**Species Information Sheets / Macrophytes.** Text changes made by Tytti. Summary table, Recommendations and References not yet checked. **Mention protection!**

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<thead>
<tr>
<th>English name:</th>
<th>Scientific name:</th>
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<tr>
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<td><em>Alisma wahlenbergii</em></td>
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<th>Taxonomical group:</th>
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<tr>
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<td>(Holmb.) Juz.</td>
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<tr>
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<th>HELCOM Red List Category:</th>
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<td><strong>EN</strong></td>
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<table>
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<th>Protection and Red List status in HELCOM countries</th>
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<tr>
<td>Denmark:</td>
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<td>Estonia:</td>
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<tr>
<td>Finland: <em>Protected</em> status in the Nature Conservation Decree Annex 3(a), <em>Strictly protected</em> status in the Nature Conservation Decree Annex 4, the species has also a species specific protection plan, Red Listed as EN.</td>
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<td>Germany:</td>
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<td>Poland:</td>
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<td>Russia: Protected and Red Listed in Leningrad Region as EN; also included in Red Data Book of Russia.</td>
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<tr>
<td>Sweden: Protected and Red Listed as EN</td>
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<tr>
<th>Responsible assessor: Gustav Johansson</th>
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### Distribution and status in the Baltic Sea region

*Alisma wahlenbergii* is endemic in the Baltic Sea and in some adjacent lakes. The extant occurrences are concentrated to there are two major areas, from Rånefjärden (SE) to Kalajoki (FI) in the Bothnian Bay, and in the northeastern shore of the innermost Gulf of Finland (RU). Populations in the Northern Baltic Proper (Nyköping, SE), the Quark (Vasa, FI) and the Finnish part of the Gulf of Finland (Kotka) are currently regarded extinct.

The main population is situated on the Finnish coast of the Bothnian Bay, and there are populations also in the eastern
part of the Gulf of Finland, where the species is still found in Russia in the Leningrad region. In Russia the species occurs in the Leningrad region only along the northern coast of the eastern Gulf of Finland (RU7, RU8, RU9, RU19), the neighboring islands (RU7, Glazkova, 2008, 2012) and in the Neva Bay.

In Russia, recently rather abundant populations of this species have been recorded with rather abundant populations from many islands of Berezovy Islands Archipelago (RU3 – and also map VI, enclosed to the monograph) and Vyborg Bay (records from 8 islands - Glazkova, 2012) and on Kotlin Island in Neva Bay (Glazkova, Tzvelev, 2006).

Over the last decades, the size of the population in Neva Bay, however, has decreased considerably after construction of a dam across the Neva Bay (RU6, RU7). The species, in particular, has completely disappeared from some of its former locations, e.g., from the vicinity of Lakhta, where it was formerly abundant. But the populations of the species on Berezovy Islands Archipelago and on the islands in Vyborg Bay, according to recent data by Elena Glazkova (RU3, and Glazkova, 2012), are in good condition.

Distribution map

Habitat and Ecology

Alisma wahlenbergii is a short-living perennial, aquatic plant that grows on soft bottoms (silt, clay, sand) in shallow waters (in depth between 5-45 cm, up to 1.5 m according to Tzvelev, 2000), mainly at sheltered shores. The species demands clear water and is sensitive to overgrowth by filamentous algae and competition from larger plants such as reeds and water lilies. The salinity limit is estimated to be c. 3 psu. In its main distribution area in the Bothnian Bay the growing sites will turn unsuitable in less than a decade due to land-upheaval, and new sites arise continuously.

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 floes. 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 its shallow growing sites open. In the recent decades grazing of seashore meadows has strongly declined, and the former growing sites have overgrown. Eutrophication of the sea also enhances overgrowth, as it favors strong competitors such as reeds. As the species demands clean and transparent water it quickly dies out under conditions of high water turbidity and pollution. Reasons for local disappearances also include road construction, harbours, marinas and summer cottages as well as dredging of waterways.

Assessment justification

The limited AOO (c. 300 km²) and severely fragmented distribution together with a continuous decline of the population assumed to concern 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)). The geographic range of the species is restricted in the form of area of occupancy (AOO estimated to be c. 550 km², on the basis of the Finnish and Swedish AOO estimates and Russian occurrences), and the population is considered to be continually declining. The population also experiences extreme fluctuations in number of mature individuals, as the populations may fluctuate in size from a few to thousands of individuals. 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 (B2b(iii,iv,v)iii(vi)).

**Recommendations for actions to conserve the species**

Water quality in the Baltic Sea and especially in the Leningrad region must be improved. Negatively affecting human activities must be controlled and restricted in and near the growing sites of *A. wahlenbergii*.

**Common names**

- Denmark: Liden Skeblad
- Estonia: -
- Finland: Upossarpio
- Germany: -
- Latvia: -
- Lithuania: -
- Poland: -
- Russia: Частуха Валенберга
- Sweden: Småsvalting

**References**


Glazkova E., 2012. О некоторых редких видах сосудистых растений островов Выборгского залива (Ленинградская область) // Botanichesky zhurnal, Vol. 97, № 4. P. 512-524. (On some rare vascular plant species from the islands of Vyborg Bay (Leningrad Region)).

Environment and biological diversity of Berezovye Islands archipelago (The Gulf of Finland).


Kastikka, Finnish Museum of Natural History. www.luomus.fi/vaxtatias


Distribution and status in the Baltic Sea region

Distribution: Distribution area of B. reinboldii is the northwestern Baltic Sea with records in Sweden and Denmark. It has never been found south of the Belt Sea. Also outside the Baltic this species is rarely recorded. It is distributed in the northern Atlantic with one old record from Helgoland (Reinke 1892), 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).

Status: All Baltic occurrences are restricted to Denmark and the west coast of Sweden and beside one Danish record all refer to findings before 1995. In Sweden there are two records from two geographically separated locations (Fladengrund and Göteborg). In Denmark exists five records from four geographically separated locations (Skagen – two records, Frederikshavn, Samsø and north of Lolland). The only recent record originates from the location north of Lolland (Nielsen 2005).
Distribution map (will finally be edited by HELCOM)
Habitat and Ecology

Due to the rare occurrence of *Botrytella reinboldii* also little is known concerning the habitat or ecology. The species have been found epilithic on shell bottoms as well as on pebbles/gravel bottoms but also epiphytic on other algae. It is a marine algae, which seems to tolerate brackish water to a limited degree (~ 18 psu). Most records originate in spring (May) but there is also one record from August. Depth distribution seems to range from 1 to 12 m.

Description of major threats

Assessment justification

The species has been recorded too rarely within the Baltic and the neighbouring marine areas. The data base cannot serve as an appropriate basis for the IUCN assessment criteria. Even the appropriate habitat cannot be exactly specified for the Baltic.

