D03, J02.02.02), Competition (with <i>Hippuris x lanceolata</i> , K04.01), Climate change (reduction of ice scouring, J03.03)	
IUCN Criteria: B2ab(i,ii,iii,iv,v)	HELCOM Red List Category:	EN Endangered
Global / European IUCN Red List Category : NE / LC	Habitats Directive: Annex II species	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/–, Finland Protected under the Nature Conservation Decree/ EN , Germany –/–, Latvia –/–, Lithuania –/–, Poland –/–, Russia –/–, Sweden protected by law/ CR		

Distribution and status in the Baltic Sea region

Hippuris tetraphylla has historically occurred along the whole coastline of Finland. The species has been strongly declining in its previously most abundant areas of occurrence along the Finnish coasts, and at the moment it is only known to exist in the Bothnian Bay and the Bothnian Sea. From the Gulf of Finland it has disappeared. In Sweden it is known only from Ångermanland's coast, where two known occurrences are closely situated. The species has also disappeared from the Swedish coasts of the Western Gotland Basin and the Northern Baltic Proper.



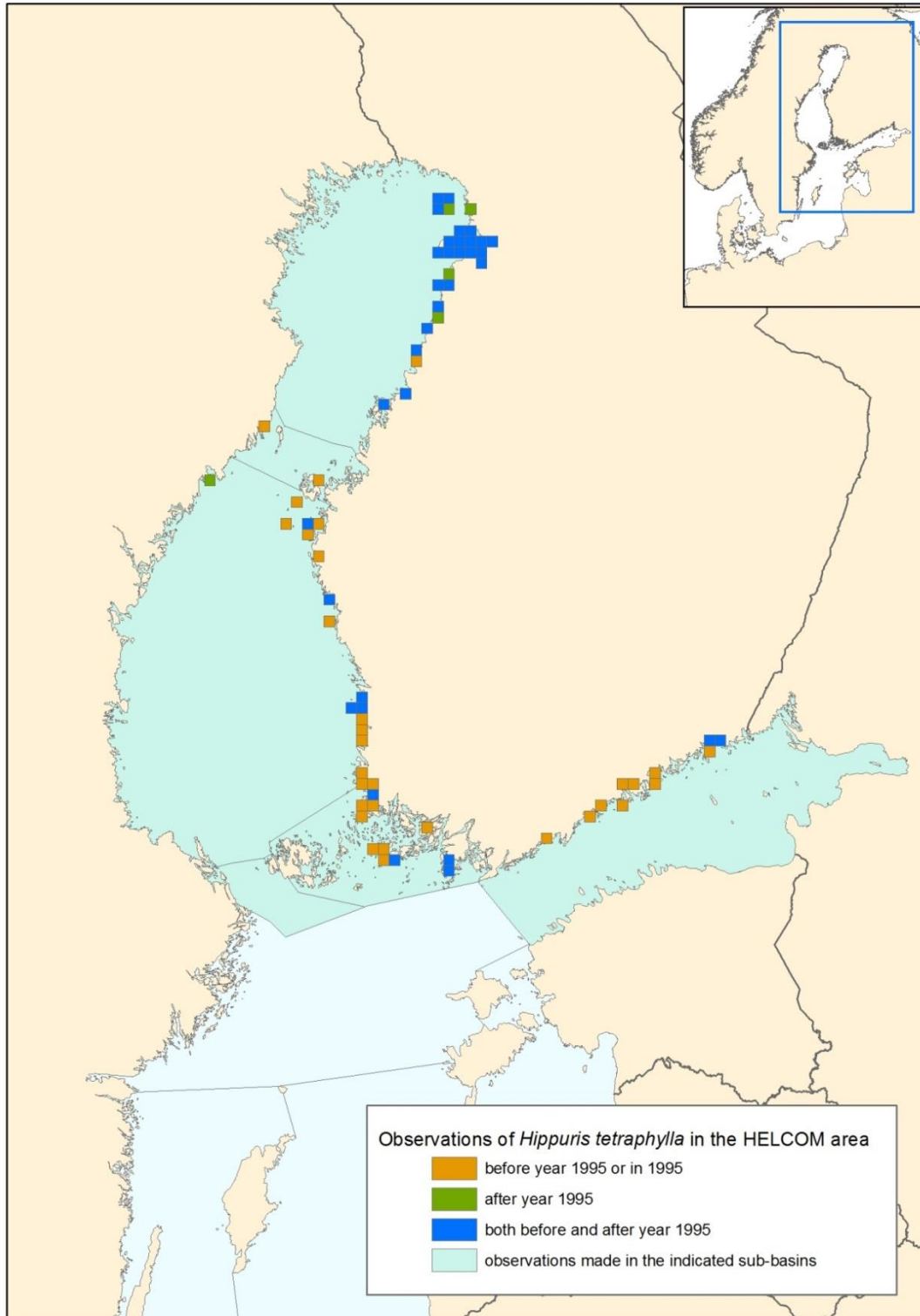
Hippuris tetraphylla. Photo by: Terhi Rytteri, Finnish Environment Institute

SPECIES INFORMATION SHEET

Hippuris tetraphylla

Distribution map

The records of the species compiled from the Finnish database of threatened species (Hertta) and from the Swedish Species Gateway. The species does not occur in inland waters. It should be noted that all the occurrences in the southern and southwestern coast of Finland are currently regarded extinct, although some of the records are rather recent and were made after 1995 (Ryttäri et al. 2012).



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Hippuris tetraphylla

Habitat and ecology

Hippuris tetraphylla is a perennial aquatic plant with size of 15–40 cm. It grows in shallow water with its upper part often emergent. It is able to spread vegetatively by its horizontal rhizome. It can be confused with *H. x lanceolata*, which is a hybrid originated from *H. vulgaris* and *H. tetraphylla*. However, these taxa have some ecological differences. *H. vulgaris* grows in fresh water or in brackish water in extremely low salinities. The hybrid inhabits open patches among reed and sedge vegetation in slightly salty brackish water, and small ponds on grazed seashore meadows. The largest and most viable current populations of *H. tetraphylla* are on wide and open shallow bays, typical e.g. to the Finnish land uplift coast, with at least partly soft bottoms, nearly always on more or less exposed islands or peninsulas. The plant reproduces by both seeds and vegetatively by pieces of its rhizome.

Description of major threats

Hippuris tetraphylla grows near the shore in shallow waters which are susceptible to be overgrown by reeds (*Phragmites australis*) that propagate effectively through their root system and block other aquatic plants. The expansion of reed belts has been accelerated by anthropogenic eutrophication, post-glacial land upheaval and the lack of grazing on coastal meadows and attached shallow water areas. The effects of eutrophication also include increased turbidity which negatively affects the growth of submerged aquatic plants such as *Hippuris tetraphylla*. It does this both by decreasing the amount of available light and by increasing silting and sedimentation which covers aquatic vegetation. Human induced threats also include construction of shipping lanes and ports and estuarine and coastal dredging. These measures cause direct habitat destruction. In addition, increased boat traffic in shallow areas causes resuspension of sediments resulting in increased turbidity and acceleration of eutrophication. The species also suffers from competition with *Hippuris x lanceolata*, a species that is the result of hybridization between *Hippuris tetraphylla* and *Hippuris vulgaris*. It has been suggested that the reduction of ice-scouring by rising temperatures may affect the species negatively in the future, since ice-scouring is a process that keeps the habitat open (Ryttäri et al. 2012).

Assessment justification

Hippuris tetraphylla was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007). The geographic range of the species is restricted in the form of the area of occupancy (AOO estimated to be only 200–300 km²), and the population is considered to be continually declining and fragmented. It has been declining strongly in the areas where it previously occurred most abundantly along the Finnish coasts. It has apparently disappeared totally from the Gulf of Finland. The continuing decline of the population is assumed to concern EOO, AOO, the area, extent or quality of the habitat, number of locations and number of mature individuals. The number of locations, the number of mature individuals, and also the extent of occurrences (EOO) still exceed the thresholds in the Red List criteria. The species meets the criteria for Endangered (B2ab(i,ii,iii,iv,v)).

Recommendations for actions to conserve the species

The species would probably benefit from cattle grazing of coastal meadows, which would create suitable open patches in shallow waters. In Finland, 76% of the known occurrences are already included in Natura 2000 areas. Other actions for conservation could include protection of as large a portion of the remaining distribution areas as possible and controlling urbanisation in areas where the species can be found.

SPECIES INFORMATION SHEET

Hippuris tetraphylla

Common names

Denmark: –, Estonia: –, Finland: nelilehtivesikuusi, Germany: –, Latvia: –, Lithuania: –, Poland: (przędzka), Russia: Хвостник четырёхлистный, Водяная сосенка четырёхлистная, Sweden: ishavshästsvans

References

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- Aronsson, M., Edqvist, M., Andersson, U.-B., Bertilsson, A., Ericsson, S., Mattiasson, G. & Ståhl, P. (2010). Kärlväxter – Vascular Plants. Tracheophyta. In Gärdenfors, U. (ed.) Rödlistade arter i Sverige 2010 – The 2010 Red List of Swedish Species. ArtDatabanken, SLU, Uppsala. P. 201–221. Red List categories available also at <http://www.artfakta.se/GetSpecies.aspx?SearchType=Advanced>
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- Swedish Species Gateway. Swedish Species Information Centre and Swedish Environmental Protection Agency. Available at www.artportalen.se.

SPECIES INFORMATION SHEET

Lamprothamnium papulosum

English name: Foxtail stonewort	Scientific name: <i>Lamprothamnium papulosum</i>	
Taxonomical group: Class: Charophyceae Order: Charales Family: Characeae	Species authority: (Wallroth) J. Groves 1916	
Subspecies, Variations, Synonyms: <i>Lamprothamnium hansenii</i> (C.Sonder) R. Corillion, 1957	Generation length: 1 year	
Past and current threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D03, J02.01.02, J02.12), Water traffic (G01.01.01), Tourism (G05)	Future threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D03, J02.01.02, J02.12), Water traffic (G01.01.01), Tourism (G05), Other threat factors (marine aquaculture, F01), Climate change (M01, M02)	
IUCN Criteria: B2ab(ii,iii,iv,v)	HELCOM Red List Category:	EN Endangered
Global / European IUCN Red List Category NE / NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/–, Finland –/–, Germany 1 (Critically endangered), part of a §30 biotope (Federal Nature Conservation Act), Latvia –/–, Lithuania –/–, Poland –/–, Russia –/–, Sweden –/– EN		

Distribution and status in the Baltic Sea region

Main distribution area of *Lamprothamnium papulosum* is the western Baltic Sea. Besides some historical records in Germany, it has never been found east of the Darss Sill. Outposts can be found in Norway, France, Italy, Spain, Ireland, and Great Britain.

All recent and former records of the species are restricted to Denmark, Germany and the west coast of Sweden. In Sweden, there are some rather recent records along the west coast but mostly the newest



Lamprothamnium papulosum.

Photo: Karin Fürhaupter, MariLim Aquatic Research GmbH.

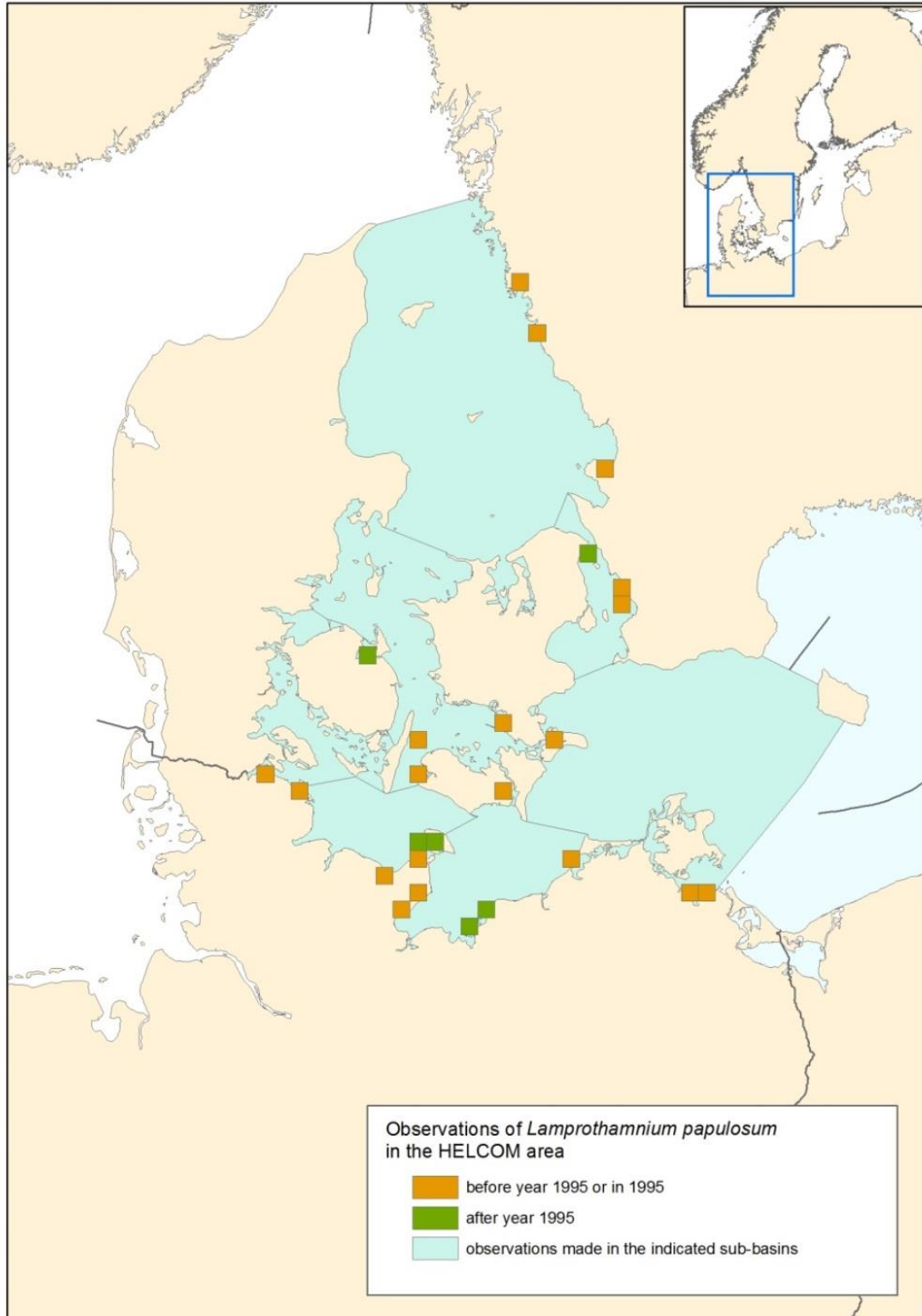
SPECIES INFORMATION SHEET***Lamprothamnium papulosum***

records are from outside the HELCOM area. Historical records from 1860–1933 exist from five geographically separated locations (Skåne, Halland, Västergötland). Although the species has recently been searched for in several of its historical locations, it has not been found in the Swedish HELCOM area. In Denmark, there are a few records newer than 1995 (northern Sjælland, Fyn), but none from the last 10 year period. Six records exist for the time period of 1988–1991 from four geographically separated locations in bays and lagoons (around Lolland and southern Sjælland). No specific location information could be gathered about historical occurrences for Denmark, but the species was known to occur at 15 different locations historically. In Germany, 15 recent records (time period 2004–2011) exist from four geographically separated locations in bays and lagoons (Orther Bucht, Fastensee, Kirchsee, Salzhaff). Former records exist from eight different locations. Seven locations are known to have disappeared and two locations that may have been overlooked previously have been recently found. Bays, fjords and lagoons in Germany are regularly checked for the EU Water Framework Directive (WFD) monitoring, and it can be assumed that the currently known locations represent the true distribution range of this species in Germany. Outside the HELCOM area, the species is known to be rare in Ireland and Great Britain where it also appears to be declining.

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*Lamprothamnium papulosum***Distribution map**

The records of species compiled from the Danish national database for marine data (MADS), unpublished Danish data, the German database for macrophyte occurrences (MARIDATA), database of the Swedish Species Information Centre, Botanical Museum Lund (LD), and Uppsala Museum of Evolution Herbarium (UPS).



SPECIES INFORMATION SHEET

Lamprothamnium papulosum

Habitat and ecology

L. papulosum is a characteristic macrophyte in shallow, sheltered bays, fjords and coastal lagoons. It grows on sandy bottoms that can have a mixture of silt, gravel and/or pebbles but unlikely on pure silt or clay. In contrast to many other charophyte species, *L. papulosum* is a typical brackish water species with no records in freshwater environments. In Sweden it has been reported at a salinity range between 9.5 and 25 psu, in Denmark between 8 and 18 psu and in Germany between 10 and 18 psu for recent records (8 and 18 psu for historical records). The lower salinity boundary for distribution seems to be around 8–10 psu. It typically occurs in depth ranges between 0.5 and 2 m. All recent records in Germany are no deeper than 1 m. *L. papulosum* often grows together with other charophytes such as *Chara baltica* and *C. canescens* and higher plants like *Ruppia spp.*, *Zannichellia palustris* and *Zostera noltii* but seems to avoid densely vegetated areas. It never builds up dense populations. Usually it is found as single specimens, and it may easily be overlooked. The species is annual but overwinters with globular bulbils in the sediment.

Description of major threats

The observed declines are probably caused mainly by increased eutrophication. As *Lamprothamnium papulosum* prefers vegetation stands with low coverage, it is likely to be sensitive to the increasing amount of ephemeral algae due to eutrophication. Also coastal constructions and physical disturbance due to increased tourism has led to intensified degradation of shallow water habitats like coastal lagoons, bays and fjords. In the future climate change may alter the habitat conditions and also increasing aquaculture in bays may deteriorate the habitats.

Assessment justification

L. papulosum was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007). The geographic range of the species is considered restricted and continuingly declining, mainly due to eutrophication (Andersson et al. 2004; Swedish Species Information Centre 2010). All recent and former occurrences are restricted to the west coast of Sweden, Denmark and Germany. The extent of occurrences (EOO) is estimated < 15 000 km². The area of occupancy (AOO) is less than 500 km². All of the Danish records are older than 10 years and for Sweden exist no records newer than 1995. In Germany the species has recently been found at four locations but only with single specimens. The population is severely fragmented due to the occurrence in very few separated bays and lagoons without any connection to each other. The continuing decline of the population is assumed to concern at least AOO, the quality of the habitat, number of locations and number of mature individuals, but it may concern also EOO. The species meets the criteria for Endangered, B2ab(ii,iii,iv,v).

Recommendations for actions to conserve the species

Combatting local sources of nutrients (mainly agriculture) causing eutrophication. Conservation measures, such as restriction of coastal construction, dredging and beach tourism in shallow coastal lagoons, bays and fjords.

Common names

Denmark: rævehaletråd, Estonia: –, Finland: –, Germany: Fuchsschwanz-Armleuchteralge, Latvia: –, Lithuania: –, Poland: –, Russia: Лампротамниум пупырчатный, Sweden: axstråfse

SPECIES INFORMATION SHEET

Lamprothamnium papulosum

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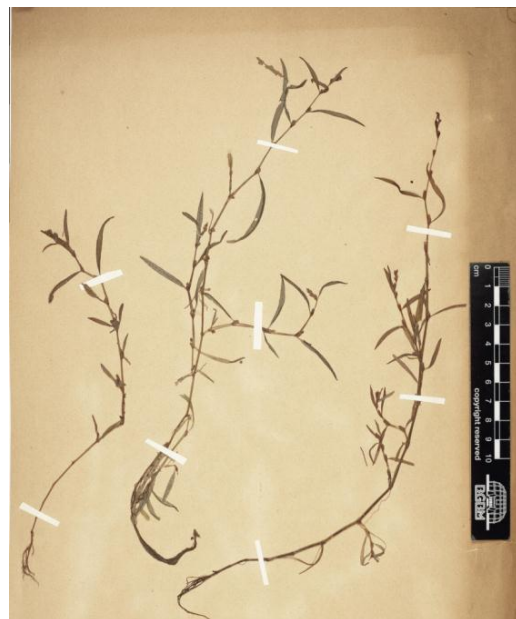
Persicaria foliosa

English name: –	Scientific name: <i>Persicaria foliosa</i>	
Taxonomical group: Class: Magnoliopsida Order: Caryophyllales Family: Polygonaceae	Species authority: (H. Lindb.) Kitag. 1937	
Subspecies, Variations, Synonyms: <i>Polygonum foliosum</i> H. Lindb.	Generation length: 1 year	
Past and current threats (Habitats Directive article 17 codes): Overgrowth of open areas (A04.03, K4.01), Eutrophication (H01.05), Construction (D03, E01, J02.02.02)	Future threats (Habitats Directive article 17 codes): Overgrowth of open areas (A04.03, K4.01), Eutrophication (H01.05), Construction (D03, E01, J02.02.02)	
IUCN Criteria: B2ab(ii,iii,iv,v)	HELCOM Red List Category:	EN Endangered
Global / European IUCN Red List Category NE / NT	Habitats Directive: Annex II	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/–, Finland protected under the Nature Conservation Decree/ EN , Germany –/–, Latvia –/–, Lithuania –/–, Poland –/–, Russia –/ NT in Red Data Book of St. Petersburg Nature, Sweden –/ NT		

Distribution and status in the Baltic Sea region

Persicaria foliosa has its main distribution areas in Finland and Sweden and it also occurs in Russia (Jalas & Suominen 1979). Nowadays its only known occurrence in the Russian waters is in the Neva Bay in the Gulf of Finland. There is also an old record from one location in Estonia (Anderberg & Anderberg 2010). The species is rather rare throughout its distribution area and its populations have declined both in Finland and Sweden. In Finland it is regarded Endangered (Rassi et al. 2010) and in Sweden Near Threatened (Swedish Species Information Centre 2010). Quite large proportion of the population lives along the Baltic Sea coast, where the decline has been less severe than in inland locations.

This species is included in Red Data Book of St. Petersburg Nature (Noskov 2004), Red Data Book of Eastern Fennoscandia and Red Data Book of Baltic Region.