Recommendations for actions to conserve the species

Common names

References

Artdatabankens Obs. Database, Botanical Museum Lund (LD), Uppsala Museum of Evolution Herbarium (UPS); national data base from Sweden

MADS, the national database for marine data from Denmark


www.algaebase.org
Distribution and status in the Baltic Sea region

In the Baltic Sea, *C. brauni* has been found from the Gulf of Bothnia and the Gulf of Finland. In Sweden the species is currently known from a few locations in the northernmost Bothnian Bay. In Finland it has been found from the estuaries of rivers Kiiminkijoki and Kokemäenjoki in the 1980’s and 1990’s. 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, although the species is known from a pond connected to river Porvoonjoki near the coastline of the Gulf of Finland. In 1940’s *C. brauni* was found from a
few locations in the Gulf of Finland (Pohja, Pernaja and Porvoo).
Habitat and Ecology
C. braunii is a stenohaline freshwater species and in the Baltic Sea it 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 also in the Baltic Sea 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 1960-80’s from one location in the Gulf of Finland. In 1940’s 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 1940’s and it is assumed that the decline still continuous 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

Combatting local sources of nutrients causing eutrophication. 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:-
Poland:-
Russia: Хара Брауна
Sweden: svedsträfse

References


**English name:** Convergent stonewort  
**Scientific name:** Chara connivens

**Taxonomical group:**  
Class: Characeae  
Order: Charales  
Family: Charophyceae

**Subspecies, Variations, Synonyms:** -  
**Generation length:** 1 year (annual)

**Description of major threats:**  
- Construction (D03, E01)
- Water traffic (G01.01.01)
- Contaminant pollution (H01, H03)

**IUCN Criteria:** -  
**HELCOM Red List Category:** LC

**Global / European IUCN Red List Category:** -  
**Habitats Directive:** -

**Protection and Red List status in HELCOM countries:**  
- Denmark: -
- Estonia: -
- Germany: -
- Latvia: -
- Lithuania: -
- Poland: -
- Russia: -
- Sweden: -

**Responsible assessor:** Kaire Torn

### Distribution and status in the Baltic Sea region

*Chara connivens* is a rare species in the Baltic Sea area. It is assumed that it was introduced to the Baltic Sea with ballast sand and stones perhaps already several centuries ago. This view is supported by the distribution on the Swedish coast where the occurrences are restricted to be 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 last 20 year (Torn 2008). Since 2008 *C. connivens* is also found in the southwestern parts of the Gulf of Finland. One location is known from Finland in the northern Åland Archipelago. In Sweden the species has been found in several locations from Öregrund Archipelago (Torn & Martin 2003) but has dissapeared from Greifswalder Bodden and Darss-Zingster Bodden Chain since beginning of 20th century (Luther 1979, Torn & Martin 2003).
Distribution map
Habitat and Ecology

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

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. Motorboat traffic has been suggested to affect charophytes also in the Baltic Sea by increased turbidity and mechanical damage (Blindow, et al. 2003).

Assessment justification

Although C. connivens is not native to the Baltic Sea area, it has been included in the assessment as it is assumed to have entered the Baltic Sea already several centuries ago. 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 not regarded severely fragmented, nor continually declining and therefore the species is categorized 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

Combating local sources of nutrients causing eutrophication. Conservation measures, such as restrictions on coastal constructions and dredging, in shallow coastal lagoons and archipelago areas.

Common names

Denmark: glat kransnål
Estonia: sile mändvetikas
Finland: suppunäkinparta
Germany:
Latvia:
Lithuania: glaustašakis maurabarągis
Poland:
Russia: хара сходящаяся
Sweden: tuvsträfse

References


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 South and Middle Sweden. In Finland the species has been recently found only from several locations in the Åland archipelago in the 2000s. Older records exist from the southern coast of Finnish mainland. There are no former records from Estonia but there are a few recent findings from the outer archipelago of Estonia reported after the year 2006. Chara horrida seemed already to be extinct from German coastal areas, but in the year 2005 the species was found in Schmidt Bülten. In Denmark C. horrida has dissapeared from its former locations.
Distribution map

Chara horrida. Photo by Gustav Johansson.
Habitat and Ecology

*C. horrida* is mainly found from sheltered areas, in most cases on soft bottom, 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. On the Finnish growing sites, eutrophication has favored colonization by red algae or other macrophytes, as well as mass occurrences of filamentous algae. In Germany, the underlying causes of decline and disappearance relate to damming of shallow bays and increased turbidity in the charophyte habitats. In Sweden the population decline probably relates to dredging and other activities on charophyte habitats, as well as to the effects of eutrophication (Blümel 2003).

Assessment justification

The geographic range of *C. horrida* is considered restricted and continuously 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 individuals has been estimated to 35 and the area of occupancy (AOO) c. 300 km². For the whole Baltic Sea the corresponding figures are probably less than 20,000 individuals in 60-70 localities and the total estimate for AOO is c. 300-400 km². The restricted geographic range together with the continuing decline of EOO and 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

Combating local sources of nutrients causing eutrophication. Conservation measures, such as restrictions on coastal constructions and dredging, in shallow coastal lagoons and archipelago areas.

Common names

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<th>Country</th>
<th>Common Name</th>
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<td>Denmark</td>
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<td>Russia</td>
<td>Хара щетиняная</td>
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<td>Sweden</td>
<td>Raggsträfse</td>
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References


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<th>English name:</th>
<th>Scientific name:</th>
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<tr>
<td>Coral stonewort</td>
<td><em>Chara tomentosa</em></td>
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**Taxonomical group:**
- **Class:** Charophyceae
- **Order:** Charales
- **Family:** Characeae

**Species authority:** Linnaeus 1753

**Subspecies, Variations, Synonyms:** -

**Generation length:** 5–(10) years

**Description of major threats:**
- Construction (D03, E01)
- Water traffic (G01.01.01)
- Contaminant pollution (H01, H03)

**Threats in the future:**
- Construction (D03, E01)
- Water traffic (G01.01.01)
- Contaminant pollution (H01, H03)

**IUCN Criteria:**
- HELCOM Red List Category: LC

**Global / European IUCN Red List Category:**
- Habitats Directive: NE

**Protection and Red List status in HELCOM countries:**
- Denmark: -
- Estonia: -
- Germany: -
- Latvia: -
- Lithuania: -
- Poland: -
- Russia: Red Listed as VU
- Sweden: Red Listed as LC

**Responsible assessor:** Kaire Torn

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**Distribution and status in the Baltic Sea region**

The current total 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 Tvarminne archipelago in Finland. In the early 2000’s signs of recolonisation has 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 1980’s. 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).
Distribution map

Distribution of Chara tomentosa in the HELCOM area
- Light blue: observations found in the indicated sub-basins
- Pink: <1005 (observations found before the year 1995)
- Red: >1005 (observations found after the year 1995)
- Blue: observations found both before and after the year 1995
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 a depth of 0.5 to 4 m. Most records are from shallow water of up to 1.5 m depth distribution (Torn et al. 2003 and references therein).

Description of major threats

Eutrophication and coastal engineering are regarded as the most important factors for the population decline. The species is threatened 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

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 LC.

Recommendations for actions to conserve the species

Combatting local sources of nutrients causing eutrophication. Conservation measures, such as restrictions on coastal constructions and dredging, in shallow coastal lagoons and archipelago areas.

Common names

Danish: tyk kransnål
Estonian: ruuge mändvetikas
Finnish: punanäkinparta
German: gehörnte armleuchteralge
Latvian:
Lithuanian: kietasis maurabragis
Polish: ramiencia omszona
Russian: хара войлочная
Swedish: rödsträfse
References


**Distribution and status in the Baltic Sea region**

Distribution: This species is 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 mainly occurs in coastal waters. In Finland *Crassula aquatica* occurs in most of the country (F1; Retkeilykasvio, 1998), both in slightly brackish and freshwaters. In Sweden the species has concentrations along the western coast, lake Vänern, river Dalälven and on the coast of Norrland in the northern Sweden (Swedish Species Information Center 2010).

In Russia in the Leningrad Region the species is known mainly from the northern and north-western parts (in slightly brackish and freshwaters) - from Vyborg, Priozersk, Vsevolozhsk, Kingisepp and Lomonosov districts on the coast of the Gulf of Finland (RU7; RU4) and some islands (Zapadnyi Berezovyi Island, Lisii, Kotlin) (RU3; Glazkova, Tzvelev, 2006; Glazkova, 2012), the shores of Lake Ladoga and other large lakes, as well as recorded also from St. Petersburg between Lakhta and Sestroretsk, and in the banks of Neva River (RU6). In the Baltic Countries *Crassula aquatica* seems to be extinct – it has not been reported since 1909 from Latvia and 1934 from Latvia (Flora of the

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<tbody>
<tr>
<td><strong>Distribution:</strong> This species is scattered over Eurasia and North America. According to the Atlas Florae Europaeae (Jalas et al. 1999), the European distribution area of <em>Crassula aquatica</em> is clearly concentrated in Finland, Sweden and Russia. Within the Baltic Sea region the species mainly occurs in coastal waters. In Finland <em>Crassula aquatica</em> occurs in most of the country (F1; Retkeilykasvio, 1998), both in slightly brackish and freshwaters. In Sweden the species has concentrations along the western coast, lake Vänern, river Dalälven and on the coast of Norrland in the northern Sweden (Swedish Species Information Center 2010).</td>
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**Crassula aquatica. Photo by Galina Konechnaya.**
Baltic Countries, 1996; Atlas of the Estonian Flora, 2005). Crassula aquatica does not occur in Lithuania and is extinct and categorized as purely freshwater species in Germany.

Status: The species has been considered Vulnerable both in Finland and the Leningrad Region, Near Threatened in Sweden, and Extinct in Germany, Latvia, Estonia.

Distribution map

(To be produced by Finnish or Swedish colleagues, because the main distribution area of the species is clearly concentrated there, as well as the data on exact localities of the species in those countries) The map of distribution of the species within the Leningrad region is given in RU6, RU7 (P. 127) and could be used for compiling the final distribution map in the Baltic Sea Region.

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. Can flower and fruit both underwater and on extremely wet, coastal sandy and silty banks. Seeds mainly dispersed by water. Usually it grows by rather large patches. The size of populations vary from year to year, depending on predominating 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

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

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 clear tendency to declining and even to extinction in many former localities. All recent occurrences are restricted to the northern part of the Leningrad Region, where the species is declining rapidly, Sweden and Finland. 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 localities and also most probably the number of mature individuals exceed the thresholds in Red List criteria. The population is fragmented and the localities 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 (B2a, b (i,ii,iv, v)c (iv)).

Kommenteeritud [PK19]: what do Sweden and Finland refer to in the end?
Recommendations for actions to conserve the species

The main conservation measure required is protection of shores from pollution and restriction of coastal construction and beach tourism. Monitoring of populations and creation of new protected areas are also required.

Common names

**Denmark:** Korsarve
**Estonia:** Vesikas
**Finland:** Paunikko
**Germany:**
**Latvia:**
**Poland:**
**Russia:** Тиллея водная
**Sweden:** Fyrling

References


**Finland:** F1; as well as:

**Russia:** see in reference list RU3, RU4, RU6, RU7, as well as:

**Sweden:** Swedish Species Information Center 2010;
**Germany:** ?
**English name:** Delamarea attenuata

**Scientific name:** *Delamarea attenuata*

**Taxonomical group:**
- Class: Phaeophyceae
- Order: Ectocarpales
- Family: Chordariaceae

**Species authority:** (Kjellman) Rosenvinge 1893

**Subspecies, Variations, Synonyms:**
- Generation length: probably 1

**Description of major threats:**

**Threats in the future:**

**IUCN Criteria:**

**HELCOM Red List Category:** DD

**Global / European IUCN Red List Category:**
- Habitats Directive

**Protection and Red List status in HELCOM countries:**
- Denmark:
- Estonia:
- Finland:
- Germany:
- Latvia:
- Lithuania:
- Poland:
- Russia:
- Sweden: DD

**Responsible assessors:** Gustav Johansson

---

**Distribution and status in the Baltic Sea region**

There are a few rather recent records from northern Kattegat in both Denmark and Sweden.
Distribution map (will finally be edited by HELCOM)
Habitat and Ecology

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

Description of major threats

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

Assessment justification

A northern species that is rare also in Norway. Not found on the British Isles. The information available is insufficient to determine which of the red list categories that is most likely.

Recommendations for actions to conserve the species

-

Common names

Danish:
Estonia:
Finland:
Germany:
Latvia:
Lithuania:
Poland:
Russia:
Sweden:

References


The Danish Biodiversity Information Facility, Botanical Museum, Copenhagen, the Phycology Herbarium

http://www.artfakta.se/Artfaktablad/Delamarea_Attenuata_232657.pdf
### Distribution and status in the Baltic Sea region

*Fucus serratus* is widely distributed in the northern Atlantic. Its occurrence is restricted in the western Atlantic to the Gulf of St. Lorenz) but along the European Atlantic coastline its distribution reaches from White Sea down to northern Portugal. Within the Baltic it occurs frequently in the Western Baltic and to a limited degree in the Central Baltic to the island of Gotland. Records are restricted to Sweden, Denmark and Germany.

**Status:** Throughout its main distribution area it is a widespread and common species. The occurrence remains static or is even increasing locally within the last 10 years. Reductions have been documented from...

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<td><em>Virsodes serratum</em></td>
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<td>HELCOM Red List Category:</td>
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**Protection and Red List status in HELCOM countries**

**Habitats Directive**

**Responsable assessor:** Karin Fürhaupter

Kommenteeritud [JH20]: Is missing from the reference list!
several regions in the Baltic and were caused by habitat destruction or a reduced water transparency, but they occurred more than 30–60 years ago. In Sweden recent records indicating an increasing trend along the west-coast. (to be checked by HK or GJ) and a stable occurrence in the rest of its Swedish occurrence area. In Denmark the species occurred historically frequently at all stony bottoms and can still be found today at nearly all Danish coasts. Only at the most southern locations no recent references are available. In Germany the species occurred historically all along the German Baltic coastline and at open water reefs down to 15 meters. Today the vertical distribution limit is set around 6 m and the species 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 from 1950ies and the most drastic changes may have happened during the 1970ies. The overall area of occupancy has been reduced to ~ 50 % in Germany during those times.

_Fucus serratus_. Photos by Karin Fürhaupter.
Distribution map (will finally be edited by HELCOM)
Habitat and Ecology

*Fucus serratus* grows epilithic on stable hard substrates like stony bottoms, boulder fields and rocks. It is a perennial macroalgae with longevity of 2–5 years and a marine species, which can grow in salinities down to 8–10 psu. The further this species is distributed to the central Baltic (with lower mean salinities), the deeper it tends to grow due to the higher salinities occurring in deeper waters (submergence). Different to other marine regions (e.g. Helgoland) *F. serratus* is not penetrating into the intertidal or the uppermost sublitoral parts in the Baltic. The lower depth limit of *Fucus serratus* is used as one indicator 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 caused a reduced depth distribution with a remarkable loss in area distribution. This loss is more pronounced at its eastern distribution limit as *F. serratus* cannot shift in shallower areas there, because of the too low salinities. *Fucus serratus* forms monotypic dense meadows but can also grow mixed with *Fucus vesiculosus*. Smaller growing red algae like *Ahnfeltia plicata*, *Fucellaria lumbricalis* or *Coccolyclus truncatus*, can be found underneath the large brown algae, forming a kind of scrub. The surface of *Fucus 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* meadow forms an important biotope for invertebrates and locational bounded fish (e.g. black goby or scorpion fish) and serves as spawning and nursery ground for 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 common and abundant species. 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 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 *Fucus 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 (to be checked by GJ, HK). However, a lot of its former distribution area has been lost in Kiel Bay, Mecklenburg Bay and Arkona Basin. The species meets the criteria for “Least Concern” (LC).