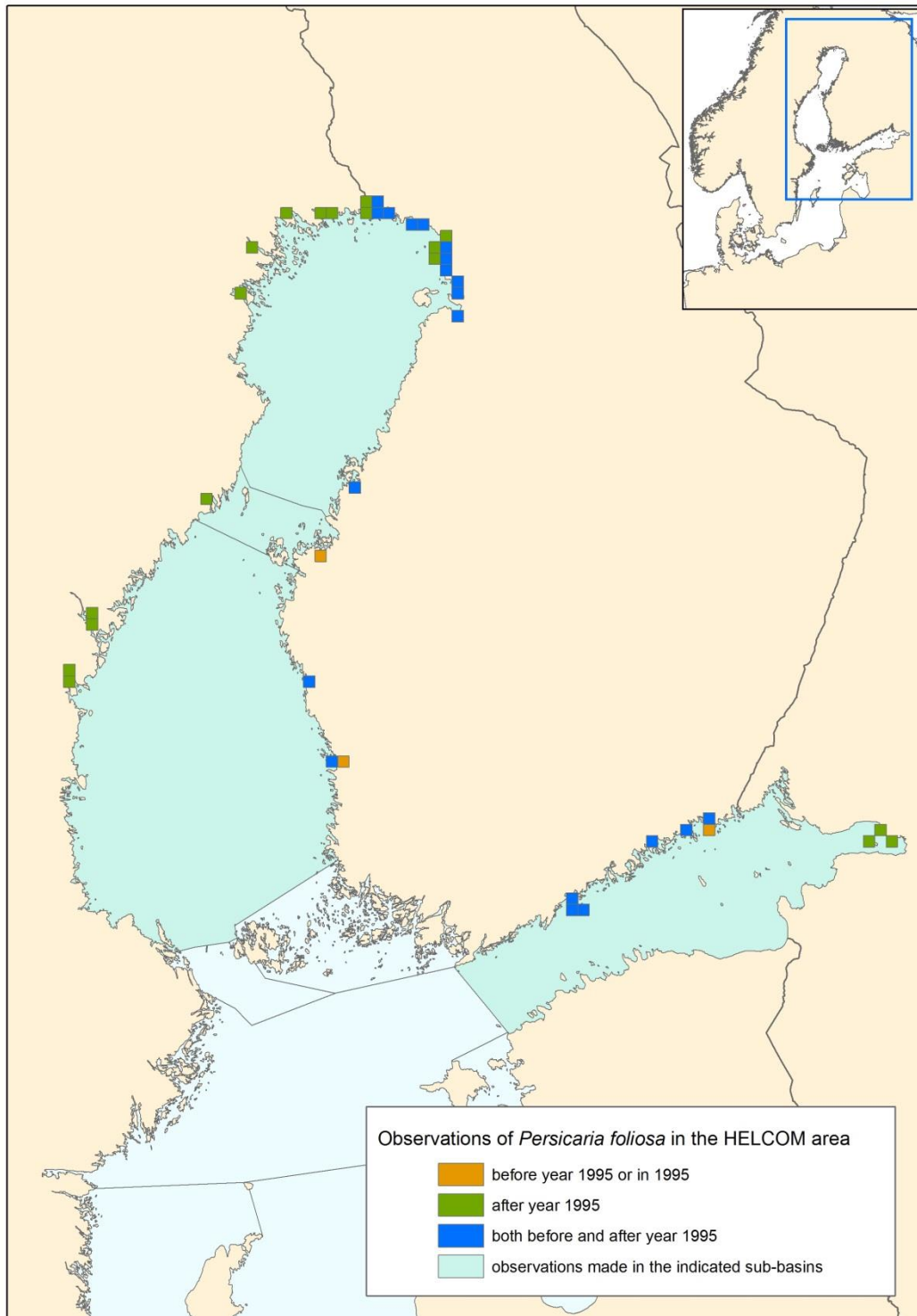
Persicaria foliosa. Photo by: Röpert, D. (Ed.) 2000– (continuously updated): Digital specimen images at the Herbarium Berlinense.

SPECIES INFORMATION SHEET

Persicaria foliosa

Distribution map

The records of the species compiled from the Finnish database of threatened species (Hertta), the Swedish Species Gateway, and Russian monitoring data and literature. The species occurs also in the central and southern Finland and Sweden but the inland occurrences are not shown on the map. It should be noted that many of the occurrences along the Finnish coastline are currently regarded extinct, although some of the records are rather recent and were made after 1995 (Ryttäri et al. 2012).



SPECIES INFORMATION SHEET

Persicaria foliosa

Habitat and ecology

Persicaria foliosa is an annual small plant that grows on the shores of lakes, rivers and the Baltic Sea in shallow water, usually among reeds. It prefers soft sandy or sandy-silty sediment bottoms. The species grows also in rocky pools in the outer archipelago. *P. foliosa* is a very weak competitor that benefits from processes that keep part of the habitat open, e.g. grazing of shore meadows, ice-scouring, large changes in water level and continuous deposition of fine material. The salinity limit is probably c. 3 ‰.

Description of major threats

Overgrowth by higher vegetation (e.g. reed) after cessation of grazing or due to eutrophication. In inland waters also water engineering and regulation of water level. Coastal engineering has had a negative impact on the species. In the eastern Gulf of Finland the populations have decreased considerably after the dam construction in the Neva Bay.

Persicaria foliosa is also very sensitive to water pollution, caused both by eutrophication and contaminants (Noskov 2004).

Assessment justification

In the HELCOM area (incl. inland waters), the geographic range of the species is restricted in the form of area of occupancy (AOO) and the population is also considered both continuingly declining and severely fragmented. Using only coastal occurrences, the estimate of AOO is c. 250 km². If inland occurrences were also taken into account, the AOO estimate would be c. 850 km² for the Swedish and Finnish occurrences. The species occurs also in Russia, in the easternmost part of the Gulf of Finland. The extent of occurrences (EOO), the number of locations and the number of mature individuals exceed the thresholds in the Red List criteria. The continuing decline of the population is assumed to concern at least AOO, the quality of the habitat, number of locations and number of mature individuals. The species meets the criteria for Endangered (B2ab(ii,iii,iv,v)).

Recommendations for actions to conserve the species

Growing sites should be protected from urbanisation and other human disturbance. Starting cattle grazing again on coastal meadows would possibly create suitable open habitat patches for the species in shallow water. The species would probably also benefit from any actions that could reduce the effects of eutrophication.

Common names

Denmark: –, Estonia: leht-kirburohi, Finland: lietetatar, Germany: –, Latvia: –, Lithuania: –, Poland: (rdest), Russia: Горец многолистный, Sweden: ävjepilört

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Persicaria foliosa

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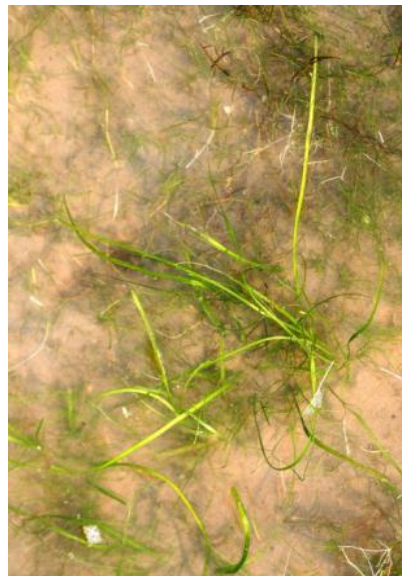
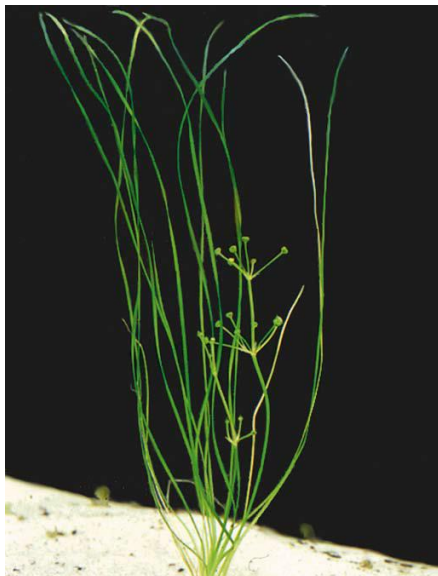
SPECIES INFORMATION SHEET

Alisma wahlenbergii

English name: –	Scientific name: <i>Alisma wahlenbergii</i>	
Taxonomical group: Class: Liliopsida Order: Alismatales Family: Alismataceae	Species authority: (Holmb.) Juz.	
Subspecies, Variations, Synonyms: <i>Alisma gramineum</i> ssp. <i>wahlenbergii</i> Holmb.	Generation length: 1–10 years	
Past and current threats (Habitats Directive article 17 codes): Overgrowth of open areas (A04.03, K04.01, K01.03), Eutrophication (H01.05), Construction (D01, D03, E01, J02.02.02)	Future threats (Habitats Directive article 17 codes): Overgrowth of open areas (A04.03, K04.01, K01.03), Eutrophication (H01.05), Construction (D01, D03, E01, J02.02.02), Climate change (reduction of ice scouring, J03.03)	
IUCN Criteria: B2ab(ii,iii,iv,v)	HELCOM Red List Category:	VU Vulnerable
Global / European IUCN Red List Category VU / VU	Habitats Directive: Annex II and IV	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/–, Finland strictly protected under the Nature Conservation Decree (Annex 4), a specific protection plan /EN, Germany –/–, Latvia –/–, Lithuania –/–, Poland –/–, Russia protected and red-listed in Leningrad Region as EN, also included in Red Data Book of Russia, Sweden protected by law / EN		

Distribution and status in the Baltic Sea region

Alisma wahlenbergii is an endemic species to the Baltic Sea and some adjacent lakes. It was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007). In the Baltic Sea, the extant occurrences are focused to two major areas from Rånefjärden (Sweden) to Kalajoki (Finland) in the Bothnian Bay, and in the eastern Gulf of Finland (Russia). The main population is situated on the Finnish coast of the Bothnian Bay. In Russia, the species has recently been recorded in rather abundant populations from many areas in the Berezovye Islands Archipelago (Glazkova & Tzvelev 2007), Vyborg Bay (Glazkova 2008; 2012), and in Neva Bay (Glazkova & Tzvelev 2006). The size of the population in



Alisma wahlenbergii. Photos by Jacob Andersen (left) and Elena Glazkova (right), Komarov Botanical Institute of Russian Academy.

SPECIES INFORMATION SHEET

Alisma wahlenbergii

Neva Bay, however, has decreased considerably after the construction of a dam across the bay (Noskov 2004).

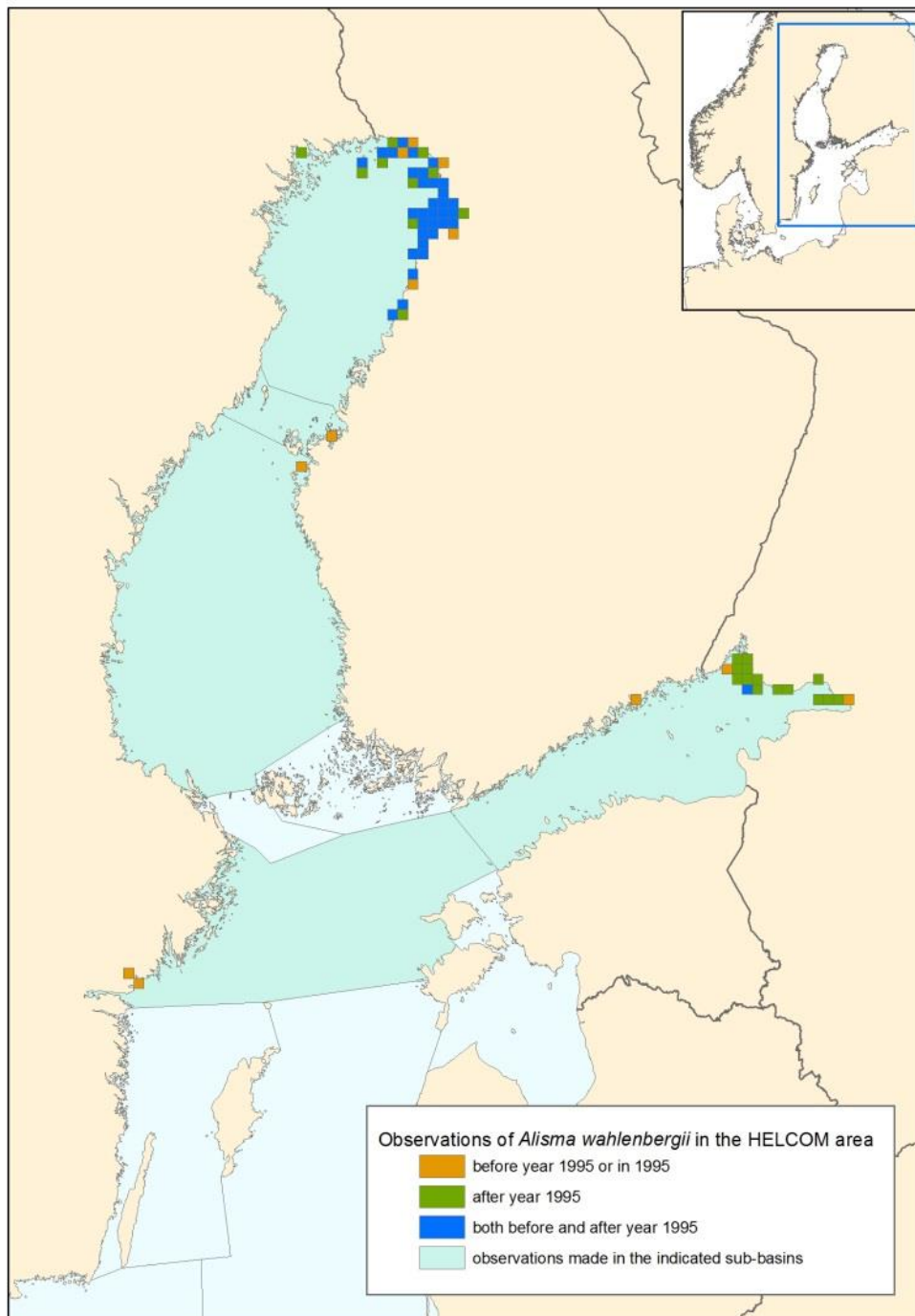
Populations in the Northern Baltic Proper (Nyköping, Sweden), the Quark (Vasa, Finland) and the Finnish part of the Gulf of Finland (Kotka) are currently regarded extinct. The species has completely disappeared from some of its former locations also in Russia, e.g. from the vicinity of Lakhta, where it was formerly abundant.

SPECIES INFORMATION SHEET

Alisma wahlenbergii

Distribution map

The records of the species are compiled from the Finnish database of threatened species (Hertta), Swedish Species Gateway (www.artportalen.se), Martinsson (1994) and Russian monitoring data and literature. The occurrences in the Quark, the Finnish part of the Gulf of Finland and on the coast of central Sweden are all regarded extinct. The species occurs also in lakes of central Sweden (occurrences not shown on the map).



SPECIES INFORMATION SHEET

Alisma wahlenbergii

Habitat and ecology

Alisma wahlenbergii is a short-lived perennial aquatic plant that grows on soft bottoms (silt, clay, sand) in shallow waters (in depth of 5–45 cm, up to 1.5 m), mainly on sheltered shores. Usually *A. wahlenbergii* grows in waters with a salinity >3 psu. The species demands clear water and is sensitive to overgrowth by filamentous algae and competition from larger plants such as reeds and water lilies. Due to the land-upheaval in the Bothnian Bay, the spatial distribution of the species is in constant change in the area. Current occurrence sites become unsuitable in less than a decade, but new potential ones are arising continuously.

The plants reproduction by seeds is efficient and the plant seems to have a permanent seed bank. Fruits ripen in August–September and are spread by water currents and drifting ice. Populations fluctuate in size from a few to thousands of individuals.

Description of major threats

The plant has been favored by cattle-grazing which keeps the shallow growing sites open. In recent decades, the practice of grazing seashore meadows has declined, and former growing sites have become overgrown. Eutrophication has further enhanced overgrowth as it favors strong competitors such as reeds. As *A. wahlenbergii* demands clean and clear water, it quickly dies out under conditions of high water turbidity and pollution. Local disappearances can also occur due to various construction activities on the coast as well as dredging of waterways.

Assessment justification

The geographic range of the species is restricted in the form of area of occupancy. The AOO estimates range from c. 400 to 650 km² depending on how the old records are included in the calculation. The population is considered to be continually declining and fragmented. In Finland the population has been regarded to experience extreme fluctuations in number of mature individuals, which may fluctuate from a few individuals to thousands. However, the fluctuations may not be synchronous over the whole distribution area. The extent of occurrences (EOO), the number of locations and also most probably the number of mature individuals exceed the thresholds in the Red List criteria. The continuing decline of the population is assumed to concern at least AOO, the quality of the habitat, number of locations and number of mature individuals. The species meets the criteria for Vulnerable (B2ab(ii,iii,iv,v)).

Recommendations for actions to conserve the species

Restoration of coastal meadows by cattle grazing is likely to benefit the species, as well as improving the water quality in the Baltic Sea, especially in the Leningrad region. The growing sites of *A. wahlenbergii* should also be protected from urbanization, construction activities and other human disturbance.

Common names

Denmark: liden skeblad, Estonia: –, Finland: upossarpio, Germany: –, Latvia: –, Lithuania: –, Poland: (żabieniec), Russia: Частуха Валенберга, Sweden: småsvalting.

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SPECIES INFORMATION SHEET

Chara braunii

English name: Braun's stonewort	Scientific name: <i>Chara braunii</i>	
Taxonomical group: Class: Charophyceae Order: Charales Family: Characeae	Species authority: C. C. Gmel. 1826	
Subspecies, Variations, Synonyms: <i>Chara coronata</i> J.B.Ziz ex G.W.Bischoff 1828	Generation length: 1 (annual)	
Past and current threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D01, D03, E01, J02.02.02), Water traffic (G01.01.01), Overgrowth of open areas (A04.03, K04.01)	Future threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D01, D03, E01, J02.02.02), Water traffic (G01.01.01), Overgrowth of open areas (A04.03, K04.01)	
IUCN Criteria: B2ab(iii)	HELCOM Red List Category:	VU Vulnerable
Global / European IUCN Red List Category NE / NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/NT, Finland Strictly protected status in the Nature Conservation Decree Annex 4/VU, Germany –/–(0, Extinct in freshwaters), Latvia –/–, Lithuania –/–, Poland –/–, Russia –/Red listed as VU, Sweden –/VU		

Distribution and status in the Baltic Sea region

In the Baltic Sea, *C. braunii* has been found from the Gulf of Bothnia and the Gulf of Finland. In Sweden the species is currently known to occur in a few locations in the northernmost Bothnian Bay. In Finland it has been found from the estuaries of the rivers Kiiminkijoki and Kokemäenjoki in the 1980s and 1990s. In the Gulf of Finland the most recent finding is from the period of 1960–1981 from the Russian part of the gulf (Pogrebov & Sagitov 2006). No recent findings have been confirmed from the Finnish coast of the Gulf of Finland. The last records are from the 1940s in Pohja, Pernaja and Porvoo. Anyhow, the species is known from a pond connected to river Porvoonjoki near the coastline. *C. braunii* was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007).

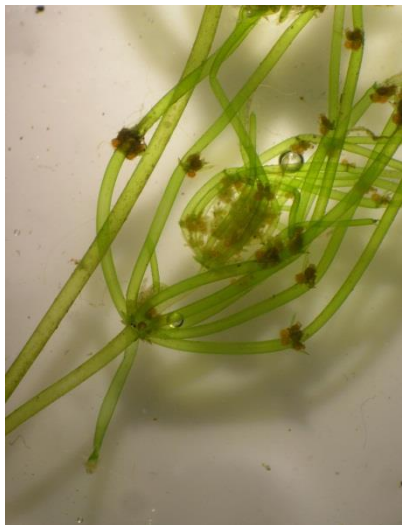
*Chara braunii.*

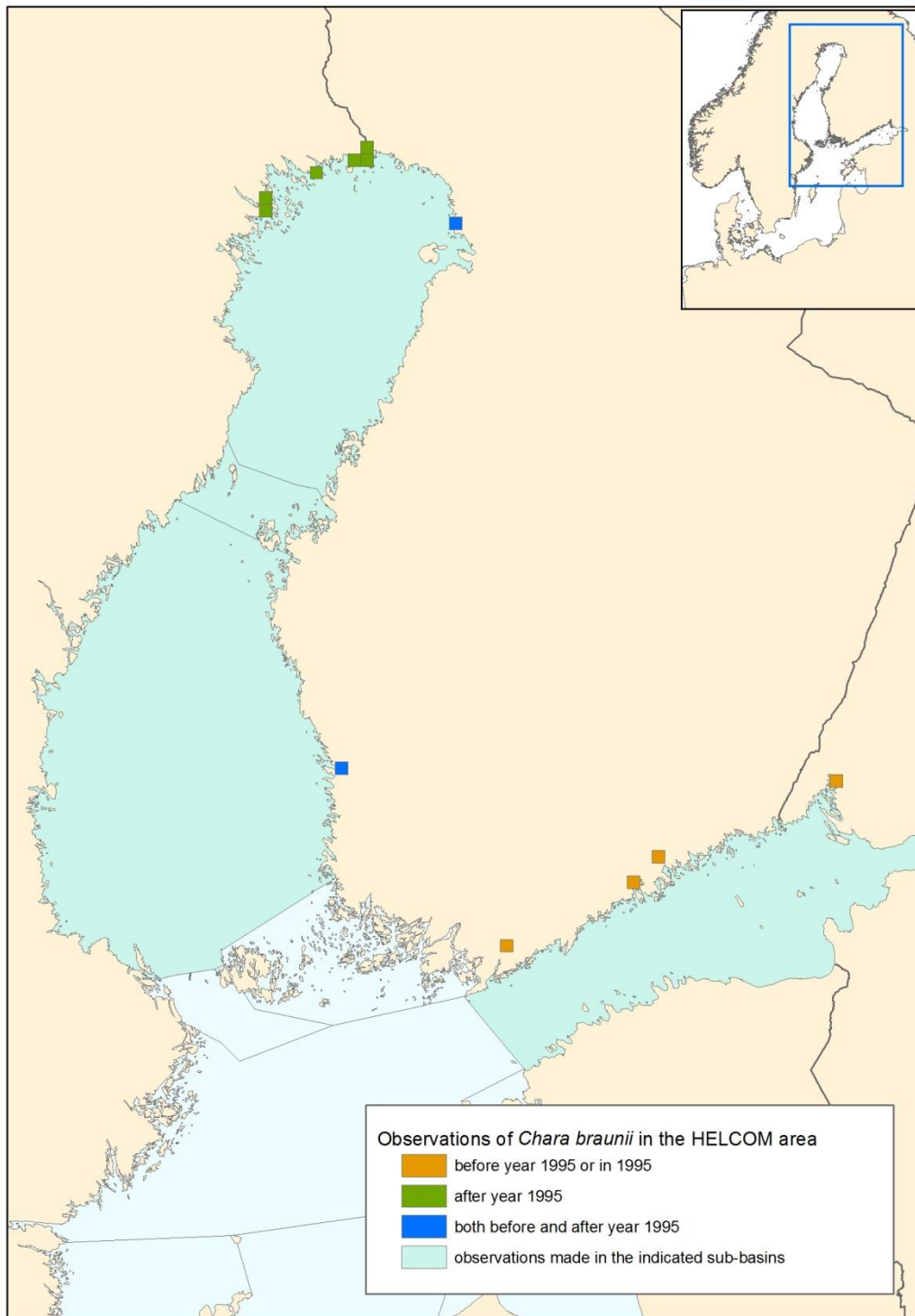
Photo by Gustav Johansson,
Hydrophyta Ekologikonsult.

SPECIES INFORMATION SHEET

Chara braunii

Distribution map

The records of the species have been compiled from the Finnish Museum of Natural History (Botanical Museum), Swedish Species Gateway (www.artportalen.se) and Russian literature. It should be noted that on the Finnish coast of the Gulf of Finland there are also recent records from Porvoo but those are from a pond connected to the river Porvoonjoki, not from brackish coastal waters of the Baltic Sea (not shown on the map). The species has also other inland occurrences that are not shown on the map.



SPECIES INFORMATION SHEET

Chara braunii

Habitat and ecology

In the Baltic Sea, *C. braunii* is restricted to low salinities of about 0–3 psu. *C. braunii* grows only in shallow and quite sheltered habitats, often inside extensive reed vegetation. Most records are from a depth of 0.1–0.5 m (Zhakova 2003 and references therein).

Description of major threats

The main causes of the decline of charophytes in many regions of the Baltic Sea seem to be eutrophication and habitat destruction. Motor boat traffic has been suggested to affect charophytes by increased turbidity and mechanical damage (Blindow et al. 2003). Competition with other macrophytes and decreasing light conditions restrict the occurrence of the species with increasing depth of water.

Assessment justification

The species is rare and its geographic range is restricted in the form of area of occupancy (AOO). In recent decades *C. braunii* has been found only from a few locations in the Gulf of Bothnia and in the period of 1960–80s from one location in the Gulf of Finland. In 1940s several more locations were known along the Finnish coast. The overall number of locations is estimated to be 6–10. The population has declined considerably from the 1940s and it is assumed that the decline still continues due to e.g. adverse effects of eutrophication on the quantity and/or quality of the habitat. The species meets the criteria B2ab(iii) under VU. The AOO calculated on the basis of known occurrences in the Baltic Sea would even indicate EN.