Recommendations for actions to conserve the species
Common names

Denmark: Savtang
Estonia: -
Finland: Sahalaitalevä
Germany: Sägetang
Latvia: 
Lithuania: 
Poland: 
Russia: 
Sweden: Sågtång

References

www.artportalen.se (specify this reference)

Artdatabankens Obs. Database, Botanical Museum Lund (LD), Uppsala Museum of Evolution Herbarium (UPS); national data base of Sweden (www.artdatabanken.se)

Fürhaupter et al. (2004–2011): several national WFD-Monitoring reports

MADS, the national database for marine data of Denmark

MARIDATA, the database of MariLim GmbH for the German Baltic Sea macrophyte occurrences

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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**Taxonomical group:**
- Class: Phaeophyceae
- Order: Fucales
- Family: Fucaceae

**Species authority:**
- Linnaeus 1753

**Subspecies, Variations, Synonyms:**
- *Fucus ceranoides*
- *Fucus vesiculosus var. aestuarii*
- *Fucus vesiculosus var. angustifolius*
- *Fucus inflatus*
- *Fucus vesiculosus var. divaricatus*
- *Fucus vesiculosus var. balticus*
- *Fucus vesiculosus var. laternifructus*
- *Fucus vesiculosus var. sphaerocarpus*
- *Fucus divaricatus*
- *Fucus balticus*
- *Fucus exilis*
- *Fucus vesiculosus var. spiralis*
- *Fucus vesiculosus f. acutus*
- *Fucus vesiculosus var. alternans*
- *Fucus vesiculosus f. balticus*
- *Fucus axillaris f. balticus*
- *Fucus vesiculosus f. angustifolius*
- *Fucus vesiculosus f. filiformis*
- *Fucus vesiculosus var. filiformis*
- *Fucus vesiculosus f. nanus*
- *Fucus vesiculosus var. nanus*
- *Fucus vesiculosus f. plicatus*
- *Fucus vesiculosus f. subcostatus*
- *Fucus vesiculosus var. subcostatus*
- *Fucus vesiculosus var. chondriformis*
- *Fucus vesiculosus f. racemosus*
- *Fucus vesiculosus f. tenuis*
- *Fucus vesiculosus var. rotundatus*
- *Fucus vesiculosus f. crispus*
- *Fucus vesiculosus f. flabellatus*
- *Fucus vesiculosus f. robustus*
- *Fucus vesiculosus f. subglobosus*
- *Fucus vesiculosus f. terminalis*
- *Fucus vesiculosus f. turgidus*
- *Fucus vesiculosus f. viarorum*
- *Fucus vesiculosus f. lanceolatus*
- *Fucus axillaris var. subcostatus*
- *Fucus vesiculosus subsp. pseudoceranoides*
- *Fucus vesiculosus f. pseudoceranoides*
- *Fucus vesiculosus var. ceratiformis*
- *Fucus vesiculosus var. rigidus*

**Generation length:**
- 2–5 years [Lüning 1985]
Fucus vesiculosus f. angustifrons
Fucus vesiculosus f. fluviatilis
Fucus vesiculosus f. sphaerocarpus
Fucus vesiculosus f. abbreviatus
Fucus vesiculosus f. latus
Fucus vesiculosus f. subfusiformis
Fucus vesiculosus f. elongatus
Fucus vesiculosus var. grandifrons
Halidrys vesiculosus
Fucus vesiculosus f. ilicola
Virides vesiculosum
Fucus vesiculosus var. angustifrons

Description of major threats:-

IUCN Criteria:-

Global / European IUCN Red List Category: NE
Habitats Directive: -

Protection and Red List status in HELCOM countries:

Denmark: red listed 3 (endangered) and as part of a §30 biotope (Federal Nature Conservation Act)
Estonia: -
Finland: -
Germany: red listed 3 (endangered)
Latvia: -
Lithuania: red listed 3 (endangered)
Poland: -
Russia: red listed 3 (endangered)
Sweden: -

Responsible assessor: Karin Fürhaupter

Distribution and status in the Baltic Sea region

Distribution: 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 records can be found in all neighbouring countries. The species occurs in the Baltic with two different morphological forms: a typical epilithic and a special unattached form, which occurs in sheltered lagoons e.g. in Germany or Poland.

Status: Throughout its distribution area bladder wrack is a widespread and common species. The occurrence remains static. Reductions have been documented from some regions in the Baltic and were caused by habitat destruction or a reduced water transparency. But the reductions occurred more than 30–60 years ago. In Sweden the species occurs frequently from the west coast up to 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 all along the whole coastline with suitable substrate and can still be found today 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 resulted in a remarkable decline of area of occupancy. The decline started already from 1950ies. It still occurs in a narrow band along most German coastlines, but is missing today in some of the highly eutrophicated inner parts of bays and lagoons like 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 to the 1950ies but got lost due to the decreasing water transparency until the 1980ies and never returned since then. References from the outer coastline of Poland
as well as from the Kaliningrad area are missing. For Lithuania records exist for *Fucus vesiculosus* from the time period before the 1950ies (without specification of locality) and one record from 1998 (Labanauskaas, 2000). But for this newer record it is not clear if this refers to really attached specimens or just drifting individuals originating outside of Lithuania as no other surveys could detect *Fucus vesiculosus* after the 1950ies. From the Latvian coastline some references exist for the Gulf of Riga. In Estonia *F. vesiculosus* can be found all along the coastline. Beside some references in the Gulf of Riga bladder wrack still occurs at all historical locations. Also in Estonia *Fucus* disappeared from the deepest areas about 30 years ago, but currently there is no trend. *Fucus vesiculosus* is also distributed in the inner Gulf of Finland at the Leningrad Region and the Berezovye Islands, but no information about the status could be evaluated. For Finish waters the species occurs all along the northern coastline of the Gulf of Finland and the Archipelago Sea. Occurrence information is based solely on findings newer than 1995 as historical references from Finland could not be evaluated. References from the Quark are mainly classified to *Fucus* sp. and/or *Fucus radicans* and though *F. vesiculosus* exists there it is uncommon compared to *F. radicans*. References should be added: From the Gulf of Riga *Fucus* almost disappeared but has reappeared more recently. In Kaliningrad region the species has also occurred, but it is not known when it disappeared (most likely rather long time ago).
Distribution map

Distribution of Fucus vesiculosus in the HELCOM area
- Light blue: observations found in the indicated sub-basins
- Pink: <1995 (observations found before the year 1995)
- Red: >1995 (observations found after the year 1995)
- Blue: observations found both before and after the year 1995

0 75 150 300 Km
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 rocks but different to *F. serratus* it can also be found on *Mytilus* shells and smaller mobile stones. It is a perennial macroalgae with a longevity of 2–5 years and can grow in salinities down to ~2–3 psu. Compared to *F. serratus* it inhabits vertically also very shallow parts (hydrolitoral), which might fall dry and can stand therefore icing and drying to a certain degree. The lower depth limit of *Fucus vesiculosus* is set by light intensity and is used as an indicator for the ecological status in the WFD (Water Framework Directive) in several countries. Historically bladderwrack could be found down to 15 m depth in the Baltic; at present dense meadows are still occurring down to 14 m in Sweden but for other countries the maximum depth limit has shifted upwards. In Germany it is currently seldom found deeper than 2–4 m, single individuals occur down to 6 m depth. Also in Estonia *Fucus vesiculosus* disappeared from the deepest occurrences. As mentioned already for *Fucus serratus* the *Fucus* meadows form an important biotope for invertebrates and locational bounded fish (e.g. black goby or scorpion fish) and serves as spawning and nursery ground for other fish species. As *F. vesiculosus* is more widely distributed, taller growing and has a more pronounced canopy structure than *F. serratus*, its relevance in habitat forming can be estimated 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.

Finland: *F. radicans* versus *F. vesiculosus* situation?

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

It is a widespread and common and abundant species. The extent of occurrences (EOO) is estimated to 702 000 km². The area of occupancy (AOO) is more than >> 4 000 km². 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. Those values exceed clearly the thresholds given in the criteria. Reductions have been frequently reported from all neighbouring countries, but declines occurred in historic times (more than 30–100 years ago). During the last 10 years, the overall trend remains static. The species meets the criteria for “Least Concern” (LC).

Recommendations for actions to conserve the species

Common names
Denmark: Blæretang
Estonia: Põisadru
Finland: Rakkolevä
Germany: Blasentang
Latvia:
Lithuania:
Poland:
Russia:
Sweden: Blåstång

References

www.artportalens.se (specify this reference)
Artdatabankens Obs. Database, Botanical Museum Lund (LD), Uppsala Museum of Evolution Herbarium (UPS); national data base of Sweden (www.artdatabankens.se)
MADS, the national database for marine data of Denmark
MARIDATA, the database of MariLim GmbH for the German Baltic Sea macrophyte occurrences
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<td>Sweden:</td>
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| Responsible assessor: Karin Fürhaupter | |


Distribution and status in the Baltic Sea region

Widespread and rather common species in most areas of the Baltic Sea. In the northern Baltic Sea, the distribution area extends to the Quark and in the Gulf of Finland at least to the Finnish/Russian border. No trends seen in Sweden (except an increasing trend in Askö area) and Estonia (also floating form still abundant enough to be harvested in Estonia). Declines have been evidenced in many areas (Germany, Poland, 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.

Add references to this text: In Kaliningrad region only one population (boulders on sand, less than 5 km2) and no historical data. Vertical distribution not optimal. Abundant findings drifted on the shore in a few places, but only one actual location known in the sea.

*Furcellaria lumaricalis.*
Photos by Karin Fürhaupter.
Distribution Map
Habitat and Ecology

_Furcellaria lumbricalis_ grows in its typical form epilithic on stable hard substrates like stony bottoms, boulder fields and rocks. It is a perennial macroalga with longevity 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 a main occurrence between 8 and 12 m. Due to reduced water transparency the vertical depth distribution shifted upwards with the upper limit beginning already at 1–2 m and the lower limit around 8–10 m. The vertical main occurrence at present in the Western Baltic lies between 3–5 m, 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 WFD (Water Framework Directive) 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. Meadows existed historically also in the Western Baltic in such a density, that it was planned to harvest the species for carrageen production (Hoffmann 1952). At present the species seemed to be substituted in the Western Baltic by other perennials (e.g. _Coccolytus truncatus_, _Delesseria sanguinea_ or _Phycodrys rubens_) or annual filamentous species and the distribution area has been strongly reduced during the 1970ies and 80ies.

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. Abundances are in some countries very high and the species is used there economically.

Additional information from Kırşı Kostamo: Grows under _Fucus vesiculosus_ in the _Fucus_ belt and forms part of the red algal belt below the _Fucus_ belt. Reproduction sexual up to Gotland (?). North of Gotland very little information on the species reproduction mode. At the coast of Lithuania the specimens with swollen apical branches were found, most likely, indicating the sexual reproduction. Probably 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

It is a widespread and common and abundant species. The extent of occurrences (EOO) is estimated to 658 000 km². The area of occupancy (AOO) is more than >> 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. Those values exceed clearly the thresholds given in the criteria. Reductions have been frequently reported from all neighbouring countries, but declines occurred in historic times (more than 30 years ago). During the last 10 years, the overall trend remains static. However, a lot of its former distribution area has been lost in Kiel Bay and Mecklenburg Bay. The species meets the criteria for “Least Concern” (LC).

Recommendations for actions to conserve the species

-
Common names

Denmark: Gaffeltang
Estonia: Agarik
Finland: Haarukkalevä
Germany: Gabeltang
Latvia:
Lithuania:
Poland:
Russia:
Sweden: Kräkel

References

HELCOM Fact Sheet (compiled by Georg Martin): Furcellaria lumbricalis (Hudson J.V. Lamouroux 1813) (Rhodophyta)


MARIDATA, the database of MariLim GmbH for the German Baltic Sea macrophyte occurrences + Fürhaupter et al. (2004–2011): several national WFD-Monitoring reports

EMI database, the database of Estonian Marine Institute.


### Helminthora divaricata

**English name:**

**Scientific name:** *Helminthora divaricata*

**Taxonomical group:**

Class: Florideophyceae  
Order: Nemaliales  
Family: Liagoraceae

**Species authority:** (C.Agardh) J.Agardh 1852

**Subspecies, Variations, Synonyms:**

Helminthora stackhousei, Dudresnaya divaricata, Achrochaetium polyidis

**Generation length:**

- probably 1

**Description of major threats:**

**Threats in the future:**

**IUCN Criteria:**

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**Global / European IUCN Red List Category**

**Habitats Directive**

**Protection and Red List status in HELCOM countries**

- Denmark:  
- Estonia:  
- Finland:  
- Germany:  
- Latvia:  
- Lithuania:  
- Poland:  
- Russia:  
- Sweden: DD

**Responsible assessors:** Gustav Johansson

---

### Distribution and status in the Baltic Sea region

There are two rather recent Danish records from northern Kattegat. All Swedish records are from Skagerrak.
Helminthora divaricata on Polyides rotundus. Finavarra, Co Clare, Ireland; AlgaeBase ©M.D. Guiry
Distribution map (will finally be edited by HELCOM)
Habitat and Ecology

The Danish and Swedish records of the gametophyte have been epiphytes on *Polyides rotundus* and *Furcellaria lumbricalis* but it can also be found epilithically. The microscopic tetrasporophyte grows endophytically in *P. rotundus*.

Description of major threats

Assessment justification

The species 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 northern limit. The information available is insufficient to determine which of the red list categories that is most likely.

Recommendations for actions to conserve the species

Common names

Denmark:  
Estonia:  
Finland:  
Germany:  
Latvia:  
Lithuania:  
Poland:  
Russia:  
Sweden:

References

The Danish Biodiversity Information Facility, Botanical Museum, Copenhagen, the Phycology Herbarium

http://www.artfakta.se/Artfaktablad/Helminthora_Divaricata_232533.pdf
English name: Fourleaf Mare’s Tail

Scientific name: Hippuris tetraphylla

Taxonomical group:

Class: Magnoliidae
Order: Lamiales
Family: Hippuridaceae
Species authority: Linnaeus f.

Subspecies, Variations, Synonyms: 

Generation length: 

Reasons for being threatened:
Overgrowth of the open areas (A04.03), Ditching (J02.01.02), Other threat factors (J03), K01.03 = drying out, K04.01 = Competition, K06 = other forms or mixed forms of interspecific floral competition

Threats in the future:
Overgrowth of the open areas (A04.03), Ditching (J02.01.02), Construction (J02.02.02), Other threat factors (J03), K01.03 = drying out, K04.01 = Competition, K06 = other forms or mixed forms of interspecific floral competition

IUCN Criteria: B2ab(i, ii, iii, iv, v)

HELCOM Red List Category: EN

Global / European IUCN Red List Category: NE

Habitats Directive: Annex II species

Protection and Red List status in HELCOM countries:

Denmark: Protected status in the Nature Conservation Decree Annex 3(a), Threatened status in the Nature Conservation Decree Annex 4, Protected and Red Listed as NT
Germany: Red Listed as CR
Latvia: 
Lithuania: 
Poland: Red Listed as CR
Russia: 
Sweden: Red Listed as CR

Responsible assessor: Ville Karvinen

Distribution and status in the Baltic Sea region

In the Baltic Sea Hippuris tetraphylla has historically occurred along the whole coastline of Finland. One population is known from Västerbottenslän, Swedish coast. It has disappeared from the Swedish coasts of the Western Gotland Basin and the Northern Baltic Proper. The species has been strongly declining on its previously most abundant areas along the Finnish coasts and at the moment it is known to exist only in the Bothnian Bay and the Bothnian Sea. From the Gulf of Finland it has disappeared. In Finland it is classified as EN.
Hippuris tetrrophylla. Photo by: Terhi Ryttäri
Distribution Map
Habitat and Ecology

Hippuris tetraphylla is a perennial aquatic plant that 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 barely in fresh water or in brackish water with extremely low salinity. 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 populations of H. tetraphylla are at the moment on wide and open shallow waters 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 lack of shoreline grazing. The effects of eutrophication also include increased turbidity which negatively affects the growth of submersed aquatic plants such as Hippuris tetraphylla both by decreasing the amount of available light and by increasing silting and sedimentation resulting in aquatic vegetation being covered. Human induced threats to the species also include measures causing direct habitat destruction such as construction of shipping lanes and ports and estuarine and coastal dredging. In addition, increased boat traffic in shallow areas causes resuspension of sediments increasing turbidity and further accelerating 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.