Recommendations for actions to conserve the species

Mitigation of eutrophication by controlling local sources of nutrient run-off. Conservation measures such as restrictions on coastal constructions and dredging in shallow coastal lagoons and archipelago areas.

Common names

Denmark: –, Estonia: kroonjas mändvetikas, Finland: silonäkinparta, Germany: –, Latvia: –, Lithuania: brauno maurabragis, Poland: ramienica wieńcowa, Russia: Хаpa Брайна, Sweden: svedsträffe.

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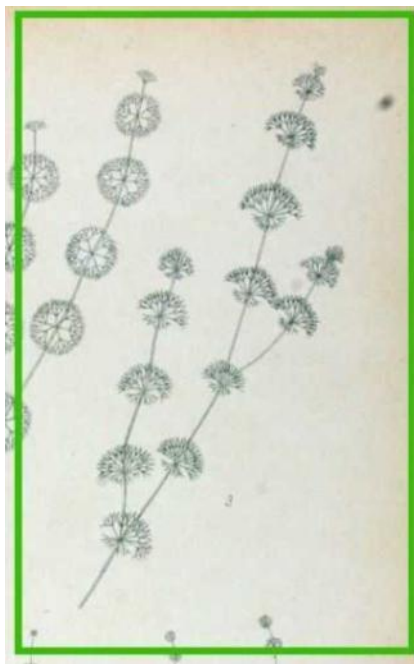
SPECIES INFORMATION SHEET

Nitella hyalina

English name: Many-branched Stonewort	Scientific name: <i>Nitella hyalina</i>	
Taxonomical group: Class: Charophyceae Order: Charales Family: Characeae	Species authority: (D.C. in Lam. & DC.) C. Agardh 1824	
Subspecies, Variations, Synonyms: –	Generation length: –	
Past and current threats (Habitats Directive article 17 codes): Overgrowth of open areas (A04.03, K04.01), Eutrophication (H01.05), Water traffic (G01.01.01), Construction (D03, J02.01.02, J02.02.02)	Future threats (Habitats Directive article 17 codes): Overgrowth of open areas (A04.03, K04.01), Eutrophication (H01.05), Water traffic (G01.01.01), Construction (D03, J02.01.02, J02.02.02)	
IUCN Criteria: B2ab(iii)	HELCOM Red List Category:	VU Vulnerable
Global / European IUCN Red List Category NE / NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/–, Finland Threatened status in the Nature Conservation Decree Annex 4/VU, Germany –/–(1, Critically endangered in freshwaters), Latvia –/–, Lithuania –/–, Poland –/–, Russia –/–, Sweden –/–		

Distribution and status in the Baltic Sea region

In the Baltic Sea, the only records of *Nitella hyalina* are from Finnish and Russian waters. Although mainly a fresh water species, in Finland it has been found almost exclusively in slightly brackish water along the south coast. One of the former sites of occurrence (Saltfjärden in Kirkkonummi) is known to have been totally changed as the bay has been drained to gain arable land (Langangen et al. 2002). According to Koistinen (2003) the species has been found at four different sites at two locations in the eastern part of the Finnish south coast since the year 2000. In 2007 it was found at two sites in one of



Nitella hyalina. Source: www.biolib.de

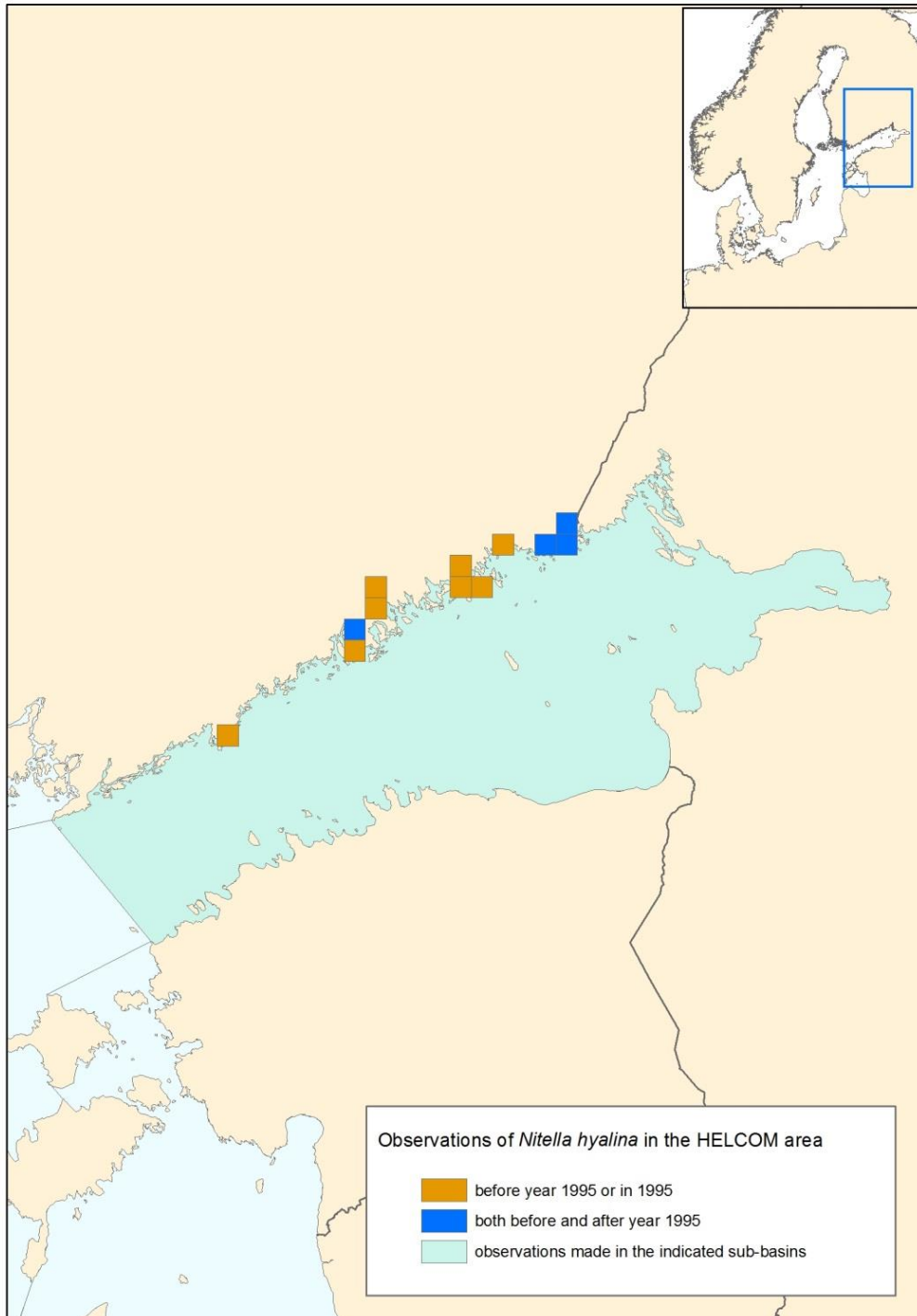
SPECIES INFORMATION SHEET

Nitella hyalina

the earlier locations at Vilkkilänlahti. In the Finnish Red List *Nitella hyalina* has been classified as VU. Of the Russian location no recent information is available and the species is not included in the Red Data Book of the Leningrad Region (Koistinen 2003).

Distribution map

The records of species compiled from the Finnish Museum of Natural History (Botanical Museum) and from the Finnish database for threatened species (Hertta). There has been an occurrence also on the Russian side of the Gulf of Finland but there is no recent information on that location.



SPECIES INFORMATION SHEET

Nitella hyalina

Habitat and ecology

Nitella hyalina is a freshwater species that can also be found in brackish water (Langangen et al. 2002). The species grows along the shore line, preferably on bare bottoms between reed stands and in sheltered openings inside them. It can also be found in moderately exposed areas in shallow water. In Finland the species has been growing in salinities ranging from freshwater to 2.8 psu.

Description of major threats

All major threats to the species are related to either decline of habitat quality or destruction of suitable habitat. *Nitella hyalina* grows in shallow, sheltered waters that are susceptible to be overgrown by reeds (*Phragmites australis*). The reeds propagate effectively through their root system and block other aquatic plants. The expansion of reed belts has been accelerated by anthropogenic eutrophication, post-glacial land up-heaval and a lack of grazing of coastal meadows and adjacent shallow water areas. The effects of eutrophication also include increased turbidity. This disturbs the growth of submerged aquatic plants such as charophytes, both by decreasing the amount of available light and by increasing silting and sedimentation. Other human induced threats, such as construction of shipping lanes and ports and estuarine and coastal dredging cause direct habitat destruction. In addition, increased boat traffic in shallow areas causes resuspension of sediments increasing turbidity and further accelerating eutrophication.

Assessment justification

Nitella hyalina has restricted geographic distribution and its population is regarded continually declining. The number of locations is estimated to 6–10. The continuing decline is assumed to concern at least the area, extent or quality of the habitat which are negatively affected by eutrophication and reed belt expansion. The species is categorized as Vulnerable according to the criteria B2a,b(iii).

Recommendations for actions to conserve the species

As with most charophytes, not much of the habitat of this species is protected. Possible actions for conservation should include protection of habitats from anthropogenic effects ranging from eutrophication to marine traffic related issues such as effects of boating and dredging for boat lanes. Also restoration of coastal meadows by cattle grazing might benefit the species.

Common names

Denmark: –, Estonia: –, Finland: kalvassiloparta, Germany: –, Latvia: –, Lithuania: žalsvasis menturdumlis, Poland: (krynicznik), Russia: нителла гиалиновая, Sweden: blekslinke

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SPECIES INFORMATION SHEET

Zostera noltii

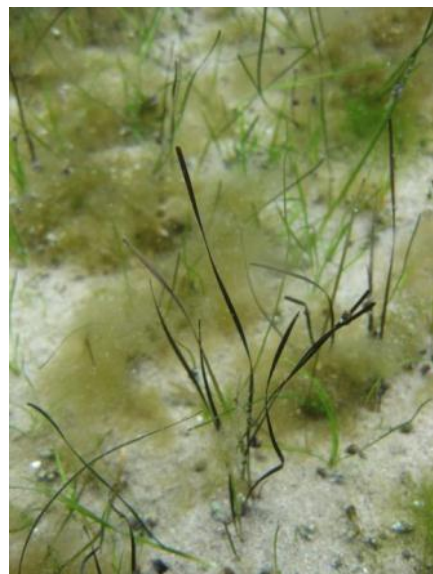
English name: Dwarf eelgrass	Scientific name: <i>Zostera noltii</i>	
Taxonomical group: Class: Zosteraceae Order: Najadales Family: Zosteraceae	Species authority: Hornemann 1832	
Subspecies, Variations, Synonyms: <i>Zostera nana</i> Roth 1827	Generation length: >10 years (expert judgement)	
Past and current threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D03, J02.01.02, J02.12), Water traffic (G01.01.01), Tourism (G05)	Future threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D03, J02.01.02, J02.12), Water traffic (G01.01.01), Tourism (G05), Other threat factors (aquaculture, F01), Climate change (M01, M02)	
IUCN Criteria: B2ab (iii, iv)	HELCOM Red List Category:	VU Vulnerable
Global / European IUCN Red List Category LC / NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: Denmark –/LC, Estonia –/–, Finland –/–, Germany 1 (Critically endangered), part of a §30 biotope (Federal Nature Conservation Act), Latvia –/–, Lithuania –/–, Poland –/–, Russia –/–, Sweden –/VU		

Distribution and status in the Baltic Sea region

Zostera noltii is widely distributed along the European Atlantic coasts with the northern distribution limit in Shetland Islands and southern Norway and the southern limit on the coast of Mauritania. It also occurs in the Mediterranean and Black Sea. Within the Baltic it is restricted to the western Baltic. It has not been found east of the Darß Sill in the Arkona basin.

All recent and former occurrences are restricted to Denmark, Germany and the west coast of Sweden. Especially in Denmark and Sweden there are considerably more old records compared to new ones but this is probably explained only partly by genuine population decline and partly by decreased monitoring effort.

Z. noltii was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007).

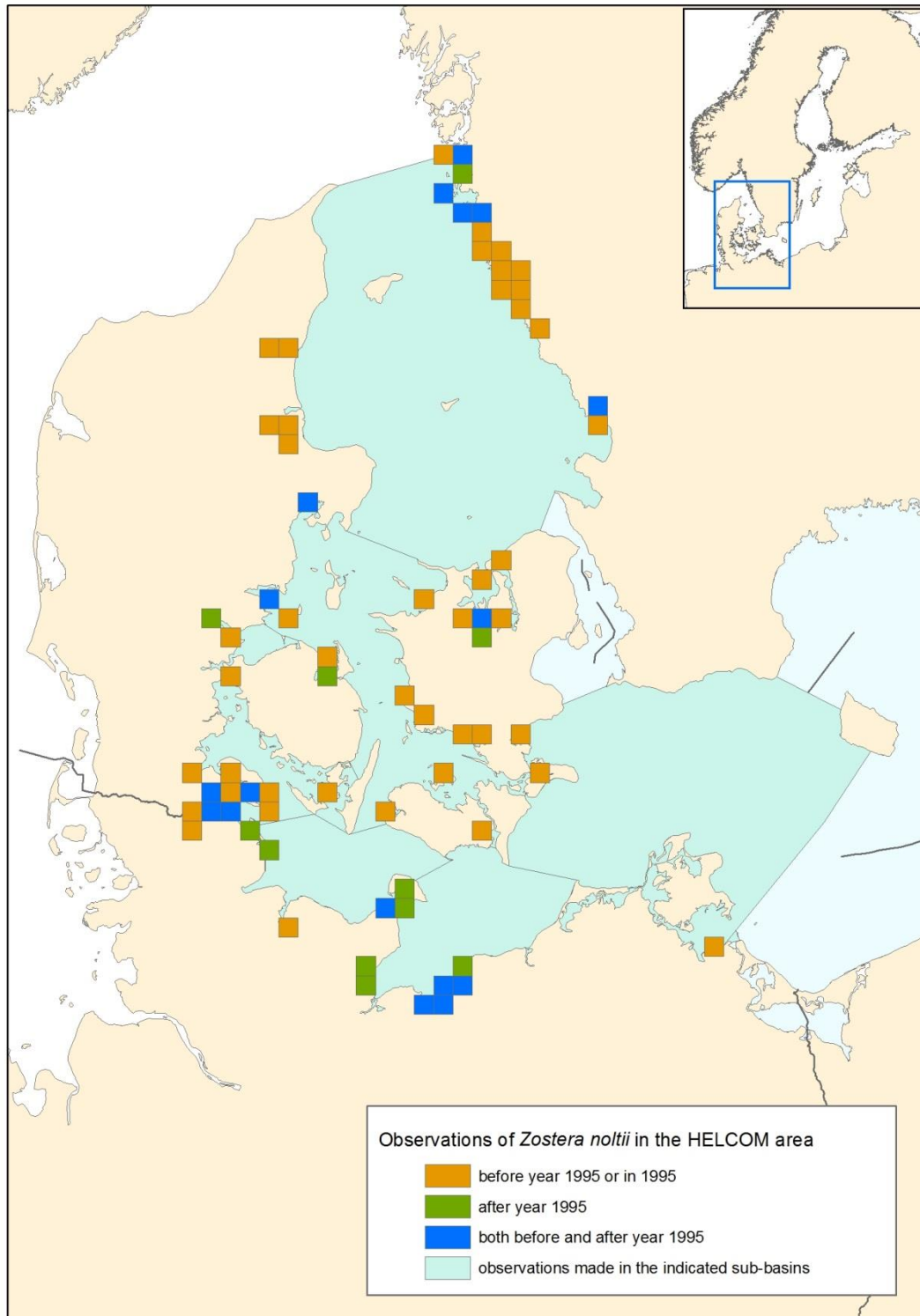


Zostera noltii – dark green plants growing within young *Zannichellia palustris* plants (light green) and epiphytes by Karin Fürhaupter.

SPECIES INFORMATION SHEET

*Zostera noltii***Distribution map**

The records of species compiled from the Danish national database for marine data (MADS), the German database for macrophyte occurrences (MARIDATA) and Swedish Species Gateway (www.artportalen.se).



SPECIES INFORMATION SHEET

Zostera noltii

Habitat and ecology

Zostera noltii occurs in intertidal flats of Atlantic coasts. In the Baltic Sea it is a characteristic component in shallow, sheltered bays, inlets and fjords where it grows on sand and muddy sand. It is a marine species, which occurs in brackish environments down to about 9–10 psu. Its upper and lower growth limits shift downwards with decreasing salinity. Therefore in brackish waters, it may become permanently submerged, whereas in marine waters it grows in the intertidal zone. However, the growing sites of *Z. noltii* in the uppermost sublittoral (0,25–1 m) may fall dry time to time also in the Baltic Sea (wind-induced). Although *Z. marina* occurs at same locations with *Z. noltii*, the species do not mix with each other, as *Z. marina* occurs deeper than 1 m. *Z. noltii* is associated more often with *Ruppia* spp. and *Zannichellia palustris* or some charophytes. It can easily be overlooked due to resemblance with *Ruppia* spp. (unfertile plants). It serves as an important food source for migrating water birds such as brent geese and widgeons (MarLIN).

Description of major threats

The species is restricted to very shallow bays, inlets and fjords with high eutrophication loads from agriculture. Those bays are often affected by coastal defence constructions, harbour constructions and high impact from beach tourism and sport activities. Eutrophication together with these activities cause a decline of habitat quality and destruction of suitable habitat of the species. In the future higher water temperature and changes in the salinity range due to climate change may also threaten the population.

Assessment justification

The geographic range of the species is considered restricted and continually declining, mainly due to eutrophication. All recent and former occurrences are restricted to the west coast of Sweden, Denmark and Germany. The extent of occurrences (EOO) is estimated < 50 000 km², and the area of occupancy (AOO) < 2 000 km². In Germany, where there is regular monitoring for this species, its disappearance has been evidenced e.g. in several lagoons. Local extinctions may have happened also in other countries but there is no data to show that due to the lack of proper monitoring. It should be noted that the AOO may be even lower in reality. The population is also fragmented. The continuing decline of the population is assumed to concern at least AOO, the quality of the habitat, number of locations, but it may concern also EOO. The species most probably meets the criteria for Vulnerable (B2ab (ii,iii,iv)).

Recommendations for actions to conserve the species

Mitigation of eutrophication by controlling local sources of nutrient run-off. Conservation measures, such as restriction on coastal construction, dredging and beach tourism in shallow coastal lagoons, bays and fjords.

Common names

Denmark: dværg-bandeltang, Estonia: –, Finland: pikkuajokas, Germany: Zwergseeegras, Latvia: –, Lithuania: mažasis andras, Poland: zostera drobna, Russia: –, Sweden: dvärgbandtång

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SPECIES INFORMATION SHEET

Zostera noltii

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- MarLIN, The Marine Life Information Network - information to support marine species and habitat conservation, sustainable management, protection and planning (www.marlin.ac.uk)
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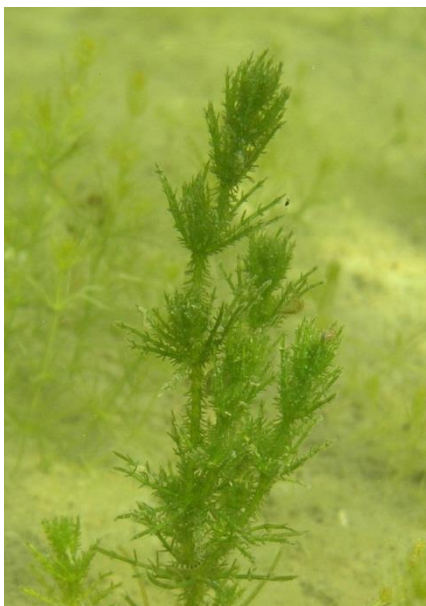
SPECIES INFORMATION SHEET

Chara horrida

English name: –	Scientific name: <i>Chara horrida</i>	
Taxonomical group: Class: Charophyceae Order: Charales Family: Characeae	Species authority: Wahlst 1862	
Subspecies, Variations, Synonyms: –	Generation length: –	
Past and current threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D01, D03, E01, J02.02.02), Water traffic (G01.01.01)	Future threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D01, D03, E01, J02.02.02), Water traffic (G01.01.01)	
IUCN Criteria: B2b(ii,iii,iv,v)	HELCOM Red List Category:	NT Near Threatened
Global / European IUCN Red List Category NE / NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/–, Finland –/EN, Germany –/1 (Critically endangered), Latvia –/–, Lithuania –/–, Poland –/–, Russia –/–, Sweden –/NT		

Distribution and status in the Baltic Sea region

The current distribution of *Chara horrida* in the Baltic Sea is concentrated along the east coast of Sweden, the Öregrund archipelago being the northernmost limit. In Finland, the species has been found from several locations in the Åland archipelago in the 2000s. Older records exist also from the southern coast of the Finnish mainland. There are no former records from Estonia but a few recent findings exist from the outer Estonian archipelago after the year 2006. *Chara horrida* seemed already to be extinct from German coastal areas but in 2005 the species was found in Schmidt Bülden. In Denmark, *C. horrida* has disappeared from its former locations. The species was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007).

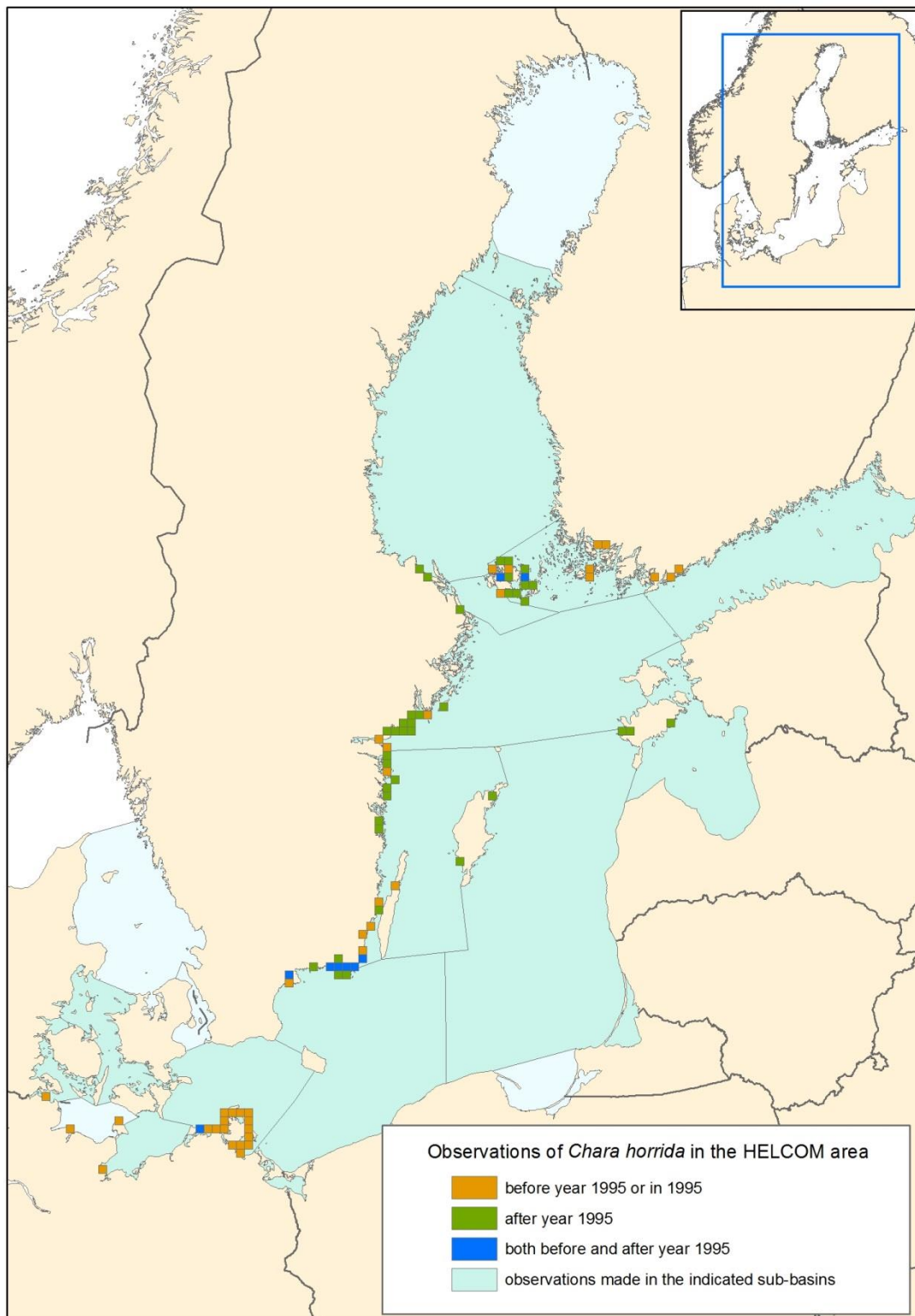


Chara horrida. Photo by Gustav Johansson, Hydrophyta ekologikonsult.