Assessment justification

Meets criteria as continuing decline has been observed and is likely to continue.

Recommendations for actions to conserve the species

Of known occurrences 76% are already in Natura 2000 –areas. Actions for conservation could include protecting as much as possible of the remaining areas and controlling urbanisation in areas where the species can be found.

Common names

Denmark:
Estonia: -
Finland: nelilehtivesikuusi
Germany:
Latvia:
Lithuania:
Poland:
Russia: Хвостник четырёхлистный, Водяная сосенка четырёхлистная
Sweden: ishavshästsvans
References


**English name:** Foxtail stonewort  
**Scientific name:** Lamprothamnium papulosum

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<td>(Wallroth) J. Groves 1916</td>
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**Description of major threats:**
- Construction (D03)
- Physical disturbance (G01, G05)
- Contaminant pollution (H01), Ditching (J02.01), Construction (J02.12)
- F01 = marine and freshwater aquaculture

**Threats in the future:**
- Construction (D03), Physical disturbance (G01), Contaminant pollution (H01), Ditching (J02.01), Construction (J02.12), Acifidication (M01), Climate change (M02)

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**Protection and Red List status in HELCOM countries:**
- Denmark: -
- Estonia: -
- Finland: -
- Germany: red listed – 1 (threatened by extinction) and as part of a §30 biotope (Federal Nature Conservation Act)
- Latvia: -
- Lithuania: -
- Poland: -
- Russia: -
- Sweden: red listed as EN

**Responsible assessor:** Karin Fürrhaupter

**Distribution and status in the Baltic Sea region**

Distribution: Main distribution area of *L. papulosum* is the western Baltic Sea. Beside some historic 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.

Status: All recent and former occurrences are restricted to Denmark, Germany and the west coast of Sweden. In Sweden there are six recent records in three geographically separated areas but they are all located just outside the HELCOM area. Historic records from 1860–1933 exist from five geographically
separated locations (Skåne, Halland, Västergötland). Although several historic locations have been assessed within the last years, *L. papulosum* could not be detected there. In Denmark there are three records (from two separated locations) newer than 1995 (northern Sjælland, Fyn), but none of them is 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 historic 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 localities. Seven localities have disappeared and two are gained newly, possibly overlooked historically. Bays, fjords and lagoons in Germany are regularly checked for WFD monitoring, so it can be assumed that those recent localities represent the current distribution range of this species in Germany. For Ireland and Great Britain it is known to be a rare occurring species and appears to be declining throughout its range.

*Lamprothamnium papulosum*. Photo by Karin Fürhaupter.
Distribution map (will finally be edited by HELCOM)
Habitat and Ecology

*L. papulosum* is a characteristic component within shallow, sheltered bays, fjords and coastal lagoons. It grows on sandy bottoms with low 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 was 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 historic records). The lower salinity boundary for distribution seems to be around 8–10 psu. It typically occurs in depth ranges between 0.5 and max. 2 m. All recent records in Germany are no deeper than 1 m. *L. papulosum* is associated with other charophytes like *Chara baltica* and *Ch. canescens* and higher plants like *Ruppia* spp., *Zannichellia palustris* and *Zostera noltii*, but seems to avoid densely vegetated areas. It never built up dense populations. In general only single specimens can be found throughout its distribution range. Therefore this species 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 sensible 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 aquaculture in bays may be intensified.

Assessment justification

The geographic range of the species is considered restricted and continuously 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 be 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”, B2a, b (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: Лампротамний пупырчатный
Sweden: Axsträfse

References

Artdatabankens Obs. Database, Botanical Museum Lund (LD), Uppsala Museum of Evolution Herbarium (UPS); national data base of Sweden (www.artdatabenks.se)
Fürhaupter et al. (2004–2011): several national WFD-Monitoring reports
Krause-Jensen, D., University of Arhus: personal communication with Danish expert
MADS, the national database for marine data of Denmark
MARIDATA, the database of MariLim GmbH for the German Baltic Sea macrophyte occurrences
MarLIN, The Marine Life Information Network - information to support marine species and habitat conservation, sustainable management, protection and planning (www.marlin.ac.uk)
**English name:**
-  

**Scientific name:**
*Myriocladia lovenii*

**Taxonomical group:**

**Class:** Phaeophyceae  
**Order:** Ectocarpales  
**Family:** Chordariaceae

**Species authority:**
J. Agardh, 1841

**Subspecies, Variations, Synonyms:**
-  

**Generation length:**
-  

**Description of major threats:**
-  

**Threats in the future:**
-  

**IUCN Criteria:**
-  

**HELCOM Red List Category:**
**DD**

**Global / European IUCN Red List Category**
-  

**Habitats Directive**
-  

**Protection and Red List status in HELCOM countries**
- Denmark: -  
- Estonia: -  
- Finland: -  
- Germany: -  
- Latvia: -  
- Lithuania: -  
- Poland: -  
- Russia: -  
- Sweden: Red listed as DD

**Protection in HELCOM countries:**
-  

**Responsible assessor:** Karin Führhaüper

---

**Distribution and status in the Baltic Sea region**

**Distribution:** Distribution area of *M. lovenii* is the north-western Baltic Sea with records in Sweden and Denmark. It has never been found south of the Belt Sea. This species also seldom occurs outside of the HELCOM area. Very few records exist from the British Isles, Ireland, France and Norway. The species occurs also in North America (Alaska).

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

No photos available yet. There would be some at [seaweeds.uib.no](http://seaweeds.uib.no). (or a photo of Swedish herbarium material?)

Kommenteeritud [PK23]: we didn't receive an answer from the seaweed.uib.no, so it would be best to ask if the Swedish experts could take a photo of the species.
Distribution map (will finally be edited by HELCOM)
Habitat and Ecology

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

Description of major threats

Assessment justification

The species has been recorded too rarely within the Baltic and the neighbouring marine areas. The data base cannot serve as an appropriate basis for the IUCN assessment criteria. Even the appropriate habitat cannot be exactly specified for the Baltic.

Recommendations for actions to conserve the species

Common names

- Denmark: slimtrevl
- Estonia: -
- Finland:
- Germany:
- Latvia:
- Lithuania:
- Poland:
- Russia:
- Sweden:

References

Artdatabankens Obs. Database, Botanical Museum Lund (LD), Uppsala Museum of Evolution Herbarium (UPS); national data base from Sweden


MADS, the national database for marine data from Denmark


www.algaebase.org
Distribution and status in the Baltic Sea region

In the Baltic Sea the only records of the species are from the south coast of Finland. The species has not been found at the known former sites in Pojo Bay in any of the investigations undertaken during the 2000’s (Peuraniemi 2005, Henricsson & Oulasvirta 2007). Of the other previously known sites near Mussalo, Kotka no records exist after the 1960’s. There is only one recent finding, from Pyhtää. (in 2008, Koistinen, HY, pers. comm.). In Finland *Nitella confervacea* is classified as NT.
Nittella confervacea, Drammensfjorden, Norway; AlgaeBase © A. Langangen
Distribution Map
Habitat and Ecology

*Nitella confervacea* is a freshwater species that is also found in slightly brackish water. It grows on bare bottom areas between reed belts and the shore, occurring under sheltered conditions mainly on sand, silt, clay and mud in shallow water between 0.1–0.7m. Its salinity amplitude ranges from 0 to 2.25 psu. (Koistinen 2003). According to Luther & R. Munsterhjelm (1983), *Nitella confervacea* is a weak competitor and likely to suffer from eutrophication and the advance of reed belts caused by lack of shoreline grazing.

Description of major threats

All major threats to the species are related to either decline of habitat quality or destruction of suitable habitat. *Nitella confervacea* grows in shallow, protected 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 lack of shoreline grazing. The effects of eutrophication also include increased turbidity which negatively affects the growth of submerged aquatic plants such as charophytes both by decreasing the amount of available light and by increasing settling and sedimentation resulting in aquatic vegetation being covered. Human induced threats to charophytes also include measures causing direct habitat destruction such as construction of shipping lanes and ports and estuarine and coastal dredging. In addition, increased boat traffic in shallow areas causes resuspension of sediments increasing turbidity and further accelerating eutrophication.

Assessment justification

Meets criteria B2ab(iii) as continuing eutrophication and reed belt expansion is likely to result in continuing decline of area, extent or quality of habitat.

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.

Common names

- Denmark: nitell
- Estonia: väike nitell
- Finland: tummasiloparta
- Germany: nitella konfer wastewater
- Latvia: nitella konfer wastewater
- Lithuania: kurklinis menturdumblis
- Poland: nitella konfer wastewater
- Russia: nitell konfer wastewater
- Sweden: mörkslinke/ånärmartelke
References


**English name:** Many-branched Stonewort  
**Scientific name:** *Nitella hyalina*

**Taxonomical group:** Charophytes  
**Class:** Charophyceae  
**Order:** Charales  
**Family:** Characeae

**Species authority:** (D.C. in Lam. & DC.) C. Agardh 1824

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<td><em>Nitella hyalina var. puduchattirensis</em> D. Subramanian, 1985</td>
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<td><em>Nitella longifurca</em> (F.J. Ruprecht) Wallman, 1853</td>
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**Reasons for being threatened:**  
Overgrowth of the open areas (A04.03),  
Water traffic (D03, G01.01.01),  
Construction (J02.02),  
Other threat factors (J03),  
K01.03, K04.01 - Competition

**Threats in the future:**  
Overgrowth of the open areas (A04.03),  
Water traffic (D03, G01.01.01),  
Construction (J02.02),  
Other threat factors (J03),  
K01.03, K04.01

**IUCN Criteria:** B2ab(iii)  
**HELCOM Red List Category:** EN

**Global / European IUCN Red List Category**  
**Habitats Directive** -

**Protection and Red List status in HELCOM countries:**  
**Denmark:** -  
**Estonia:** -  
**Finland:** "Threatened" status in the Nature Conservation Decree Annex 4, Red Listed as VU  
**Germany:** -  
**Latvia:** -  
**Lithuania:** -  
**Poland:** -  
**Russia:** -  
**Sweden:** -

**Responsible assessor:** Ville Karvinen

**Distribution and status in the Baltic Sea region**

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

Distribution of Nitella hyalina in the HELCOM area
- Blue: observations found in the indicated sub-basins
- Pink: <1995 (observations found before the year 1995)
- Light blue: observations found both before and after the year 1995

[Map showing distribution areas with legend]
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, on bare bottoms between reed stands and in sheltered openings inside them but can also be found in moderately exposed areas in shallow water. In Finland it has been growing in salinities ranging from fresh water 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, protected 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 lack of shoreline grazing. The effects of eutrophication also include increased turbidity which negatively affects the growth of submerged aquatic plants such as charophytes both by decreasing the amount of available light and by increasing silting and sedimentation resulting in aquatic vegetation being covered. Human induced threats to charophytes also include measures causing direct habitat destruction such as construction of shipping lanes and ports and estuarine and coastal dredging. In addition, increased boat traffic in shallow areas causes resuspension of sediments increasing turbidity and further accelerating eutrophication.

Assessment justification

Meets criteria B2-ab(iii) as continuing eutrophication and reed belt expansion is likely to result in continuing decline of area, extent or quality of habitat.

Recommendations for actions to conserve the species

A 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.

Common names

Danmark: —
Estonia: —
Finland: kalvassiloparta
Germany: —
Latvia: —
Lithuania: žalsvasis menturdamilis
Poland: —
Russia: нителла гиалиновая
Sweden: blekslinke

References


**Starry stonewort**

**Scientific name:** *Nitellopsis obtusa*

**Taxonomical group:** Charophytes  
**Class:** Charophyceae  
**Order:** Characea  
**Family:** Charales

**Species authority:** (Desv. In Loisel.) J. Groves 1919

**Subspecies, Variations, Synonyms:**
- Chara stelligera A.Bauer, 1829
- Chara ulvoides A.Bertoloni, 1825
- Nitella bertoloni F.T.Kützing, 1857
- Nitella stelligera (A.Bauer in Reichenbach) F.T.Kützing, 1843
- Nitella stelligera var. ulvoides (A.Bertolini) F.T.Kützing, 1849
- Nitella ulvoides (A.Bertolini) F.T.Kützing, 1843
- Nitellopsis obtusa f. ulvoides (Bertolini) R.D.Wood, 1962

**Generation length:**

**Reasons for being threatened:**
- Water traffic (D03, G01.01.01), Construction (J02.02.02, J02.11)

**Threats in the future:**
- Water traffic (D03, G01.01.01), Construction (J02.02.02, J02.11)

<table>
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<tr>
<th>IUCN Criteria:</th>
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<td><strong>B – add. NT – number of locations</strong></td>
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**Global / European IUCN Red List Category**

- NE

**Protection and Red List status in HELCOM countries**

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<th>Country</th>
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<tr>
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<tr>
<td>Estonia</td>
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<tr>
<td>Finland</td>
<td>Threatened status in the Nature Conservation Decree Annex 4, Red Listed as VU</td>
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<tr>
<td>Germany</td>
<td>-</td>
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<td>Latvia</td>
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<tr>
<td>Sweden</td>
<td>Red listed as VU (B2ab[iii,v])</td>
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</tbody>
</table>

**Responsible assessor:** Ville Karvinen

**Distribution and status in the Baltic Sea region**

In the Baltic Sea *Nitellopsis obtusa* has been found in Finland, Lithuania and Russia. In Sweden the species has only been found 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 is also found in several freshwater lakes. In most of the former locations on the eastern part of the south coast the species has either disappeared or decreased probably due to dredging or colonization by *Phragmites*. There are recent observations of the
species in brackish water in the Pojo bay (Pohjanpitäjänlahti) and Tammisaari area. In Lithuania there has been one find from 2001, the earlier ones being from the 1950's and 1970's. 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 gulf of Vyborg in 1988. From Denmark there is a find from 1917 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, ÅÅ, pers. comm.).
Distribution Map
Habitat and Ecology

*Nitellopsis obtusa* is a freshwater species that can also be found in brackish water. The species tolerates salinity up to 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 the Lithuanian area of occurrence salinity has been documented to be in the range of 0–8 psu (Urbaniak 2003). It is found in sheltered sites, along *Phragmites* belts and other sites with abundant macrophyte vegetation. In Finland the bottoms it has been found on include mud, clay, sand and stones and in Lithuania sandy and silty sediments. In Finland it’s depth range has been found to be 0,8–3m. (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 to the habitat of the species continue to threaten the species. Among these are construction of shipping lanes and ports, estuarine and coastal dredging and boat traffic which all directly destroy habitat suitable for the species.

Assessment justification

Does not meet criteria for higher categories as there is no evidence of continuing decline even though both EOO and AOO have decreased since the 1950’s. Furthermore it has been suggested (Koistinen & Munsterhjelm 2001) that unlike most other charophytes this species actually seems to be favoured by eutrophication. However other anthropogenic threats might cause a decline in the future and therefore monitoring is needed.

Recommendations for actions to conserve the species

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

Common names

Denmark: Stjøemetråd
Estonia: -
Finland: tähtimukulaparta
Germany: -
Latvia: -
Lithuania: Žvaigždėtasis maurošakis
Poland: Krynicznica tera
Russia: Нителлопсис Притуплённый
Sweden: stjärnalinke
References


### Distribution and status in the Baltic Sea region

Several locations along the shores of the Bothnian Bay, the Quark, the Bothnian Sea (SE and FI) and the Gulf of Finland (FI and RU). An old record in Estonia has not been recovered. The species has declined in the whole area but not as much as the inland occurrences.