SPECIES INFORMATION SHEET

*Chara horrida***Distribution Map**

The records of the species compiled from the Swedish Species Gateway (www.artportalen.se), Schubert & Blindow (2003), Finnish Museum of Natural History (Botanical Museum), the Finnish database for threatened species (Herтта), the database of Estonian Marine Institute (EMI), the German database for macrophyte occurrences (MARIDATA), and literature.



SPECIES INFORMATION SHEET

Chara horrida

Habitat and Ecology

C. horrida is mainly found from sheltered areas, in most cases on soft bottom and rarely on muddy or sandy substrates. Depth ranges reach from about 0.5 m down to about 3 m. The species is found from relatively narrow salinity range in the Baltic Sea: between 4.5 and 9 psu (Blümel 2003).

Description of major threats

Eutrophication and coastal engineering are regarded as the most important factors for the population decline of *C. horrida*. In the Finnish growing sites, eutrophication has favored colonization by other macrophytes, as well as mass occurrences of filamentous algae. In Germany, the underlying causes of decline and disappearance are related to damming of shallow bays and increased turbidity in the charophyte habitats. In Sweden the population decline is probably related to dredging and other similar activities, as well as to the effects of eutrophication (Blümel 2003).

Assessment justification

The geographic range of *C. horrida* is considered restricted and continually declining, mainly due to eutrophication and coastal engineering (Blindow et al. 2003; Blümel 2003, Gärdenfors 2009). The occurrences are concentrated on the east coast of Sweden, where the number of locations has been estimated to 35 and the area of occupancy (AOO) c. 300 km². For the whole Baltic Sea the corresponding figures are probably 60–70 localities and the AOO c. 300–400 km². The restricted geographic range together with continuing decline of the area of occupancy (AOO), habitat quality, number of locations and number of individuals qualifies for the category Near threatened (NT) according to B2b(ii,iii,iv,v).

Recommendations for actions to conserve the species

Mitigation of eutrophication by controlling local sources of nutrient run-off. Conservation measures such as restrictions on coastal constructions and dredging in shallow coastal lagoons and archipelago areas.

Common names

Denmark: –, Estonia: liht-mändvetikas, Finland: piikkinäkinparta, Germany: –, Latvia: –, Lithuania: –, Poland: –, Russia: Хара оцетиненная, Sweden: raggsträrfse.

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Chara horrida

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Schmidt D, van de Weyer K, Krause W, Kies L, Garniel A, Geissler U, Gutowski A, Samietz R, Schütz W, Vahle H-Ch, Vöge M, Wolff P & Melzer A (1996): Rote Liste der Armeleuchteralgen (Charophyceae) Deutschlands in: Bundesamt für Naturschutz (Hrsg.): Rote Liste gefährdeter Pflanzen Deutschlands. Schriftenreihe für Vegetationskunde 28: 547–567, Bonn

Swedish Species Gateway. Swedish Species Information Centre and Swedish Environmental Protection Agency. Available at www.artportalen.se.

SPECIES INFORMATION SHEET

Crassula aquatica

English name: Water pygmyweed	Scientific name: <i>Crassula aquatica</i>	
Taxonomical group: Class: Magnoliopsida Order: Saxifragales Family: Crassulaceae	Species authority: (L.) Schönland	
Subspecies, Variations, Synonyms: <i>Tillaea aquatica</i> L.	Generation length: 1 year	
Past and current threats (Habitats Directive article 17 codes): Overgrowth of open areas (shores and shallow waters) (A04.03, K04.01), Eutrophication (H01.05), Construction (D01, D03, J02.02.02)	Future threats (Habitats Directive article 17 codes): Overgrowth of open areas (shores and shallow waters) (A04.03, K04.01), Eutrophication (H01.05), Construction (D01, D03, J02.02.02)	
IUCN Criteria: B2ab(ii,iii,iv,v)c(iv)	HELCOM Red List Category:	NT Near Threatened
Global / European IUCN Red List Category NE / DD	Habitats Directive: –	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/RE, Finland –/VU, Germany –/–(in freshwaters: EX (0)), Latvia –/–, Lithuania –/–, Poland –/–, Russia –/VU, Sweden –/NT		

Distribution and status in the Baltic Sea region

This species occurs scattered over Eurasia and North America. According to the Atlas Florae Europaeae (Jalas et al. 1999), the European distribution area of *Crassula aquatica* is clearly concentrated in Finland, Sweden and Russia. Within the Baltic Sea region the species occurs frequently in coastal waters. In Finland *Crassula aquatica* occurs in most of the country (Ryttäri et al. 2012), both in slightly brackish and freshwaters. In Sweden the species can be found along the western coast, Lake Vänern, River Dalälven and on the coast of Norrland in northern Sweden (Swedish Species Information Center 2010).



Crassula aquatica. Photo by Galina Konechnaya.

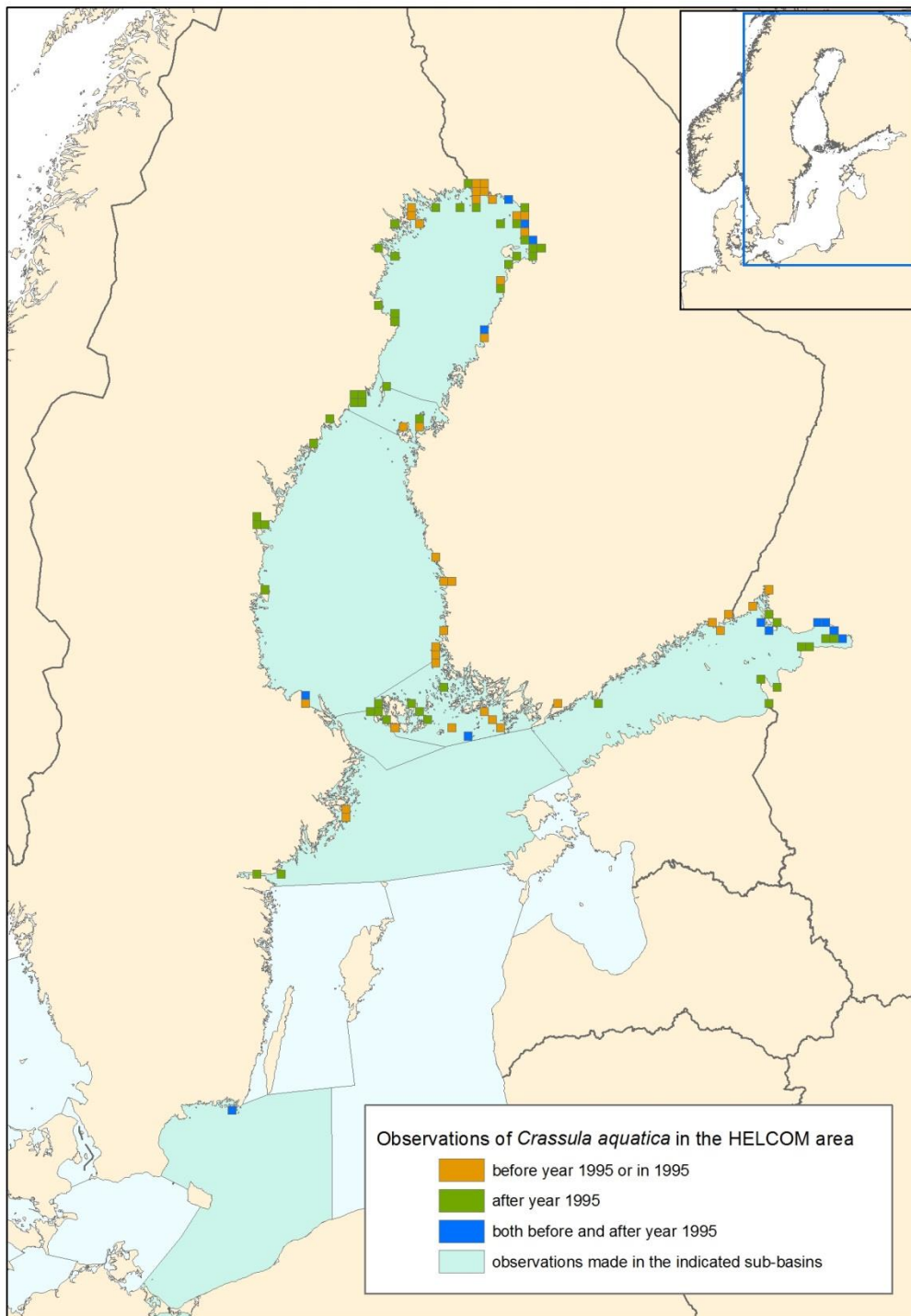
In Russia, in the Leningrad Region, the species is known mainly from the northern and north-western parts (in slightly brackish and freshwaters): Vyborg, Priozersk, Vsevolozhsk, Kingisepp and Lomonosov districts on the coast of the Gulf of Finland (RU7; RU4) and some islands (Zapadnyi Berezovyi Island, Lisiy, Kotlin) (RU3; Glazkova & Tzvelev 2006; Glazkova & Tzvelev 2007; Glazkova 2012). It also occurs along the shores of Lake Ladoga and other large lakes, in the St. Petersburg area between Lakhta and Sestroretsk, and the banks of Neva River (Noskov 2004). In the Baltic Countries *C. aquatica* seems to be extinct – it has not been reported since 1909 from Latvia and 1934 from Estonia (Flora of the Baltic Countries, 1996; Atlas of the Estonian Flora, 2005). *C. aquatica* does not occur in Lithuania and is extinct and categorized as purely freshwater species in Germany.

In the Red List assessments the species has been considered Vulnerable both in Finland and the Leningrad Region, Near Threatened in Sweden, and Extinct in Germany, Latvia, and Estonia.

SPECIES INFORMATION SHEET

*Crassula aquatica***Distribution Map**

The records of the species have been compiled from the Finnish Museum of Natural History (Botanical Museum), Finnish database of threatened species (Hertta), Swedish Species Gateway (www.artportalen.se), and Russian monitoring data and literature. It should be noted that this species also occurs in inland waters at least in Finland and Sweden (occurrences not shown). Many of the previously recorded populations in southern and south-western Finland are currently regarded extinct (Ryttäri et al. 2012).



SPECIES INFORMATION SHEET

Crassula aquatica

Habitat and ecology

Crassula aquatica occurs both in slightly brackish and freshwaters, usually on sandy or less often on sandy-silty and pebbly shores and in shallow waters to a depth of 0.5 m. It can flower and fruit both underwater and on wet sandy and silty banks. Seeds are mainly dispersed by water. Usually it forms rather large patches. The size of populations varies from year to year, depending on predominating winds during the summer. In the eastern Gulf of Finland the species is more abundant when eastern and northern winds dominate and the level of water in this part of the Gulf is lower.

Description of major threats

Crassula aquatica is very sensitive to eutrophication and human activities on the coasts (coastal construction, beach tourism etc.). In Finland and Sweden the plant has been favoured by cattle-grazing of the coastal meadows, which keeps the suitable habitats for *C. aquatica* open. In recent decades the practice of grazing has strongly declined, and the former sites have overgrown both in inland waters and along the coasts of the Baltic Sea. Eutrophication of the sea also enhances overgrowth, as it favours strong competitors such as reeds. In the eastern Gulf of Finland, on the coast between Lakhta and Sestroretsk, the species has almost disappeared due to the draining of the Lakhta bog. The species has also suffered badly from a dam construction in the Neva Bay.

Assessment justification

Within the Baltic Sea area the geographic range of the species is considered restricted and continually declining, mainly due to eutrophication and coastal construction. The species has clearly declined or even disappeared in many former locations, both on the coast and in freshwaters. Recent records are restricted to Sweden, Finland and Russia, e.g. northern part of the Leningrad Region, where the species is declining rapidly. In Finland most of the recent records are from the Bothnian Bay. In Germany, Latvia and Estonia the species is extinct. The area of occupancy (AOO) is estimated to be less than 4000 km². The extent of occurrences (EOO), the number of locations and also most probably the number of mature individuals exceed the thresholds in Red List criteria. The population is fragmented and the locations are scattered. The continuing decline of the population is assumed to concern AOO, the quality of the habitat, number of locations and number of mature individuals. The species meets the criteria for Near Threatened (B2ab (ii,iii,iv, v)c (iv)).

Recommendations for actions to conserve the species

The main conservation measures would be decreasing eutrophication, restriction of coastal construction and beach tourism and restoration of coastal meadows (by cattle grazing). Monitoring of populations and creation of new protected areas are also required.

Common names

Denmark: korsarve, Estonia: vesikas, Finland: paunikko, Germany: Wasser-Dickblatt, Latvia: –, Lithuania: –, Poland: grubosz wodny, uwróć wodna, Russia: Тиллея водная, Sweden: fyrling

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SPECIES INFORMATION SHEET

Nitellopsis obtusa

English name: Starry stonewort	Scientific name: <i>Nitellopsis obtusa</i>	
Taxonomical group: Class: Charophyceae Order: Characeae Family: Charales	Species authority: (Desv. In Loisel.) J. Groves 1919	
Subspecies, Variations, Synonyms: <i>Chara stelligera</i> A. Bauer 1829 <i>Tolypellopsis stelligera</i> (Bauer) Migula	Generation length: –	
Past and current threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Water traffic (G01.01.01), Construction (D03, J02.02.02, J02.11)	Future threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Water traffic (G01.01.01), Construction (D03, J02.02.02, J02.11)	
IUCN Criteria: B2a	HELCOM Red List Category:	NT Near Threatened
Global / European IUCN Red List Category NE / NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/–, Finland Threatened status in the Nature Conservation Decree Annex 4/VU, Germany –/–(in freshwaters 3, Vulnerable), Latvia –/–, Lithuania –/–, Poland –/–, Russia –/–, Sweden –/VU (only found in freshwaters).		

Distribution and status in the Baltic Sea region

Nitellopsis obtusa is primarily a freshwater charophyte that can also live in brackish water. It is a borderline case in regard to whether it should or should not be included in the HELCOM Red List assessment. It was included due to its northern distribution which is mainly in the Baltic Sea in Finland. In addition to Finland, it has been found in the Baltic Sea at least in Lithuania and Russia. In Sweden and Germany the species is only known to occur in fresh water.

In Finland *N. obtusa* has been found in slightly brackish water locations along the south coast and Åland Islands, where the species also occurs in several freshwater lakes. In most of the former locations on the eastern part of the south coast of Finland, the species has either disappeared or decreased. This is probably due to dredging or colonization by Phragmites. There are recent observations of the species in



Nitellopsis obtusa. Photo by <http://redbook-ua.org>.

SPECIES INFORMATION SHEET

Nitellopsis obtusa

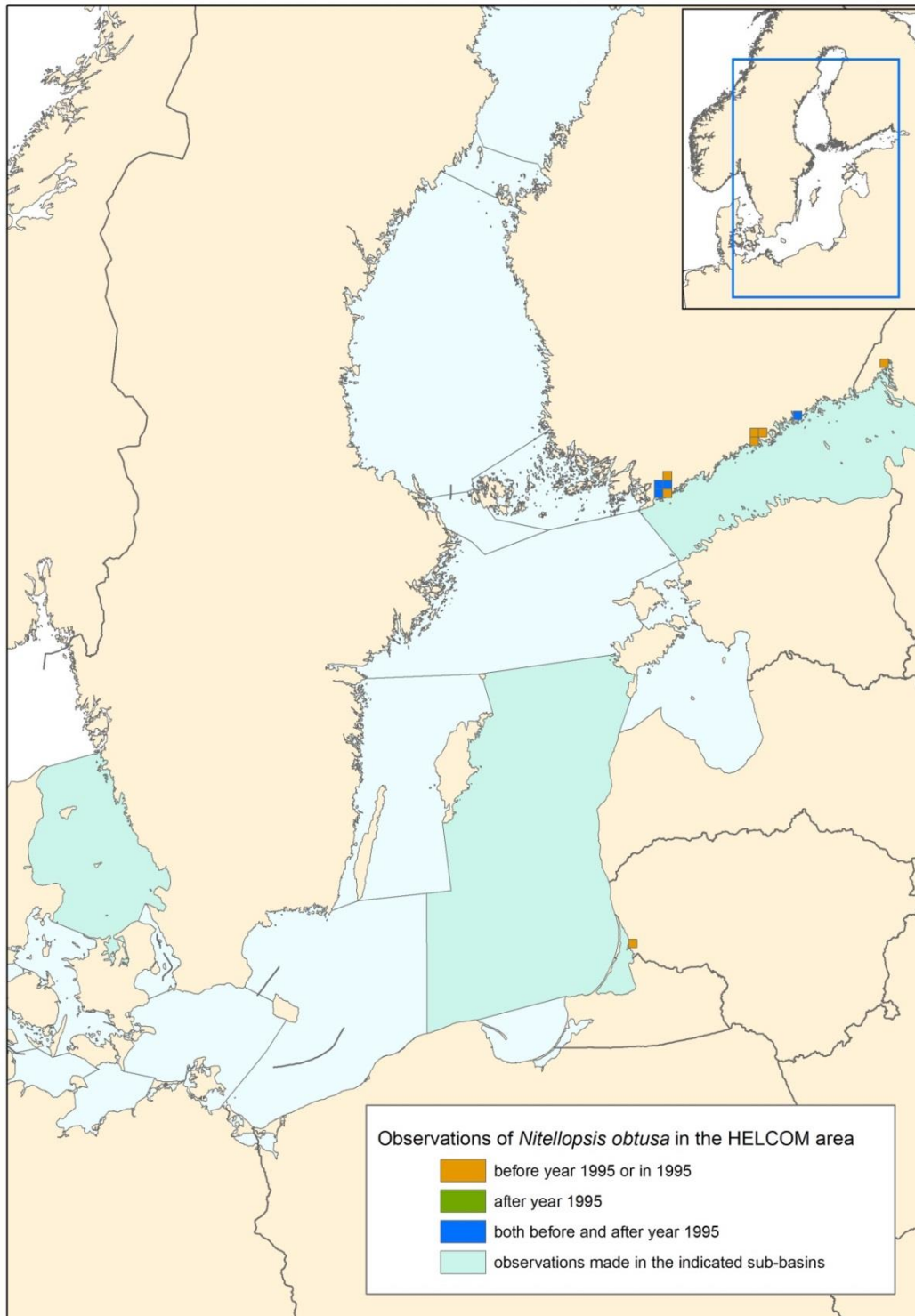
brackish water in the Pojo bay (Pohjanpitäjänlahti) and Tammissaari area.

In Lithuania, *N. obtusa* was found in 1950 and 1957 in sheltered locations of Knaupas Bay (Curonian Lagoon) and at the mouth of the Nemunas River. In later investigations the species was mentioned as abundant in Knaupas Bay, but recently (1997–2002) it has not been recorded (Sinkeviciene, 2004). In Russia the species has disappeared from the river Neva but it still occurs in a lake in the southern part of the Leningrad Region and has also been found in the Vyborg Bay in 1988. From Denmark there is a finding from 1917 from the Grund Fjord, Kattegat region (Urbaniak 2003), but it has not been documented by herbarium material and no later findings have been made. In the Finnish Red List the species has been classified as VU. (Henricson & Oulasvirta 2007, Langangen et al. 2002, Urbaniak 2003, Tore Lindholm, ÅA, pers. comm.).

SPECIES INFORMATION SHEET

*Nitellopsis obtusa***Distribution Map**

The records of the species compiled from the Finnish Museum of Natural History (Botanical Museum), Urbaniak (2003), (Sinkeviciene 2004), and Henriksson & Oulasvirta (2007). The old (1917) Danish occurrence is reported from Grund Fjord, which is connected to Kattegat.



SPECIES INFORMATION SHEET

Nitellopsis obtusa

Habitat and ecology

Nitellopsis obtusa tolerates salinities up to approx. 5 ‰ (Winter et al. 1990) and it has been found growing in 0.5–2.0 psu in Denmark, 0.3–2.5 psu in Finland and in 0–8 psu in Lithuania (Urbaniak 2003). It is found in sheltered areas along with Phragmites belts and other abundant macrophyte vegetation. It grows on bottom sediments consisting of mud, clay, sand and stones (in Finland) and on sandy and silty sediments (in Lithuania). It's depth range is between 0.8 and 3m (in Finland) (Langangen et al. 2002, Urbaniak 2003). According to Koistinen & Munsterhjelm (2001) the species seems to be favoured by eutrophication as it exhibits large occurrences in Pojo Bay and areas surrounding Tammisaari.

Description of major threats

Anthropogenic impacts threatening the species are construction of shipping lanes and ports, estuarine and coastal dredging and boat traffic. These activities directly destroy the habitat suitable for the species.

Assessment justification

The population is geographically restricted in the Baltic Sea and it has only a few recent locations. However, there is no evidence of continuing decline even though both the extent of occurrences (EOO) and the area of occupancy (AOO) have decreased since the 1950s. Furthermore, it has been suggested (Koistinen & Munsterhjelm 2001) that unlike most other charophytes, this species may actually benefit from eutrophication. However, other anthropogenic threats still affect the species negatively. The species is categorized as Near Threatened due to the restricted AOO and the low number of locations (B2a).

Recommendations for actions to conserve the species

Conservation of habitat and avoidance of anthropogenic impacts such as dredging and boat traffic.

Common names

Denmark: Stjernetråd, Estonia: –, Finland: tähtimukulaparta, Germany: –, Latvia: –, Lithuania: žvaigždėtasis maurašakis, Poland: krynicznicza tępa, Russia: Нтеллописис Притуплённый, Sweden: stjärnslinke

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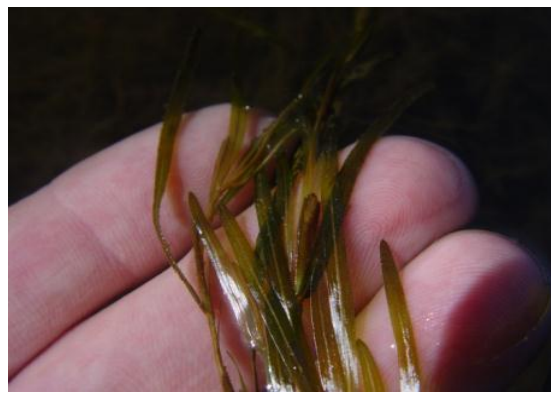
SPECIES INFORMATION SHEET

Potamogeton friesii

English name: Flatstalked pondweed, Fries' pondweed	Scientific name: <i>Potamogeton friesii</i>	
Taxonomical group: Class: Liliopsida Order: Alismatales Family: Potamogetonaceae	Species authority: Rupr.	
Subspecies, Variations, Synonyms: <i>Potamogeton mucronatus</i> Schrad. ex Sond	Generation length: –	
Past and current threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D03, J02.02.02)	Future threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Construction (D03, J02.02.02)	
IUCN Criteria: B2a	HELCOM Red List Category:	NT Near Threatened
Global / European IUCN Red List Category NE / LC	Habitats Directive: –	
Protection and Red List status in HELCOM countries: Denmark –/VU, Estonia –/LC, Finland Threatened status in the Nature Conservation Decree Annex 4 /NT, Germany –/(in freshwaters 2, Endangered), Latvia –/, Lithuania –/, Poland –/, Russia –/, Sweden –/NT		

Distribution and status in the Baltic Sea region

In the Finnish waters of the Baltic Sea *Potamogeton friesii* is found in the northern coast of the Gulf of Finland and in the Bothnian Bay. There have also been recent findings of the species on the Åland Islands but due to land up-heaval, the former bays are becoming lakes and currently have salinity of less than 2 psu (Tore Lindholm, ÅA, pers. comm.). Previously the species has been found at the Pojo Bay but there are no new observations of it during the 2000s. In Sweden the species is known to occur in the northernmost part of the Bothnian Bay (Forsberg & Pekkari 2000). In Finland *Potamogeton friesii* is classified as NT (Rassi et al. 2010). In Russia the species is only found in fresh water.

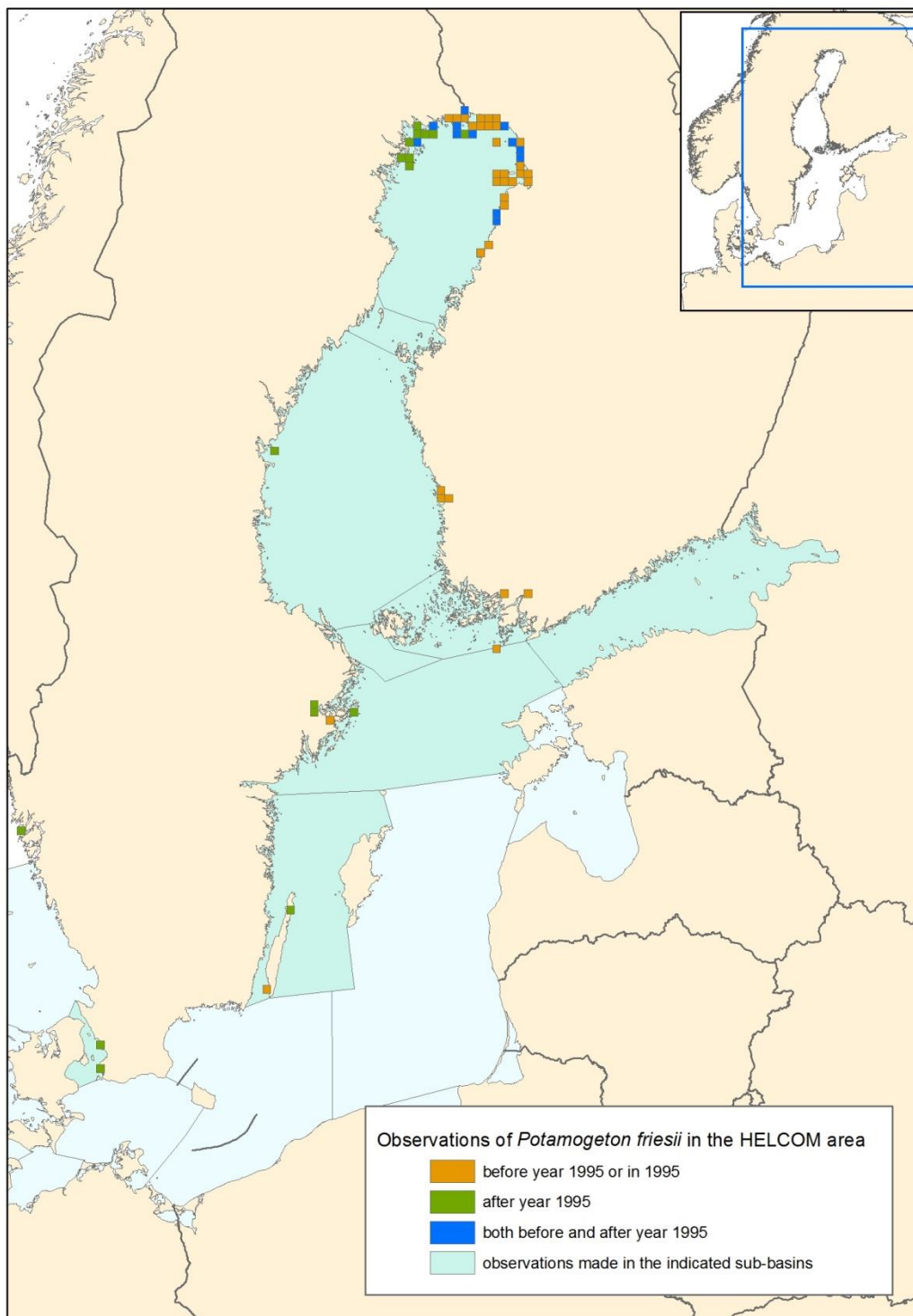


Potamogeton friesii. Photos by Don Cameron, Maine Natural Areas Program.

SPECIES INFORMATION SHEET

*Potamogeton friesii***Distribution map**

The records of species compiled from the Swedish Species Gateway (www.artportalen.se) and from the Finnish database of threatened species (Herтта). The species occurs also in inland waters, e.g. in Russia, southern and central Sweden and northern Finland (occurrences not shown on the map). It is possible that not all of the occurrences included in the map represent brackish water locations, e.g. the sites on the west coast of Sweden may also represent lakes/streams that are just close to the coast.



SPECIES INFORMATION SHEET

Potamogeton friesii

Habitat and ecology

Potamogeton friesii can be found in brackish water bays, coastal lagoons and shallow nutrient rich neutral lakes (Hämet-Ahti et al. 1998, Haeggström & Haeggström 2008).

Description of major threats

Anthropogenic impacts continue to threaten the species. Among these are eutrophication, construction of shipping lanes and ports, estuarine and coastal dredging and boat traffic which all directly destroy habitat suitable for the species.

Assessment justification

The species is geographically restricted in the Baltic Sea. The number of locations is limited or the overall population is severely fragmented. Even though the species occurs also in inland waters, e.g. in Finland and Sweden, it is not likely that there would be significant gene flow between the coastal and inland subpopulations. The Baltic Sea population might be considered also continuingly declining, at least in the southern locations. In the Baltic Sea, the area of occupancy (AOO) is estimated to be less than 500 km². The species is categorized as Near Threatened (NT).

Recommendations for actions to conserve the species

The species is quite rare and its ecology is not well known. Therefore more research and data is needed for recommendations.

Common names

Denmark: –, Estonia: ogaterav penikeel, Finland: otalehtivita, Germany: –, Latvia: –, Lithuania: dygliaviršūnė plūdė, Poland: rdestnica szczeciolistna, Russia: Рдест Фриза, Sweden: uddnate

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SPECIES INFORMATION SHEET

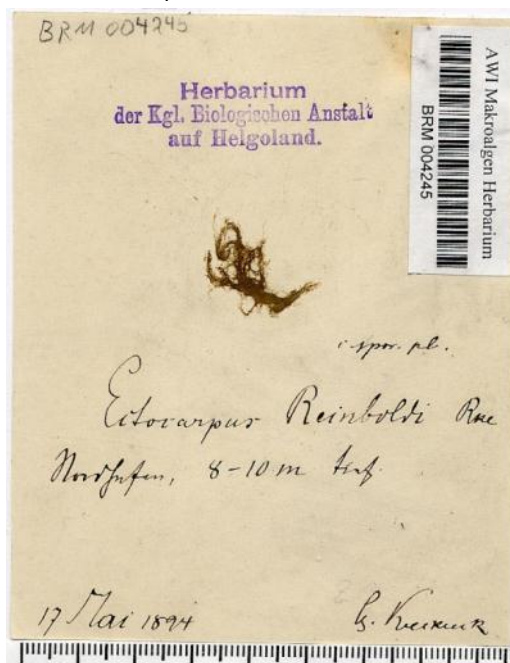
Botrytella reinboldii

English name: –	Scientific name: <i>Botrytella reinboldii</i>	
Taxonomical group: Class: Phaeophyceae Order: Ectocarpales Family: Chordariaceae	Species authority: (Reinke) Kornmann & Sahling 1988	
Subspecies, Variations, Synonyms: <i>Ectocarpus reinboldii</i> Reinke 1892, <i>Polytretus reinboldii</i> (Reinke) Sauvageau 1900	Generation length: probably annual	
Past and current threats (Habitats Directive article 17 codes): Unknown (U)	Future threats (Habitats Directive article 17 codes): Unknown (U)	
IUCN Criteria: –	HELCOM Red List Category:	DD Data Deficient
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, <u>Germany</u> –/–, <u>Latvia</u> –/–, <u>Lithuania</u> –/–, <u>Poland</u> –/–, <u>Russia</u> –/–, <u>Sweden</u> –/DD		

Distribution and status in the Baltic Sea region

Distribution area of *B. reinboldii* is the western Baltic Sea with records in Sweden and Denmark. It has never been found south of the Belt Sea. Outside the Baltic this species is also rarely recorded. It is distributed in the northern Atlantic with one old record from Helgoland (Reinke 1892 in Kornmann & Sahling 1988), some records from the British Isles (Newton 1931) and one record from Norway (Svalbard). The species can also be found in Asia – China and Japan (www.algaebase.org).

All Baltic occurrences are restricted to Denmark and the west coast of Sweden. All except one Danish record refer to findings before 1995. In Sweden there are two records from two geographically separated locations (Fladengrund and Göteborg). In Denmark the species has been found five times from four geographically separated locations (Skagen – two records, Frederikshavn, Samsö and north of Lolland). The only recent record is from a location north of Lolland (Nielsen 2005).

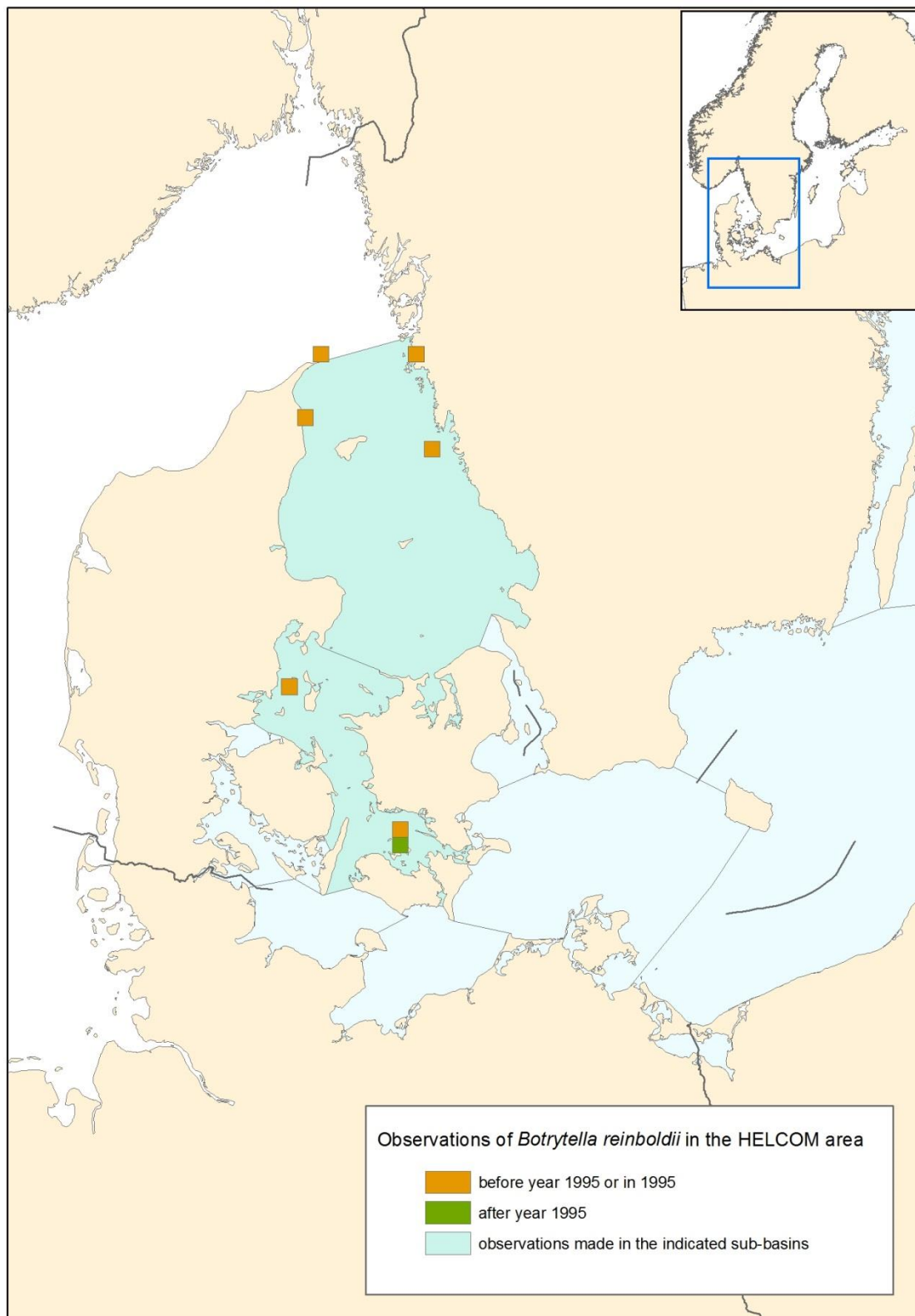


Herbarium sheet of *Botrytella reinboldii* from Helgoland (Biologische Anstalt Helgoland, Alfred-Wegener Institute).

SPECIES INFORMATION SHEET

*Botrytella reinboldii***Distribution map**

The records of species compiled from the Danish national database for marine data (MADS), the database of the Swedish Species Information Centre, Botanical Museum Lund (LD), and Uppsala Museum of Evolution Herbarium (UPS). The northernmost observation is very close to the border of the HELCOM region.



SPECIES INFORMATION SHEET

Botrytella reinboldii

Habitat and ecology

Due to the rarity of *Botrytella reinboldii*, little is known about its habitat preferences or ecology. The species has been found epilithic on shell bottoms as well as on pebble/gravel bottoms but also epiphytic on other algae. It is a marine alga, which seems to tolerate brackish water to a limited degree (~ 18 psu). Most observations are from spring time (May) but there is also one record from August. Depth distribution seems to range from 1 to 12 m.

Description of major threats

Not known.

Assessment justification

The observational data on the species is very scarce both within the Baltic Sea and the neighbouring marine areas. The species is small and easily overlooked. It is not known how many occurrences the species may have in the Baltic Sea area, and whether it has declined or not in recent decades. The species is categorized as Data Deficient.

Recommendations for actions to conserve the species

The effort for looking for this species should be increased in order to find out more about its distribution and occurrences, habitats, and potential trends in its population.

Common names

Denmark: –, Estonia: –, Finland: –, Germany: –, Latvia: –, Lithuania: –, Poland: –, Russia: –, Sweden: druvgryn.

References

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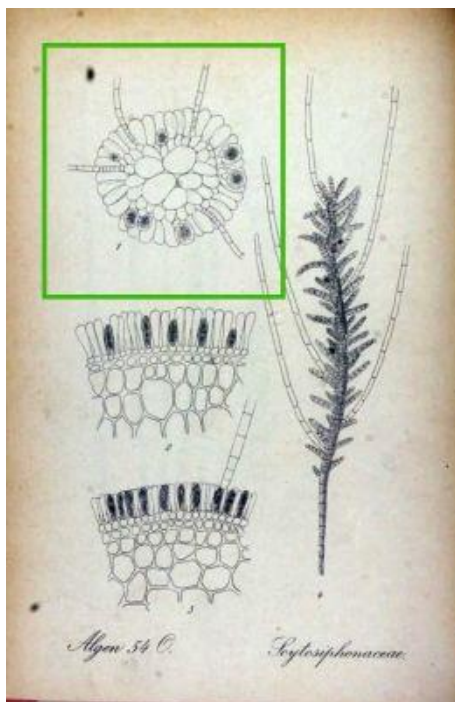
SPECIES INFORMATION SHEET

Delamarea attenuata

English name: –	Scientific name: <i>Delamarea attenuata</i>	
Taxonomical group: Class: Phaeophyceae Order: Ectocarpales Family: Chordariaceae	Species authority: (Kjellman) Rosenvinge 1893	
Subspecies, Variations, Synonyms: –	Generation length: probably 1	
Past and current threats (Habitats Directive article 17 codes): Unknown (U)	Future threats (Habitats Directive article 17 codes): Unknown (U)	
IUCN Criteria: –	HELCOM Red List Category:	DD Data Deficient
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, <u>Germany</u> –/–, <u>Latvia</u> –/–, <u>Lithuania</u> –/–, <u>Poland</u> –/–, <u>Russia</u> –/–, <u>Sweden</u> –/DD		

Distribution and status in the Baltic Sea region

Delamarea attenuata is a northern marine species of brown algae. In the Baltic Sea region it has only been found in Kattegat, Great Belt and Little Belt. The most recent records are from 1990s and they concern all the three subbasins. The species is easily overseen but is probably also genuinely rare, as it is rare also in Norway.

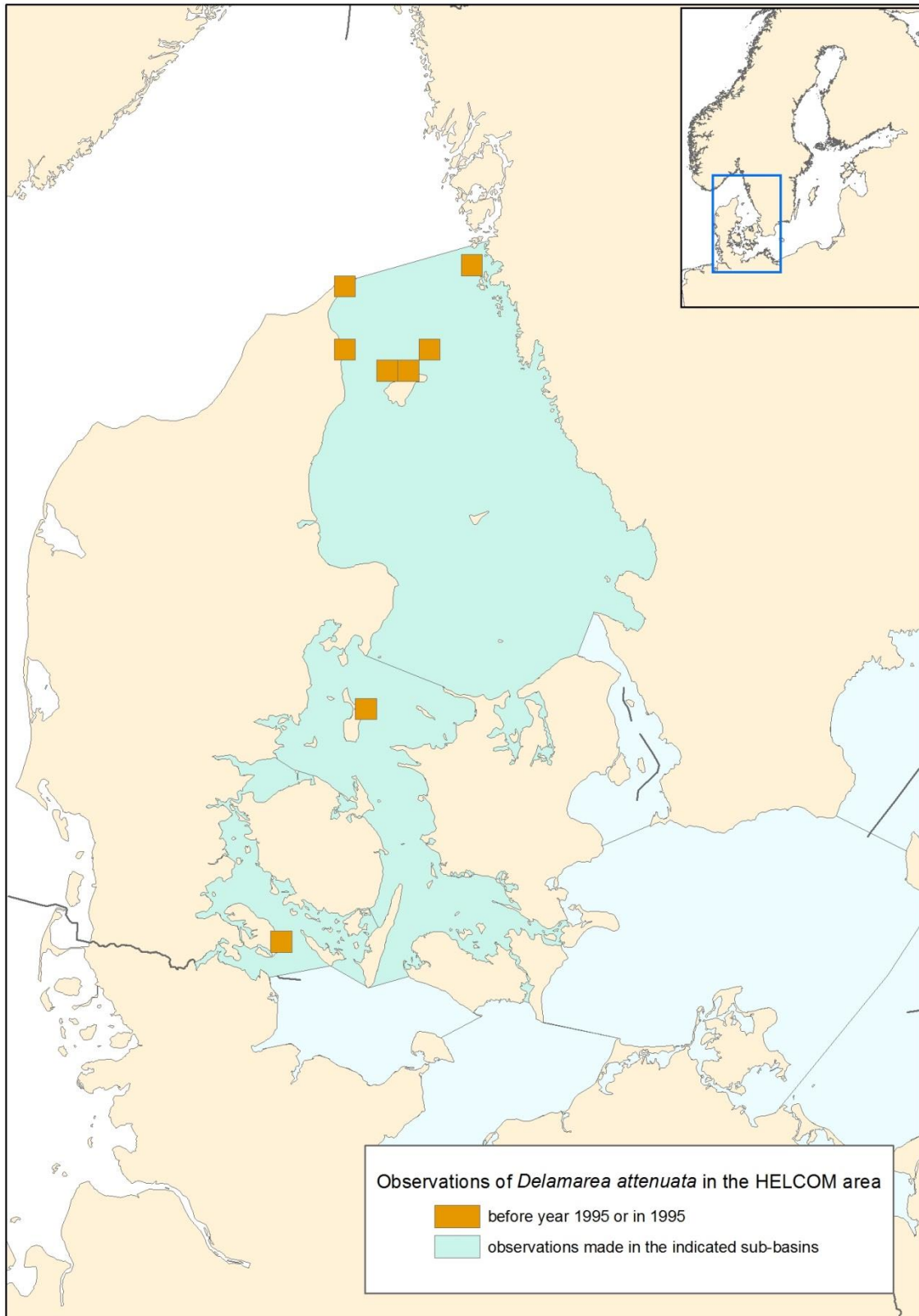


Delamarea attenuata. Source: www.biolib.de

SPECIES INFORMATION SHEET

*Delamarea attenuata***Distribution map**

The records of species compiled by Gustav Johansson from Swedish and Danish literature and/or databases, e.g. from Danish national database for marine data (MADS).



SPECIES INFORMATION SHEET

Delamarea attenuata

Habitat and Ecology

A northern, marine species that can be found epilithic, epiphytic and epizootic (on bryozoans) down to 10 m depth.

Description of major threats

Raised temperature due to climate change might be a threat for this species.

Assessment justification

There are only four records of *D. attenuata* from Kattegat, Great Belt and Little Belt from 1990s. Additionally there are about ten older records from Kattegat. It is a northern marine species that is rare also in Norway. It can be easily overseen and there is not enough data to evaluate any possible trends. The species is categorized as Data Deficient (DD).

Recommendations for actions to conserve the species

The knowledge on the distribution and habitats of this species, as well as potential trends in its population, should be improved before any recommendations can be given.

Common names

Denmark: –, Estonia: –, Finland: –, Germany: –, Latvia: –, Lithuania: –, Poland: –, Russia: –, Sweden: småsnöre.

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SPECIES INFORMATION SHEET

Helminthora divaricata

English name: –	Scientific name: <i>Helminthora divaricata</i>	
Taxonomical group: Class: Florideophyceae Order: Nemaliales Family: Liagoraceae	Species authority: (C.Agardh) J.Agardh 1852	
Subspecies, Variations, Synonyms: <i>Helminthora stackhousei</i> (Clemente) Cremades & Pérez-Cirera, 1990, <i>Dudresnaya divaricata</i> (C.Agardh) J.Agardh, 1852, <i>Achrochaetium polyidis</i> (Rosenvinge) Børgesen, 1915	Generation length: probably 1	
Past and current threats (Habitats Directive article 17 codes): Unknown (U)	Future threats (Habitats Directive article 17 codes): Unknown (U)	
IUCN Criteria: –	HELCOM Red List Category:	DD Data Deficient
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, <u>Germany</u> –/–, <u>Latvia</u> –/–, <u>Lithuania</u> –/–, <u>Poland</u> –/–, <u>Russia</u> –/–, <u>Sweden</u> –/DD		

Distribution and status in the Baltic Sea region

Helminthora divaricata is a marine species of red algae that is apparently rare in the HELCOM region. Its only records are from the northern Kattegat. There are two rather recent records from the 1990s and two old ones from the year 1894. In Sweden it has been found only from the Skagerrak and in Norway from the west coast.

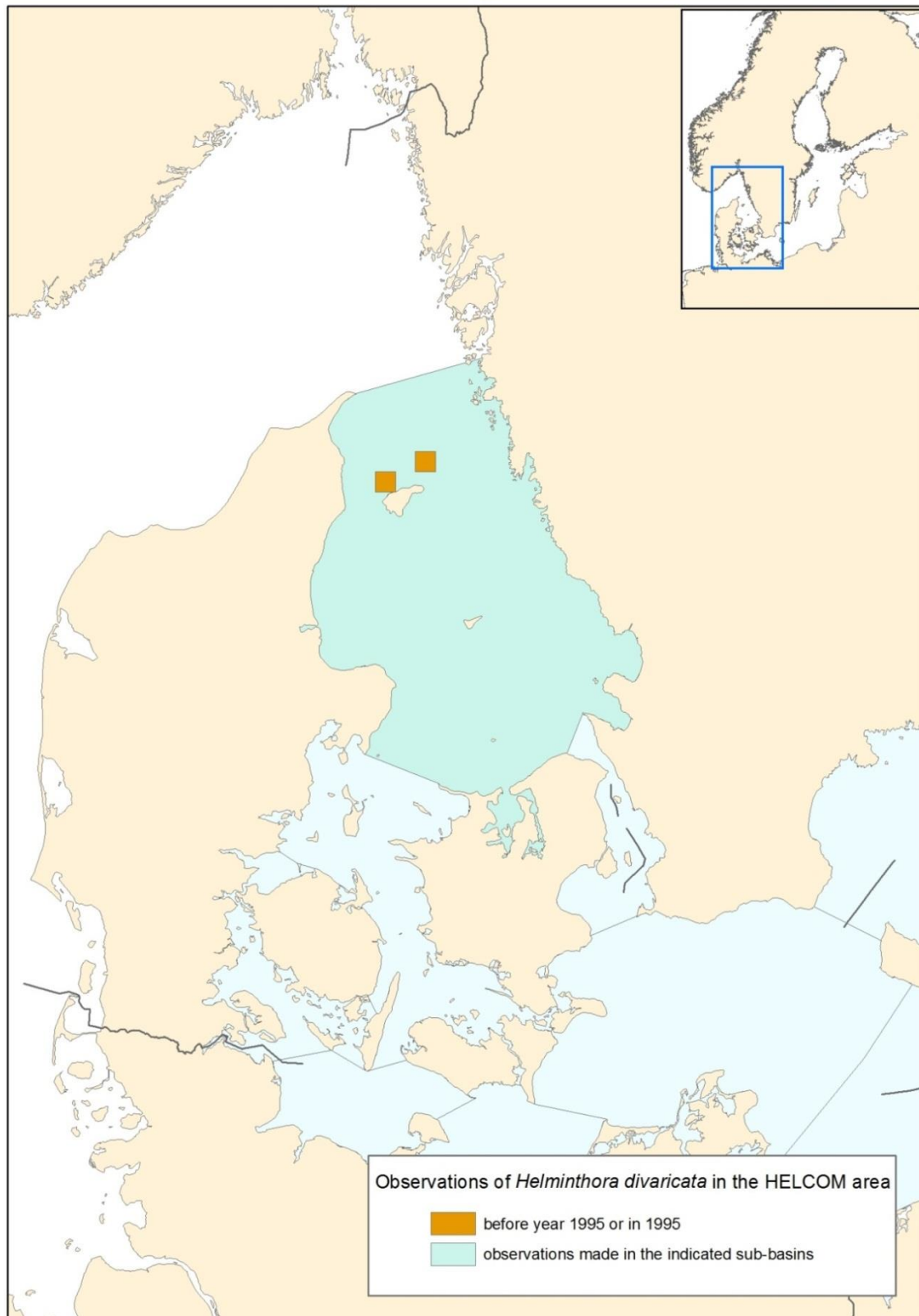


Helminthora divaricata on *Polyides rotundus*. Finavarra, Co Clare, Ireland; AlgaeBase ©M.D. Guiry.

SPECIES INFORMATION SHEET

*Helminthora divaricata***Distribution map**

The records of species compiled from the Danish national database for marine data (MADS).



SPECIES INFORMATION SHEET

Helminthora divaricata

Habitat and ecology

Helminthora divaricata has heteromorphic alternation of generations. Gametophytes are attached by discoid holdfast and can grow up to 25 cm in height, whereas tetrasporophytes are microscopic. The Danish and Swedish records of the gametophyte have been epiphytes on *Polyides rotundus* and *Furcellaria lumbicalis* but it can also be found epilithically. The microscopic tetrasporophyte grows endophytically in *P. rotundus*.

Description of major threats

Threats not known.

Assessment justification

The species has been found only from two locations in the HELCOM region in the northern Kattegat. It is rare also along the North Sea and Norwegian coast and more common in the western parts of the British Isles. The Kattegat records are probably on the eastern limit of its marine distribution. The species may be easily overlooked, at least in its tetrasporophytic phase. The information available is insufficient to infer anything about population trends. The species is categorized as Data Deficient (DD).

Recommendations for actions to conserve the species

The knowledge on the distribution and ecology of the species, as well as on the trends in its population, should be improved before any specific recommendations can be given.

Common names

Denmark: –, Estonia: –, Finland: –, Germany: –, Latvia: –, Lithuania: –, Poland: –, Russia: –, Sweden: vinkelslemtråd

References

- Danish Biodiversity Information Facility, Botanical Museum, Copenhagen, the Phycology Herbarium.
 Johansson, G., Aronsson, M., Bengtsson, R., Carlson, L., Kahlert, M., Kautsky, L., Kyrkander, T., Wallentinus, I. & Willén, E. (2010). Alger – Algae. Nostocophyceae, Phaeophyceae, Rhodophyta & Chlorophyta. In Gärdenfors, U. (ed.) Rödlistade arter i Sverige 2010 – The 2010 Red List of Swedish Species. ArtDatabanken, SLU, Uppsala. P. 223–229. Red List categories available also at <http://www.artfakta.se/GetSpecies.aspx?SearchType=Advanced>
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SPECIES INFORMATION SHEET

Myriocladia lovenii

English name: –	Scientific name: <i>Myriocladia lovenii</i>	
Taxonomical group: Class: Phaeophyceae Order: Ectocarpales Family: Chordariaceae	Species authority: J. Agardh, 1841	
Subspecies, Variations, Synonyms: –	Generation length: annual (expert judgement)	
Past and current threats (Habitats Directive article 17 codes): Unknown (U)	Future threats (Habitats Directive article 17 codes): Unknown (U)	
IUCN Criteria: –	HELCOM Red List Category:	DD Data Deficient
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, <u>Germany</u> –/–, <u>Latvia</u> –/–, <u>Lithuania</u> –/–, <u>Poland</u> –/–, <u>Russia</u> –/–, <u>Sweden</u> –/DD		

Distribution and status in the Baltic Sea region

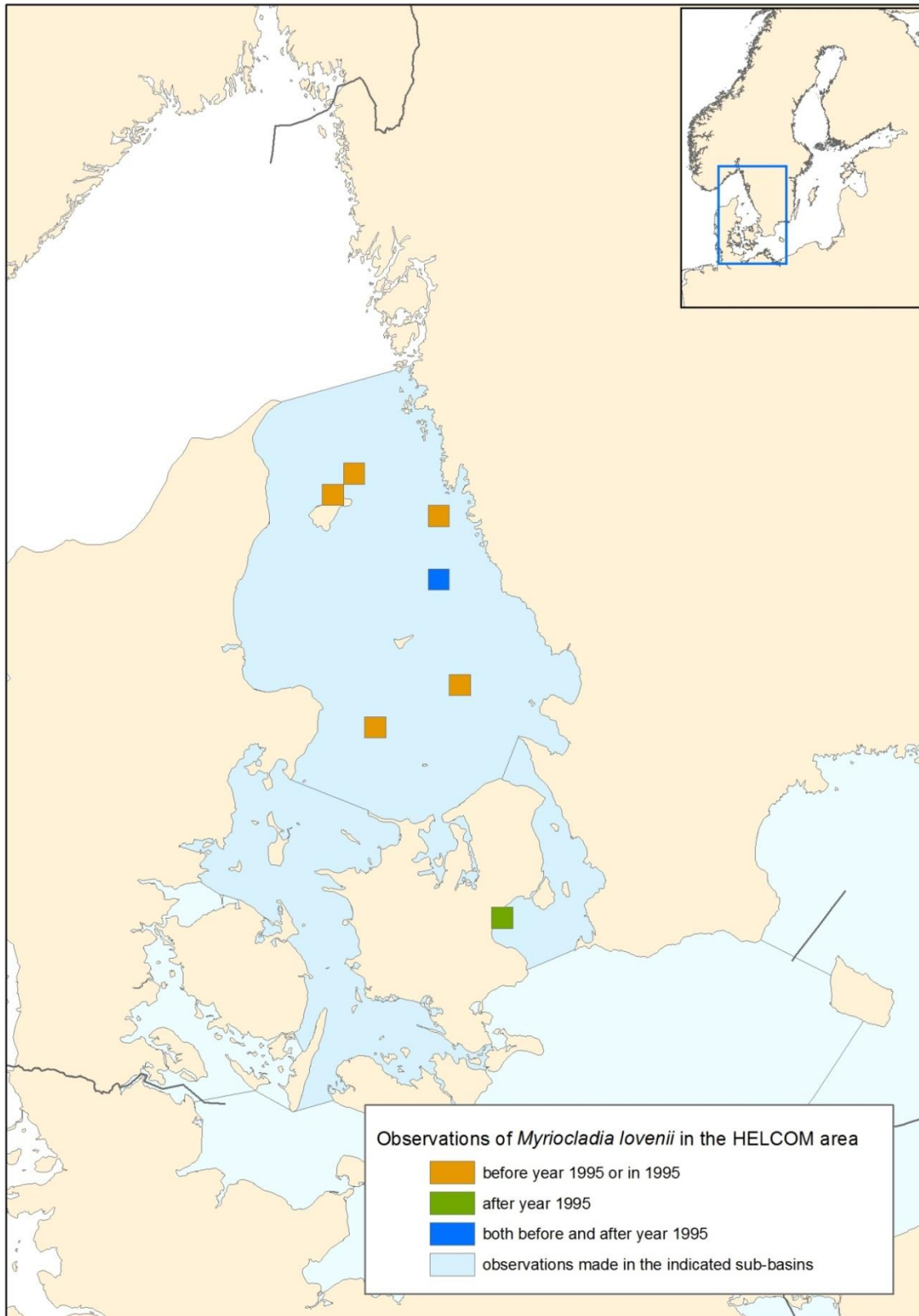
Distribution area of *Myriocladia lovenii* is the southwestern Baltic Sea with records in Sweden and Denmark. It has never been found south of the Belt Sea. This species appears to be rare (or overlooked) also outside the HELCOM area. Very few records exist from the British Isles, Ireland, France, and Norway. The species occurs in North America (Alaska).

All Baltic occurrences are restricted to Denmark and the west coast of Sweden. There are only two records from 1995 or newer (one in Sweden and one in Denmark). In Sweden there are four records from three geographically separated locations (Fladengrund, Lilla Middelgrund and Stora Middelgrund). In Denmark there are altogether six records from four locations.

SPECIES INFORMATION SHEET

*Myriocladia lovenii***Distribution map**

The records of species compiled from the Danish national database for marine data (MADS) and from the observational database of the Swedish Species Information Centre.



SPECIES INFORMATION SHEET

Myriocladia lovenii

Habitat and ecology

Due to the rarity of *M. lovenii* little is known about its habitat or ecology. It is a rare tiny filamentous brown algae, growing epiphytic on *Laminaria* blades but also epilithic on stones. It is a marine alga mainly found from spring to early summer. Depth distribution apparently ranges from 9 to 19 m.

Description of major threats

Not known.

Assessment justification

The species appears to be rare both in the Baltic Sea and elsewhere. However, it may also be easily overlooked due to its small size. The potential number of occurrences is not known, and only two records exist after 1994. The species is categorized as Data Deficient (DD).

Recommendations for actions to conserve the species

The effort for looking for this species should be increased in order to find out more about its distribution and occurrences, habitats, and potential trends in its population.

Common names

Denmark: slimtrevl, Estonia: –, Finland: –, Germany: –, Latvia: –, Lithuania: –, Poland: –, Russia: –, Sweden: –

References

- Algaebase 2012. Available at <http://www.algaebase.org>
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SPECIES INFORMATION SHEET

Rosenvingiella constricta

English name: –	Scientific name: <i>Rosenvingiella constricta</i>	
Taxonomical group: Class: Trebouxiophyceae Order: Prasiolales Family: Prasiolaceae	Species authority: (Setchell & N.L.Gardner) P.C.Silva 1957	
Subspecies, Variations, Synonyms: <i>Gayella constricta</i> Setchell & N. L. Gardner 1917	Generation length:	
Past and current threats (Habitats Directive article 17 codes): Unknown (U)	Future threats (Habitats Directive article 17 codes): Unknown (U)	
IUCN Criteria: –	HELCOM Red List Category:	DD Data Deficient
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, <u>Germany</u> –/–, <u>Latvia</u> –/–, <u>Lithuania</u> –/–, <u>Poland</u> –/–, <u>Russia</u> –/–, <u>Sweden</u> –/DD		

Distribution and status in the Baltic Sea region

Rosenvingiella constricta is a northern species that occurs elsewhere in colder parts of the Atlantic and Pacific Oceans. Within the HELCOM area there is only an old record (1911) from Stora Karlsö (Western Gotland Basin), and additionally a record from the northern Kattegat according to the Danish checklist of algae (Nielsen 2005). There is a great risk that this species is overlooked in inventories.

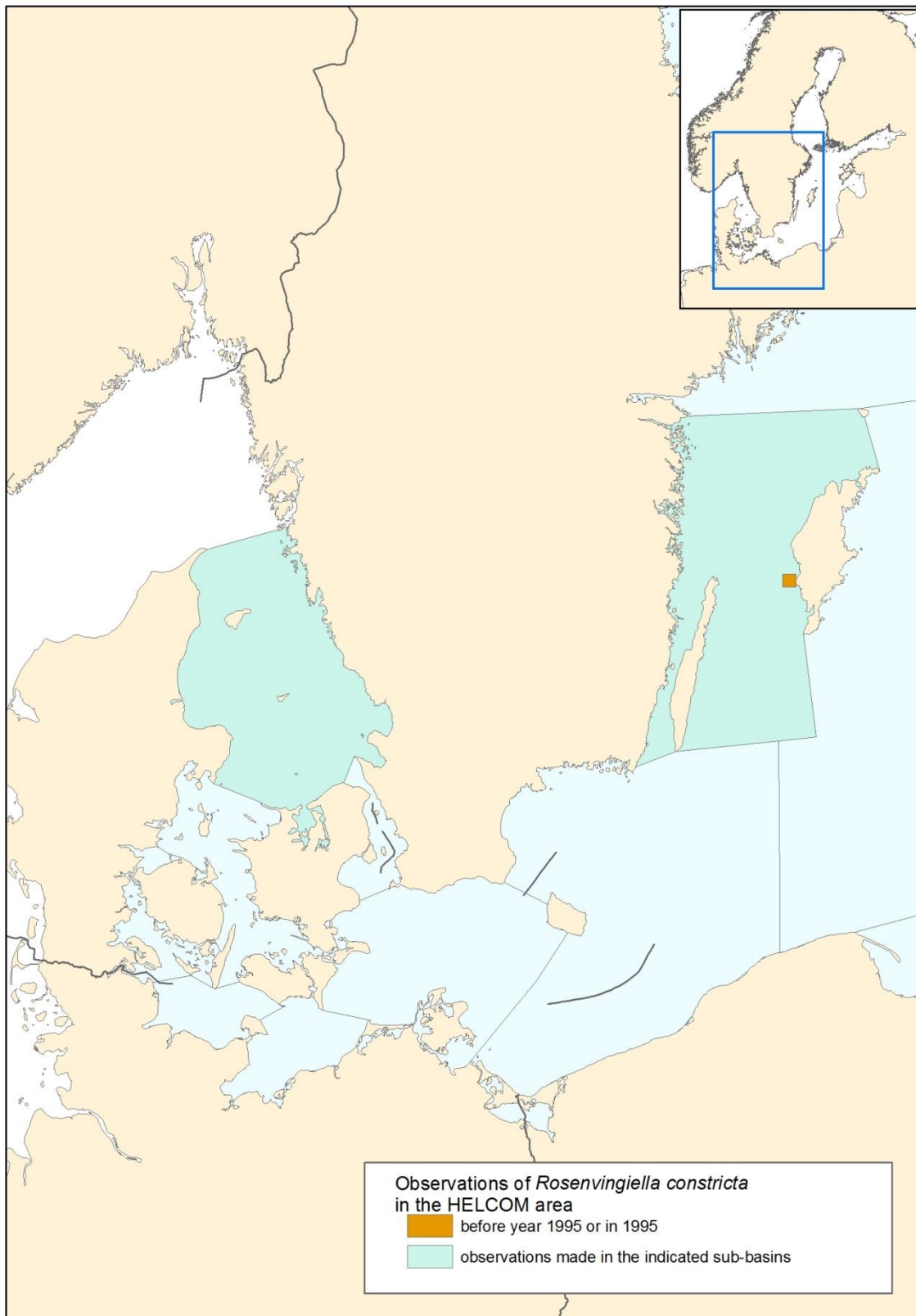


Rosenginvielliella constricta in the upper intertidal, Tasmania; AlgaeBase ©M.D. Guiry.

SPECIES INFORMATION SHEET

*Rosenvingiella constricta***Distribution map**

The records of species compiled from Waern (1952) and Nielsen (2005).



SPECIES INFORMATION SHEET

Rosenvingiella constricta

Habitat and Ecology

R. constricta grows epilithically in the supralittoral zone, sometimes several meters above the sea surface. It is found together with Prasiola-species and is probably favoured by bird droppings.

Description of major threats

Not known.

Assessment justification

R. constricta has very few records in the Baltic Sea and it grows in a habitat that is seldom investigated. Relatively few records around the world also indicate that it might be overlooked. The information available is insufficient to infer anything about population trends. The species is categorized as Data Deficient.

Recommendations for actions to conserve the species

The knowledge of the distribution and possible population trends of the species should be improved before any specific recommendations can be given.

Common names

Denmark: –, Estonia: –, Finland: –, Germany: –, Latvia: –, Lithuania: –; Poland: –, Russia: –, Sweden: bred snörpråd

References

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SPECIES INFORMATION SHEET

Stypocaulon scoparium

English name: –	Scientific name: <i>Stypocaulon scoparium</i>	
Taxonomical group: Class: Phaeophyceae Order: Sphacelariales Family: Stypocaulaceae	Species authority: (Linnaeus) Kützing 1843	
Subspecies, Variations, Synonyms: <i>Halopteris scoparia</i> (Linnaeus) Sauvageau 1904	Generation length: –	
Past and current threats (Habitats Directive article 17 codes): Unknown (U)	Future threats (Habitats Directive article 17 codes): Unknown (U)	
IUCN Criteria: –	HELCOM Red List Category:	DD Data Deficient
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, <u>Germany</u> 0 (Extinct), <u>Latvia</u> –/–, <u>Lithuania</u> –/–, <u>Poland</u> –/–, <u>Russia</u> –/–, <u>Sweden</u> –/DD		

Distribution and status in the Baltic Sea region

There are no recent records of *Stypocaulon scoparium* in the Baltic Sea. There are several records from the eastern coast of Sweden (Bothnian Sea, Åland Sea, Northern Baltic Proper, Western and Eastern Gotland Sea) from the 1950s. Some of these localities have been revisited with no recoveries. There are also some older records from Finland (Gulf of Finland), Germany (Kiel Bay), Denmark (Kattegat, Great and Little Belt) and the Swedish west coast (Kattegat, The Sound).

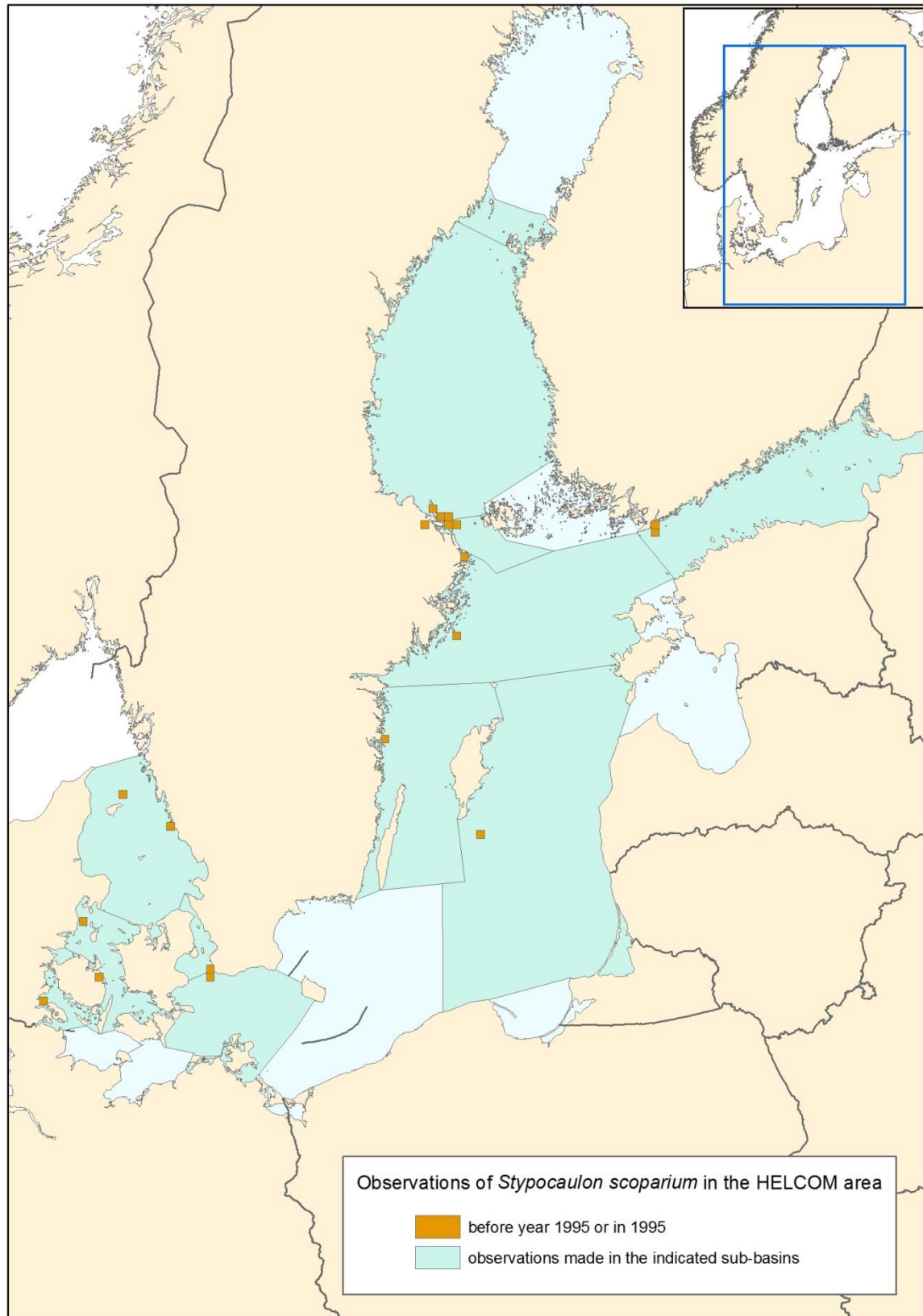


Stypocaulon scoparium. Photo by Bárbara Ignacio.

SPECIES INFORMATION SHEET

*Stypocaulon scoparium***Distribution map**

The records of species compiled from literature and from the Danish Biodiversity Information Facility (Botanical Museum, Copenhagen).



SPECIES INFORMATION SHEET

Stypocaulon scoparium

Habitat and ecology

S. scoparium is a marine species normally growing epilithically. However, most records in the HELCOM area have been "loose-and-entangled", especially the large material found by Mats Wærn in the Öregrund archipelago. Apparently this species can tolerate salinities down to 5 psu.

Description of major threats

Not known.

Assessment justification

Stypocaulon scoparium is a southern species that is seldom found east of the British Isles. The information available is insufficient to determine which of the red list categories would be most likely. The records from the east coast of Sweden from the 1950s are peculiar and further investigations at the sites where it was most abundant are suggested.

Recommendations for actions to conserve the species

The knowledge of the distribution, ecology and possible population trends of the species should be improved before any specific recommendations can be given.

Common names

Denmark: brandtop, Estonia: –, Finland: –, Germany: –; Latvia: –, Lithuania: –, Poland: –, Russia: –, Sweden: taggtofs

References

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SPECIES INFORMATION SHEET

Chara connivens

English name: Convergent stonewort	Scientific name: <i>Chara connivens</i>	
Taxonomical group: Class: Characeae Order: Charales Family: Charophyceae	Species authority: Salzm. ex A. Braun 1835	
Subspecies, Variations, Synonyms: –	Generation length: 1 year (annual)	
Past and current threats (Habitats Directive article 17 codes): –	Future threats (Habitats Directive article 17 codes): –	
IUCN Criteria: –	HELCOM Red List Category:	LC Least Concern
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/NT, <u>Finland</u> –/NA, <u>Germany</u> –/0 (Extinct), <u>Latvia</u> –/–, <u>Lithuania</u> –/–, <u>Poland</u> –/–, <u>Russia</u> –/–, <u>Sweden</u> –/–		

Distribution and status in the Baltic Sea region

Chara connivens is a rare species in most of the Baltic Sea area. It was probably introduced to the Baltic Sea with ballast sand and stones already several centuries ago. This view is supported by the fact, that on the Swedish coast its distribution is restricted close to former ballast dumping sites. Currently, the species is known from Estonia, Finland and Sweden.

In western Estonia *C. connivens* is quite common and its distribution area has increased during the past 20 years (Torn 2008). Since 2008 *C. connivens* is found in the southwestern parts of the Gulf of Finland. In the Finnish waters, it is also known to occur in the northern Åland Archipelago. In Sweden, the species has been found in several locations in the Öregrund Archipelago (Torn & Martin 2003). In Germany it has disappeared from Greifswalder Bodden and Darss-Zingster Bodden Chain since the beginning of the 20th century (Luther 1979, Torn & Martin 2003).



Chara connivens.

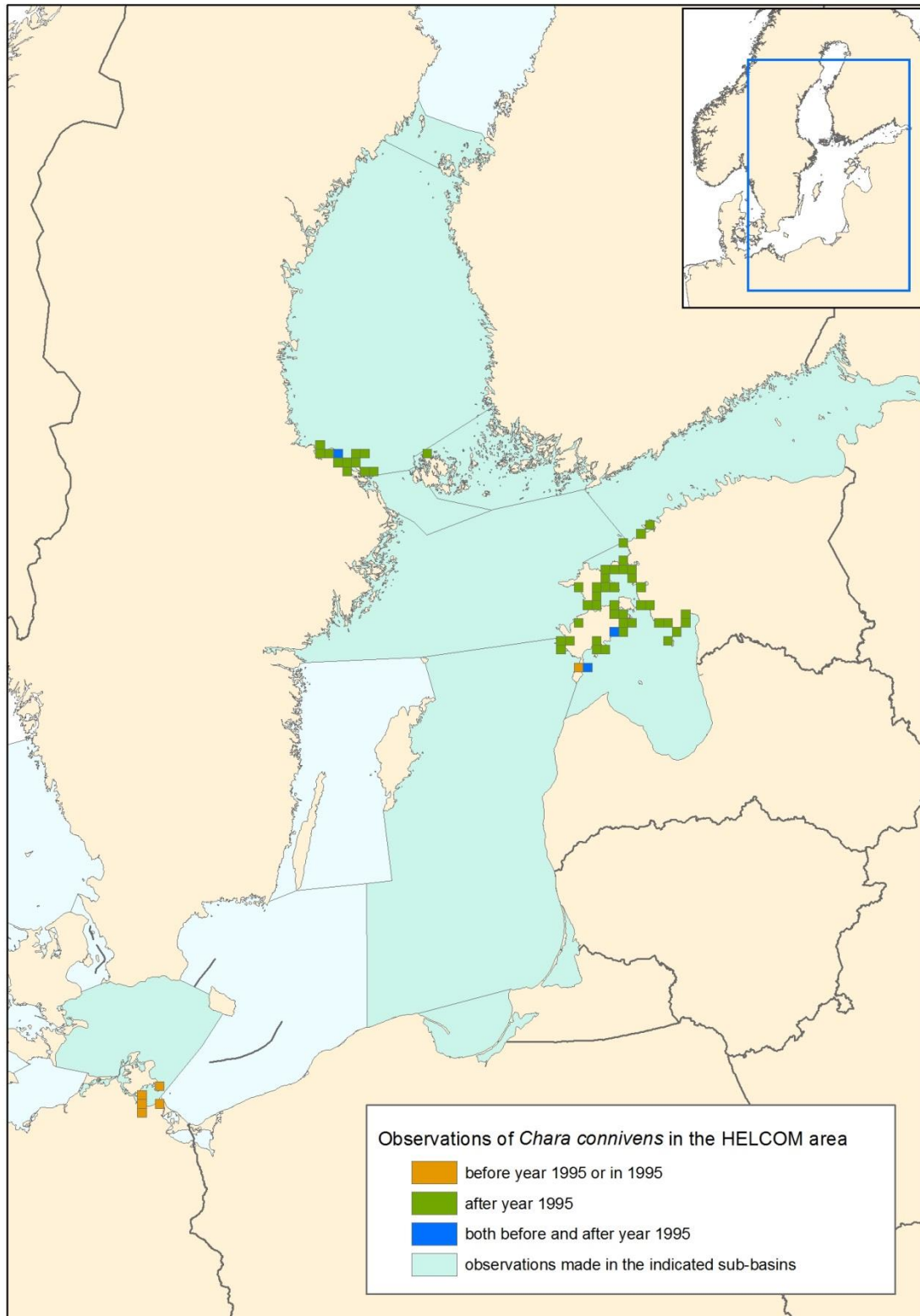
Photo by Gustav Johansson, Hydrophyta Ekologikonsult.

SPECIES INFORMATION SHEET

Chara connivens

Distribution map

The records of species compiled from the database of the Estonian Marine Institute (EMI), the Swedish Species Gateway (www.artportalen.se), the German database for macrophyte occurrences (MARIDATA), and from literature.



SPECIES INFORMATION SHEET

Chara connivens

Habitat and ecology

In the Baltic Sea *C. connivens* is found in a salinity range of 1–8 psu. It grows on sand, muddy sand, muddy clay or mixtures of sand with pebbles. It thrives in sheltered, rarely in relatively exposed locations in a depth of 0.2 to 4 m.

Description of major threats

The species is not considered threatened at the moment. Eutrophication and habitat destruction seem to be the main causes of the decline of charophytes in many regions of the Baltic Sea. Motorboat traffic has been suggested to affect charophytes by increased turbidity and mechanical damage (Blindow, et al. 2003).

Assessment justification

C. connivens is not native to the Baltic Sea area but it is assumed to have been introduced already several centuries ago. It was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007). Currently the species is rather rare and its geographic range in the Baltic Sea is restricted in the form of the extent of current occurrences (EOO) and of the area of occupancy (AOO). However, the population is neither regarded severely fragmented, nor continuingly declining and therefore the species is categorized as Least Concern (LC). In the Estonian waters *C. connivens* has become more common in the recent decades and the species is rather frequent also along the Uppland coast in Sweden.

Recommendations for actions to conserve the species

Combatting eutrophication by removing local sources of nutrient run-off. Restrictions on constructions and dredging in shallow coastal lagoons and archipelago areas.

Common names

Denmark: glat kransnål, Estonia: sile mändvetikas, Finland: suppunäkinparta, Germany: –, Latvia: –, Lithuania: glaustašakis maurabaragis, Poland: ramienica wiotka, Russia: хара сходящаяся, Sweden: tuvsträfsse

References

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SPECIES INFORMATION SHEET

Chara tomentosa

English name: Coral stonewort	Scientific name: <i>Chara tomentosa</i>	
Taxonomical group: Class: Charophyceae Order: Charales Family: Characeae	Species authority: Linnaeus 1753	
Subspecies, Variations, Synonyms: –	Generation length: 1–5 years	
Past and current threats (Habitats Directive article 17 codes): –	Future threats (Habitats Directive article 17 codes): –	
IUCN Criteria: –	HELCOM Red List Category:	LC Least Concern
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/LC, <u>Germany</u> –/3 (Vulnerable), <u>Latvia</u> –/–, <u>Lithuania</u> –/–, <u>Poland</u> –/–, <u>Russia</u> –/VU, <u>Sweden</u> –/LC		

Distribution and status in the Baltic Sea region

The current range of the species extends from Danish waters to the northern Baltic Sea (up to northern Quark). The species is less common in the southern Baltic Sea compared to the central and northern areas, where it is rather common in suitable shallow and sheltered bays. According to Torn et al. (2003) the species exhibited a dramatic decline during the second half of the 20th century in the Tvärminne archipelago in Finland. In the early 2000s signs of recolonisation have been observed. The species has also disappeared from some of its former locations along the Estonian coast and the Gulf of Finland (Torn 2008). In Germany *Chara tomentosa* declined strongly in the 1980s. Also more recent declines are suspected in Germany. In Sweden no major changes have been observed, although declines have been reported from flads (coastal lagoons).



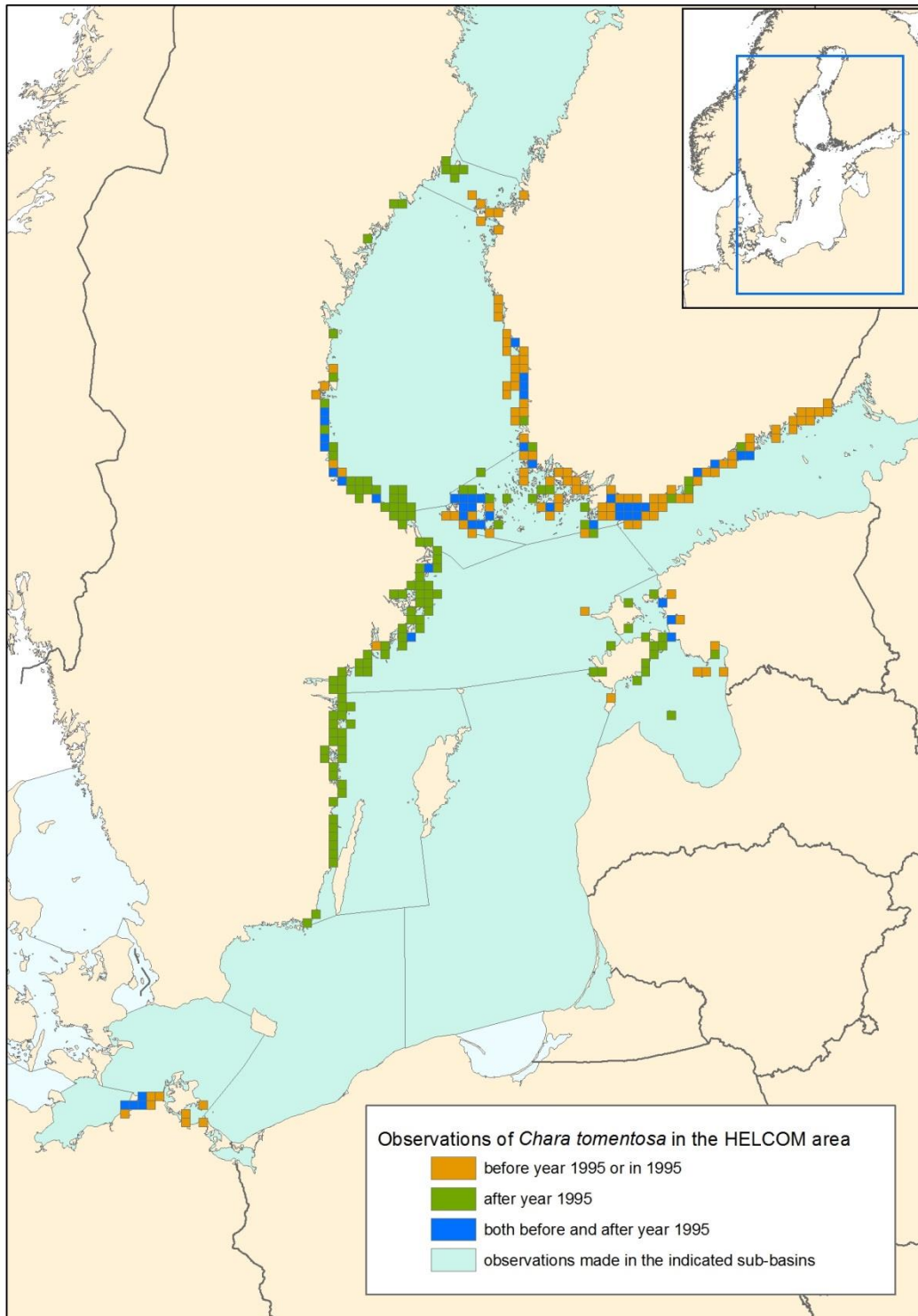
Chara tomentosa. Photo by Kaire Kaljurand, Estonian Marine Institute.

SPECIES INFORMATION SHEET

Chara tomentosa

Distribution map

The records of the species compiled from the Finnish Museum of Natural History (Botanical Museum), Swedish Species Gateway (www.artportalen.se), the database of Estonian Marine Institute (EMI), the German database for macrophyte occurrences (MARIDATA), and literature. The species occurs also in inland waters in the Baltic Sea region, e.g. in central and southern Sweden (occurrences not shown on the map).



SPECIES INFORMATION SHEET

Chara tomentosa

Habitat and ecology

Species tolerates no wave action and occurs only in sheltered or very sheltered areas on soft muddy bottoms. It is found in depths of 0.5 to 4 m. Most records are from shallow waters down to 1.5 m (Torn et al. 2003 and references therein).

Description of major threats

The species is not considered threatened at present. In general, eutrophication and coastal engineering are regarded as the most important factors for the historical population declines. The species could be negatively affected by eutrophication causing phytoplankton turbidity and increased growth of filamentous algae. Mechanical disturbances and boat traffic have a negative impact as well (Munsterhjelm 2005, Torn et al. 2003).

Assessment justification

C. tomentosa was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007). Currently, the extent of occurrence (EOO) and also the area of occupancy (AOO) exceed the thresholds given in the criteria. The species is short-lived but the exact generation time is not known. A rather long estimate of c. 5 years was chosen to be sure that the evaluated time-period would be long enough. It appears that most dramatic declines in the populations of *C. tomentosa* have taken place already earlier than three generations ago. Although also recent declines have been suspected in Germany, the overall decline in the Baltic Sea does not meet the thresholds of criterion A. Species is still widespread and at least in northern regions rather common and it is categorized as Least Concern (LC).

Recommendations for actions to conserve the species

Combatting eutrophication by removing local sources of nutrient run-off. Restrictions on constructions and dredging in shallow coastal lagoons and archipelago areas.

Common names

Denmark: tyk kransnål, Estonia: ruuge mändvetikas, Finland: punanäkinparta, Germany: Gehörnte Armleuchteralge, Latvia: –, Lithuania: kietasis maurabragis, Poland: ramiencia omszona, Russia: xapa войлочная, Sweden: rödsträfsa

References

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EMI, the database of the Estonian Marine Institute.
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SPECIES INFORMATION SHEET

Fucus serratus

English name: Serrated or toothed wrack	Scientific name: <i>Fucus serratus</i>	
Taxonomical group: Class: Phaeophyceae Order: Fucales Family: Fucaeeae	Species authority: Linnaeus 1753	
Subspecies, Variations, Synonyms: –	Generation length: 2–5 years (Lüning 1985)	
Past and current threats (Habitats Directive article 17 codes): –	Future threats (Habitats Directive article 17 codes): –	
IUCN Criteria: –	HELCOM Red List Category:	LC Least Concern
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, <u>Germany</u> protected as part of a §30 biotope (Federal Nature Conservation Act)/ 2 (Endangered), <u>Latvia</u> –/–, <u>Lithuania</u> –/–, <u>Poland</u> –/–, <u>Russia</u> –/–, <u>Sweden</u> –/LC		

Distribution and status in the Baltic Sea region

Fucus serratus is widely distributed in the northern Atlantic. In the western Atlantic it only occurs in the Gulf of St. Lorenz but along the European Atlantic coastline its distribution reaches from the White Sea south to northern Portugal. Within the Baltic Sea it occurs frequently in the western parts and to a limited degree in the central areas up the island of Gotland. Records are restricted to Sweden, Denmark and Germany.



Fucus serratus. Photos by Karin Fürhaupter, MariLim Aquatic Research GmbH.

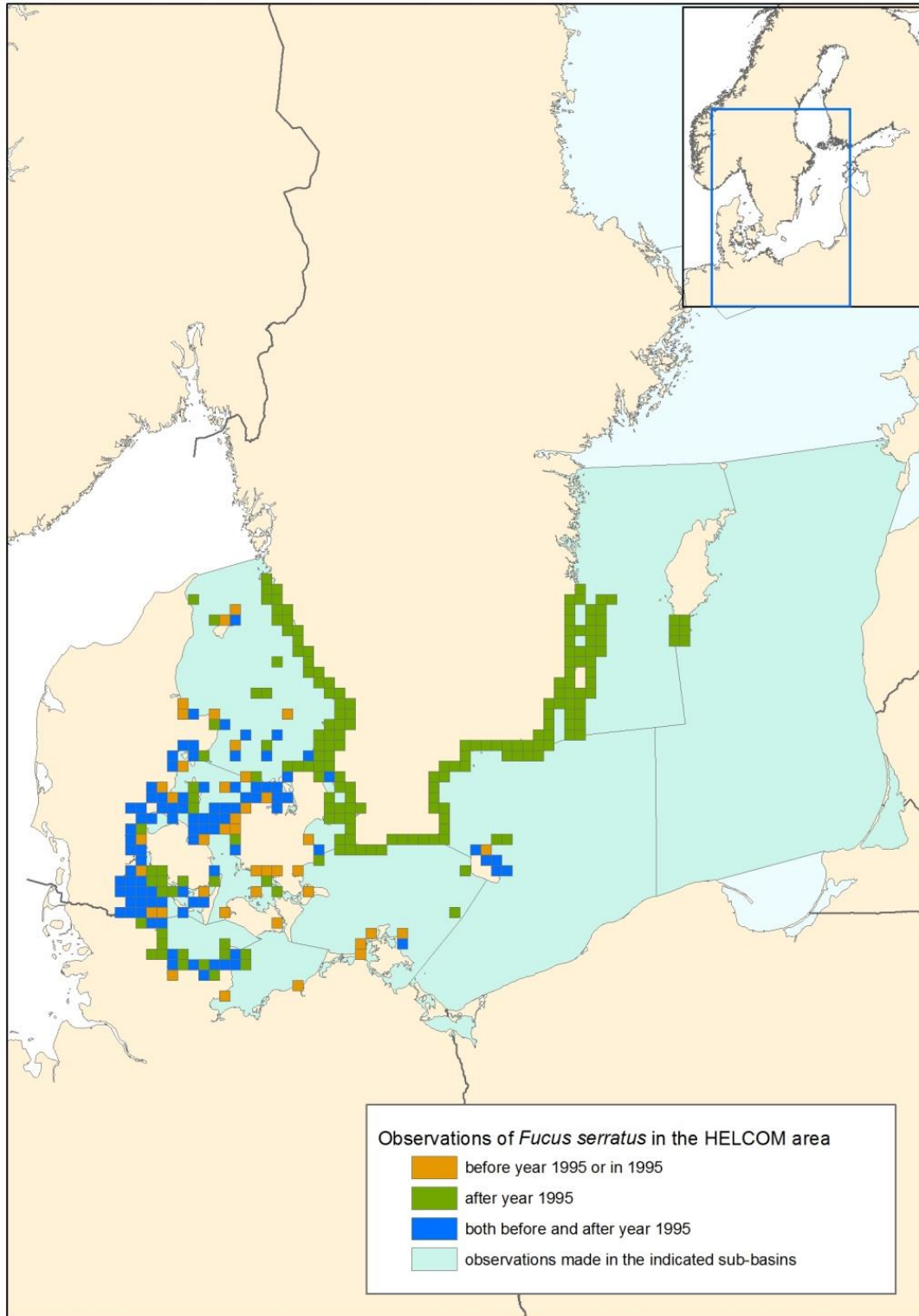
The species is widespread and common throughout its main distribution area. In recent decades the population appears to have been stable or even increasing in some areas. Population declines due to habitat destruction or reduced water transparency have been documented in several regions in the Baltic Sea but they occurred more than 30–60 years ago. In Sweden recent records indicate an increasing trend along the west-coast and stable occurrence in the rest of the Swedish distribution area. In Denmark the species was historically frequent on all stony bottoms and it can still be found in suitable habitats along almost the whole coast of Denmark. However, it appears to have disappeared from its former most southern locations in Denmark. In Germany the species occurred historically along the entire German Baltic coastline and on open water reefs down to 15 meters. Currently the vertical distribution is limited to about 6 m and the species has disappeared from most of the eastern locations in Mecklenburg Bay and Arkona Basin as well as from most open water reef areas. The decline started already in 1950s and the most drastic changes have probably happened during the 1970s. In Germany the overall historical decline in the area of occupancy is about 50%.

SPECIES INFORMATION SHEET

Fucus serratus

Distribution map

The records of species compiled from the Danish national database for marine data (MADS), the German database for macrophyte occurrences (MARIDATA), the database of Swedish Species Information Centre, Botanical Museum Lund (LD), and Uppsala Museum of Evolution Herbarium (UPS). For the Swedish coastline the continuous distribution area is mainly based on expert view.



SPECIES INFORMATION SHEET

Fucus serratus

Habitat and ecology

Fucus serratus grows epilithic on stable hard substrates like stony bottoms, boulder fields and rocks. It is a perennial macroalgae with lifespan of 2–5 years. As a marine species, it can grow in salinities down to 8–10 psu. In the Baltic Sea, the species tends to grow deeper in the more northern areas due to the higher salinities occurring in deeper waters (submergence). In contrast to other marine regions (e.g. Helgoland), *F. serratus* does not grow in the intertidal or the uppermost sublittoral zone in the Baltic.

The lower depth limit of *F. serratus* is used as one of the indicators for the ecological status in the WFD (Water Framework Directive) in several countries. Historically the species was distributed vertically between 5 and 15 m. Reduced water transparency has eliminated the species from deeper areas with a remarkable loss in the total population. The decline is more pronounced in the east where *F. serratus* cannot shift to shallower areas due to too low salinities.

Usually *F. serratus* forms monotypic dense meadows but can also grow mixed with *F. vesiculosus*. Smaller red algae such as *Ahnfeltia plicata*, *Furcellaria lumbricalis* or *Coccotylus truncatus* can be found underneath the large brown algae, forming a kind of scrub. The surface of *F. serratus* thallus can be overgrown by filamentous epiphytes. Isopods are using the filamentous epiphytes as well as the *Fucus* itself as food source. The *Fucus* meadows form an important habitat for invertebrates and stationary fish, e.g. black goby and scorpion fish, and serve as spawning and nursery environment for many other fish species.

Description of major threats

Not a threatened species at the scale of the whole Baltic Sea. Local and regional declines have been caused by e.g. habitat destruction (stone fishing on the German coast) and decreasing water transparency due to eutrophication.

Assessment justification

Fucus serratus is a widespread and in most areas a common and an abundant species. However, it was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007). The extent of occurrences (EOO) is estimated to 142 000 km². The area of occupancy (AOO) is more than > 4 000 km². Those values exceed clearly the thresholds given in the Red List criteria. For generation time the reference from Lüning (1985) for life span is used (2–5 year) to be sure that the evaluated time-period is long enough. Declines of *F. serratus* have been evidenced in many areas, but they took place already more than 30 years ago. During the last 10–20 years, the overall trend in the western Baltic Sea has been more or less stable or even increasing. Along the west-coast of Sweden the depth distribution has increased during the last few years. However, a large proportion of its former distribution area has been lost in Kiel Bay, Mecklenburg Bay and Arkona Basin. At the level of the whole Baltic Sea the species is categorized as Least Concern (LC).

Recommendations for actions to conserve the species

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Common names

Denmark: savtang, Estonia: –, Finland: sahalaitalevä, Germany: Säge tang, Latvia: –, Lithuania: šakotasis banguolis, Poland: morszczyn piłkowany, Russia: –, Sweden: sågtång

SPECIES INFORMATION SHEET

Fucus serratus

References

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- Lindegarth, M. 2009. *Fucus serratus* (Linnaeus 1753), (Phaeophyta) Toothed wrack. HELCOM Fact sheets on threatened and/or declining species and biotopes/habitats.
- MADS, The Danish national database for marine data. NERI: University of Aarhus; National Environmental Research Institute. Downloaded in August–September 2010.
- MARIDATA, the database of MariLim GmbH including all German literature references given in Nielsen (1995), Blümel et al. (2002), Schubert et al. (2003), Kiel herbarium references and all occurrences of the German HELCOM, BSPA and WFD monitoring.
- MarLIN, The Marine Life Information Network - information to support marine species and habitat conservation, sustainable management, protection and planning (www.marlin.ac.uk)
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SPECIES INFORMATION SHEET

Fucus vesiculosus

English name: Bladder wrack	Scientific name: <i>Fucus vesiculosus</i>	
Taxonomical group: Class: Phaeophyceae Order: Fucales Family: Fucaceae	Species authority: Linnaeus 1753	
Subspecies, Variations, Synonyms: <i>Fucus vesiculosus</i> f. <i>balticus</i> (C. Agardh) Dannenberg 1927 (special unattached form of the Baltic)	Generation length: 2–5 years (Lüning 1985)	
Past and current threats (Habitats Directive article 17 codes): –	Future threats (Habitats Directive article 17 codes): –	
IUCN Criteria: –	HELCOM Red List Category:	LC Least Concern
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, <u>Germany</u> 3 (Vulnerable), part of a §30 biotope (Federal Nature Conservation Act), <u>Latvia</u> –/–, <u>Lithuania</u> –/4(Indeterminate), <u>Poland</u> –/–, <u>Russia</u> –/red-listed in Leningrad Region as EN, <u>Sweden</u> –/LC		

Distribution and status in the Baltic Sea region

Fucus vesiculosus is widely distributed in the North Atlantic. Along the eastern Atlantic coastline it occurs from southern Greenland and White Sea down to North Africa. The distribution area within the Baltic extends from Kattegat into the Bothnian Bay and the species has been found in all riparian countries. The species has two different morphological forms in the Baltic: a typical epilithic and a special unattached form, which occurs in sheltered lagoons e.g. in Germany and Poland.

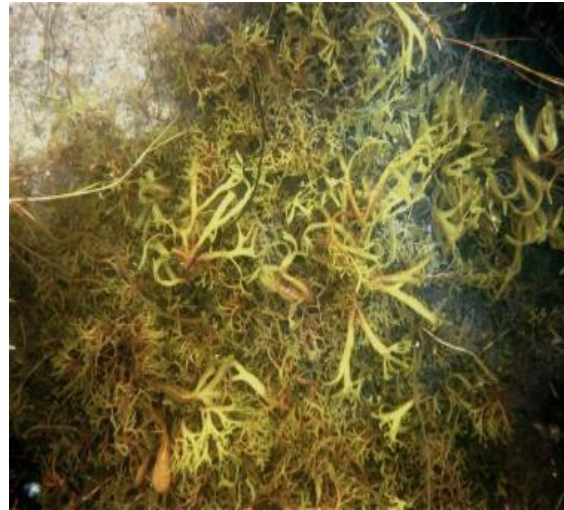
The bladder wrack is a widespread and common species throughout its distribution area. The current population in the Baltic Sea appears to be stable but population reductions have been documented in some regions 30–60 years ago. The declines were caused primarily by habitat destruction or reduced water transparency. In Sweden the species occurs frequently from the west coast up to the area of Umeå at the east coast, where the species can be found down to 14 m. In Denmark the species occurred historically frequently along the whole coastline on suitable substrate and can still be found at nearly all locations. In Germany the species occurred historically on stony bottoms down to 10 meters, but currently the species is never found deeper than 5–6 m, which has resulted in a remarkable decline in the area of occupancy. The decline started already in 1950s. The bladder wrack still occurs in a narrow band along most of the German coast but is missing today in some of the highly eutrophicated inner parts of bays and lagoons, such as the Schlei Fjord and the Darß-Zingst Bodden Chain, as well as in most of the eastern outer coastlines. In Poland *F. vesiculosus* existed as unattached specimens within the Puck Bay in the 1950s but got lost due to decreasing water transparency after that. In the 1980s it was not found anymore and it has not returned in the area since then. The bladder wrack has not been found from the outer coast of Poland and is also missing in the Kaliningrad area. For Lithuania only one record exist for *Fucus vesiculosus* in 1998 (Labanauskas, 2000), however, it is not clear whether it refers to attached specimens or just drifting individuals that may originate also outside of Lithuania. The bladder wrack has not been detected in any other survey after 1998. From the Latvian coastline some references exist for the Gulf of Riga. In Estonia *F. vesiculosus* can be found along the whole coastline. All historically known locations of bladder wrack still exist, except for some locations in the Gulf of Riga. Also in Estonia *Fucus* disappeared from the deepest areas about 30 years ago but currently there is no trend. The

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Fucus vesiculosus

bladder wrack is also distributed in the inner Gulf of Finland at the Leningrad Region and the Berezovye Islands in Russia but there is no data on possible trends. In Finland the species occurs in the Gulf of Finland and the Archipelago Sea. In the distribution map the Finnish occurrence data is newer than 1995 as historical references could not be collected. The *Fucus* records from the Finnish Quark have been mainly classified to *Fucus* sp. and/or *Fucus radicans* and though *F. vesiculosus* exists there, it is uncommon compared to *F. radicans*.

From the Gulf of Riga *Fucus* almost disappeared but has reappeared more recently (Martin 2000, Torn et al. 2006). In Kaliningrad region the species has also occurred, but it is not known when it disappeared (most likely rather long time ago).



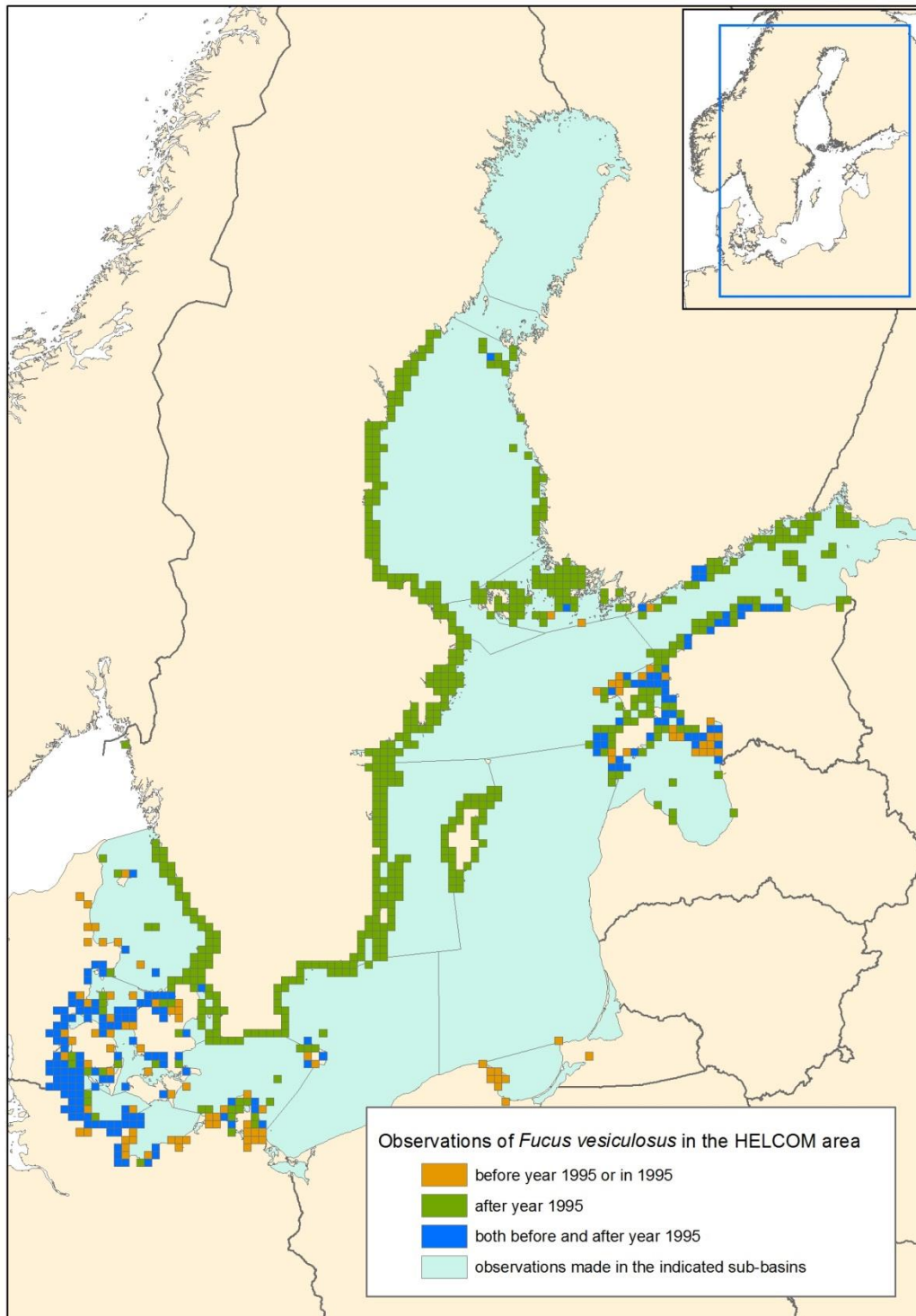
Fucus vesiculosus under water habitus of epilithic and special unattached form of the Baltic. Photos by Karin Fürhaupter, MariLim Aquatic Research GmbH.

SPECIES INFORMATION SHEET

Fucus vesiculosus

Distribution map

The records of species compiled from the Danish national database for marine data (MADS), the database of Estonian Marine Institute (EMI), the German database for macrophyte occurrences (MARIDATA), the Finnish database for aquatic macrophytes (Finnish Environment Institute), data from the Finnish Metsähallitus and Alleco, Polish and Russian literature, the database of the Swedish Species Information Centre, Botanical Museum Lund (LD), and Uppsala Museum of Evolution Herbarium (UPS). For the Swedish coastline the continuous distribution area is mainly based on expert view.



SPECIES INFORMATION SHEET

Fucus vesiculosus

Habitat and Ecology

The ecology of *Fucus vesiculosus* is very similar to *F. serratus* for the typical attached form. It grows epilithic on stable hard substrates like stony bottoms, boulder fields and rock. In contrast to *F. serratus* it can also be found on *Mytilus* shells and smaller mobile stones. It is a perennial macroalgae with a lifespan of 2–5 years and can grow in salinities down to about 2–3 psu. Compared to *F. serratus* it grows in shallower habitats (hydrolittoral), which may also become dry temporarily. Thus the species tolerates icing and drying to a certain degree. The lower depth limit of *F. vesiculosus* is set by light intensity and is used as an indicator for the ecological status in the EU Water Framework Directive (WFD) in several countries. The bladderwrack was previously found down to 15 m depth in the Baltic. However, at present dense meadows occur in such depths (down to 14 m) only in Sweden but in other Baltic Sea countries the maximum depth limit has shifted considerably upwards. In Germany it is currently seldom found deeper than 2–4 m, although single individuals occur down to 6 m depth. In Estonia the bladder wrack has also disappeared from the deepest parts of its habitats. Similar to *F. serratus* the *F. vesiculosus* meadows also form an important biotope for invertebrates and stationary fish (e.g. black goby or scorpion fish) and serve as spawning and nursery ground for other fish species. As *F. vesiculosus* is more widely distributed, grows taller and has erect canopy structure in contrast to *F. serratus*, its relevance in habitat forming can be regarded higher.

The unattached form *Fucus vesiculosus* f. *balticus* can be found on soft bottom (sand to muddy sand) in very sheltered bays, lagoons and inlets at depth ranges between 0.25 and 2 m. It coexists with attached *F. vesiculosus*, unattached *Furcellaria lumbricalis* and the characteristic rooted vegetation of bays and lagoons (e.g. *Ruppia* spp., *Zannichellia palustris*, *Potamogeton pectinatus*, *Zostera* spp. and several charophytes) and serves as an important habitat for invertebrates. However, if abundances of the unattached form are very high the sediment below becomes deoxygenated and the associated infauna may die.

Description of major threats

Not a threatened species at the scale of the whole Baltic Sea. Local and regional historic declines have been caused by e.g. habitat destruction (stone fishing on the German and Poland coast) and decreasing water transparency due to eutrophication.

Assessment justification

The bladder wrack is a widespread, common and abundant species. However, it was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007). The extent of occurrences (EOO) is estimated to 702 000 km². The area of occupancy (AOO) exceeds very clearly the threshold of 4 000 km² given in the criteria. For generation time the estimate of Lüning (1985) for life span was used (2–5 year) to be sure that the evaluated time-period is long enough. Reductions of bladder wrack have been reported from all riparian countries. However, the declines occurred already 30–100 years ago and thus clearly predate the time-period of the population decline evaluation. Over the last 10 years the overall population appears to have remained stable. The species is categorized as Least Concern (LC).

Recommendations for actions to conserve the species

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Common names

Denmark: blæretang, Estonia: põisadru, Finland: rakkolevä, Germany: Blasentang, Latvia: –, Lithuania: pūslėtasis guveinis, Poland: morszczyń pęcherzykowaty, Russia: –, Sweden: blåstång

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SPECIES INFORMATION SHEET

Furcellaria lumbricalis

English name: Black carageen or Brabs bed	Scientific name: <i>Furcellaria lumbricalis</i>	
Taxonomical group: Class: Florideophyceae Order: Gigartinales Family: Furcellariaceae	Species authority: (Hudson) J.V.Lamouroux 1813	
Subspecies, Variations, Synonyms: <i>Furcellaria fastigiata</i> (Turner) J.V.Lamouroux 1813 <i>Furcellaria fastigiata</i> f. <i>aegagropila</i> Reinke 1889 (special unattached form of the Baltif)	Generation length: 4–6 Years (Austin et al. 1960a, b)	
Past and current threats (Habitats Directive article 17 codes): –	Future threats (Habitats Directive article 17 codes): –	
IUCN Criteria: –	HELCOM Red List Category:	LC Least Concern
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, Germany 3 (Vulnerable), part of a §30 biotope (Federal Nature Conservation Act), Latvia –/–, Lithuania –/–, Poland –/–, Russia –/–, Sweden –/LC		

Distribution and status in the Baltic Sea region

Furcellaria lumbricalis is a widespread and rather common species in most areas of the Baltic Sea. In the north, the distribution area extends to the Quark and the Gulf of Finland where it reaches at least to the Finnish/Russian border. In the northern Baltic Sea the abundance of the species appears to have been rather stable. In Sweden and Estonia there are no observed trends, except for an increasing trend in Askö area in Sweden. In Estonia the floating form is also abundant enough to be harvested. In more southern Baltic Sea, declines have been evidenced in many areas (Germany, Poland, and Lithuania) but they mostly took place already more than or approximately 30 years ago. In the most recent decades, the overall trend has been more or less stable or increasing. In Kaliningrad region, Lithuania and Latvia, there are places where the species can be found drifted ashore. However, the species is obviously rare in these areas and e.g. in the Kaliningrad region only one population is known with no historical data and no knowledge on possible trends.



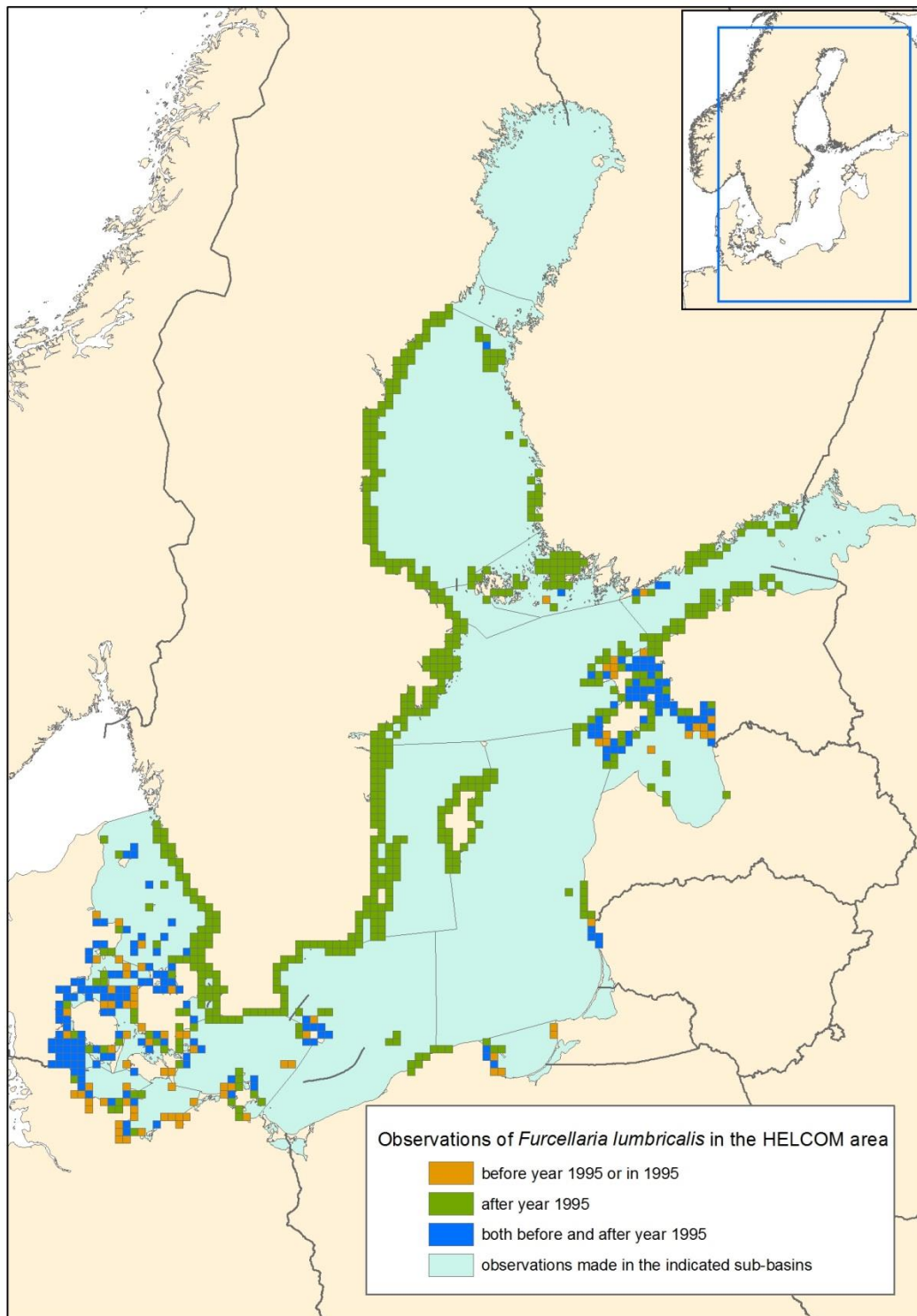
Furcellaria lumbricalis. Photos by Karin FÜRhaupter, MariLim Aquatic Research GmbH.

SPECIES INFORMATION SHEET

Furcellaria lumbricalis

Distribution Map

The records of species compiled from the Danish national database for marine data (MADS), the database of Estonian Marine Institute (EMI), the German database for macrophyte occurrences (MARIDATA), Finnish and Polish monitoring data and literature, and Swedish Species Gateway (www.artportalen.se). For the Swedish coastline the continuous distribution area is mainly based on expert view.



SPECIES INFORMATION SHEET

Furcellaria lumbricalis

Habitat and Ecology

Furcellaria lumbricalis grows in its typical form epilithic on stable hard substrates such as stony bottoms, boulder fields and rocks. It is a perennial macroalgae with a life-span of 5–10 years (www.marlin.ac.uk) and a marine species, which can grow in salinities down to 3 psu. It grows only sublittoral and occurred in the Western Baltic historically between 3 and 30 m with its main occurrence between 8 and 12 m. Due to reduced water transparency the vertical depth distribution shifted upwards with the upper limit being already at 1–2 m and the lower limit around 8–10 m. At present, the vertical main occurrence lies between 3–5 m in the Western Baltic, whereas in the Eastern Baltic it is between 3–9 m. The lower depth limit is used as an indicator for the ecological status in the EU Water Framework Directive (WFD) in several countries. *Furcellaria lumbricalis* forms monotypic dense meadows in its central and northern Baltic distribution area where most of the other perennial red algae are not able to sustain due to the low salinity. It grows under *Fucus vesiculosus* within the *Fucus* belt and forms part of the red algal belt below the *Fucus* belt.

Meadows existed historically in the Western Baltic in such abundance that it was planned to harvest the species for carrageen production (Hoffmann 1952). At present the species appears to have been substituted in the Western Baltic by other perennials (e. g. *Coccotylus truncatus*, *Delesseria sanguinea* or *Phycodrys rubens*) or annual filamentous species and the distribution area has been strongly reduced during the 1970s and 1980s.

The unattached form *Furcellaria fastigiata* f. *aegagropila* can be found on soft bottom (sand to muddy sand) in very sheltered bays, lagoons and inlets. It coexists with the characteristic rooted vegetation of bays and lagoons (e.g. *Ruppia* spp. *Zannichellia palustris*, *Potamogeton pectinatus*, *Zostera* spp. and several charophytes) and serves as an important habitat for invertebrates. In some countries, abundances are very high and the species is used economically.

It is assumed that the species has sexual reproduction up to Gotland. North of Gotland there is very little information on the species reproduction mode but probably the most common population regeneration form is fragmentation of thallus and reattachment of fragments to hard substrates.

Description of major threats

Not a threatened species at the scale of the whole Baltic Sea. Local and regional historic declines have been caused by e.g. habitat destruction (stone fishing on the German and Poland coast) and decreasing water transparency due to eutrophication.

Assessment justification

F. lumbricalis is a widespread, common and abundant species. However, it was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007). The extent of occurrences (EOO) is estimated to 658 000 km². The area of occupancy (AOO) exceeds very clearly the threshold given in the criteria (4 000 km²). For generation time the reference from www.marlin.ac.uk is used to be sure that the evaluated time-period is long enough. Population reductions have been reported from all riparian countries but declines occurred in historical times (more than 30 years ago). During the last 10 years, there appears to be no overall trend. However, a lot of its former distribution area has been lost in the southern Baltic Sea in Kiel Bay and Mecklenburg Bay. The species is categorized as Least Concern (LC).

Recommendations for actions to conserve the species

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SPECIES INFORMATION SHEET

Furcellaria lumbricalis

Common names

Denmark: gaffeltang, Estonia: agaric, Finland: haarukkalevä, Germany: Gabeltang, Latvia: –, Lithuania: –, Poland: widlik zastrzony, Russia: –, Sweden: kräkel

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