**Distribution in Russia:** This species occurs in Russia in the eastern Gulf of Finland only from Neva Bay – along coasts between Olgino and Lisii Nos, in vicinity of Sestroretsk (station Razliv) (RU6, RU9, RU19 - also map 97 on page 472) and on Kotlin Island in Neva Bay (data by Elena Glazkova, 2004). According to old records by Finnish botanists in 1900-s the species was known from Vyborg Bay (near Vyborg, Monrepo park, on the seacoast) (Lindberg, 1906 – Herbarium in Helsinki)), but now it disappeared from this locality (RU19). Nowadays known only from Neva Bay.
Distribution map

Distribution of Persicaria foliosa in the HELCOM area

Observations found in the indicated sub-basins
Habitat and Ecology

Annual, small plant that grows on the shores of lakes, rivers and the Baltic Sea in shallow water on soft sandy or sandy-silty sediment bottoms, usually among reeds. The species grows also in rocky pools in the outer archipelago. The species 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 ~3 psu.

Description of major threats

In the Baltic Sea, overgrowth by higher vegetation, e.g. reed, for example after cessation of grazing or due to eutrophication, in inland waters also water engineering and regulation of water level.

*Persicaria foliosa* is also very sensitive to water pollution (RU6).

Limiting factors in the eastern Gulf of Finland: water pollution in the Gulf of Finland and human disturbance of the coasts. Over the last decades, the size of the population in Neva Bay decreased considerably after construction of damp in the Neva Bay.

Assessment justification

The limited AOO (c. 300 km²) and severely fragmented distribution together with a continuous decline of the population assumed to concern 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)).

This species is included in Red Data Book of St. Petersburg Nature (RU6), Red Data Book of Eastern Fennoscandia and Red Data Book of Baltic Region.

Recommendations for actions to conserve the species

-

Common names

Danmark:
Estonia: leht-kirburohi
Finland: lietetatar
Germany:
Latvia:
Lithuania:
Poland:
Russia: Горец многолистный
Sweden: Ävjepilört
References


English name: Flatstalked pondweed, Flatstalked Pondweed, Fries’ Pondweed
Scientific name: Potamogeton friesii

Taxonomical group: Vascular plants
Class: Liliopsida
Order: Alismatales
Family: Potamogetonaceae
Subspecies, Variations, Synonyms: Potamogeton mucronatus

Reasons for being threatened:
Random threat factors (U)

IUCN Criteria: B - add NT - a (# of locations)
HELCOM Red List Category: NT

Global / European IUCN Red List Category NE
Habitats Directive -

Protection and Red List status in HELCOM countries:
Denmark:
Estonia: Red listed as LC
Finland: “Threatened” status in the Nature Conservation Decree Annex 4, Red listed as NT
Germany:
Latvia:
Lithuania:
Poland:
Russia:
Sweden: Red listed as NT

Responsible assessor: Ville Karvinen

Distribution and status in the Baltic Sea region

In the Finnish waters of the Baltic Sea Potamogeton friesii is found on the south coast (north coast of Gulf of Finland) and Bay of Bothnia (Hertta). There have also been recent findings of the species on the Åland islands but due to land uplift the former bays are becoming lakes and currently have less than 2% salt content (Tore Lindholm, ÅA, pers. comm.). Previously the species has been found at the Pojo Bay but is now suspected of having disappeared from the area as it has not been found during the 2000’s. In Sweden the species has been found in the northernmost part of the Bothnian Bay (Forsberg & Pekkari 2000). In Finland Potamogeton friesii is classified as NT (Rassi et al 2001). In Russia the species is only found in fresh water.
Nodal glands of *Potamogeton friesii*

Terminal bud of *Potamogeton friesii*

Leaf venation of *Potamogeton friesii*

*Potamogeton friesii*. Photos by: Don Cameron, Maine Natural Areas Program
Distribution Map
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 to the habitat of the species continue to threaten the species. Among these are construction of shipping lanes and ports, estuarine and coastal dredging and boat traffic which all directly destroy habitat suitable for the species.

Assessment justification

Meets criteria of additionally NT because of area of occupancy and number of locations.

Recommendations for actions to conserve the species

The species is quite rare and not much is known about its ecology and therefore more research and data is needed for recommendations.

Common names

Denmark:  
Estonia: ogaterav penikeel  
Finland: otalehtivita  
Germany:  
Latvia:  
Lithuania:  
Poland:  
Russia: Рдест Фриза  
Sweden: uddnate

References

Forsberg, Å., Pekkari, S. 2000. Undersökningar av undervattensvegetation och vattenkemi i nordligaste Bottenviken. Länsstyrelsen I norrbottenslän , 77 pp. ISSN 0283-9636. ("Investigations on the aquatic vegetation and water chemistry in the northernmost Bay of Bothnia", in Swedish)


Hertta – The Finnish Environmental Administration Database


**Distribution and status in the Baltic Sea region**

One Swedish record (1911) from Stora Karlsö (Western Gotland Basin). According to Ruth Nielsen’s Danish checklist (2005) there is also at least one record from northern Kattegat. There is a great risk that this species is overlooked.
Rosengniella constricta in the upper intertidal, Fossil Island, Pirates Bay, Tasmania; AlgaeBase ©M.D. Guiry
Distribution map (will finally be edited by HELCOM)
Habitat and Ecology

*R. constricta* grows epilithically in the supralittoral, 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

- 

Assessment justification

This species 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 determine which of the red list categories that is most likely.

Recommendations for actions to conserve the species

- 

Common names

- Denmark:
- Estonia:
- Finland:
- Germany:
- Latvia:
- Lithuania:
- Poland:
- Russia:
- Sweden:

References

http://www.nathimus.ku.dk/bot/DIV/distribution-index.pdf


Distribution and status in the Baltic Sea region

No recent records. There are several records from the Swedish east coast (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).
Distribution map (will finally be edited by HELCOM)
Habitat and Ecology

A marine species normally growing epilithically. Although, 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

- 

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 that is 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

- 

Common names

Denmark: Estonian:
Finland: German:
Latvia: Lithuanian:
Poland: Polesian:
Russia: Russian:
Sweden: Swedian:

References

The Danish Biodiversity Information Facility, Botanical Museum, Copenhagen, the Phycology Herbarium
**English name:** Common eelgrass  
**Scientific name:** *Zostera marina*

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<td>Order: Najadales</td>
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<th>Generation length:</th>
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<td><em>Zostera marina</em> subsp. angustifolia</td>
<td>&gt;10 (expert judgement)</td>
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<td>Habitats Directive</td>
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**Protection and Red List status in HELCOM countries:**
- Denmark: Red Listed as LC
- Estonia: Red Listed as LC
- Finland: Red Listed as NT
- Germany: LC
- Latvia: |
- Lithuania: NT
- Poland: |
- Russia: |
- Sweden: Red Listed as LC

**Responsible assessor:** Karin Förhaupter

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**Distribution and status in the Baltic Sea region**

Distribution: *Zostera marina* is widely distributed in the northern Pacific and Atlantic. Along the European Atlantic coast the White Sea marks the northern and Gibraltar the southern distribution boundary. It is also distributed in the Mediterranean (in brackish bays and lagoons) and Black Sea. Within the Baltic it occurs in the Western and Central Baltic up to the Gulf of Finland and Archipelago Sea. Records can be found at least historically in all neighbouring countries of the Baltic Sea with the exception of Lithuania.
Status: It is common and abundant throughout its distributional range in the Baltic. The occurrence remains static in recent years. Reductions occurred massively in the 1930ies due to the eelgrass wasting disease and later due to a reduced water transparency, which caused subsequent a decline in the depth distribution of *Zostera*. In Sweden common eelgrass can be found from locations at the west coast up to the area of Stockholm/Uppsala at the east coast. As the west coast is hard bottom dominated, it occurs more frequently along the east coast (should be checked by HK/GJ). In Denmark *Zostera marina* occurs frequently at all sheltered and low exposed locations. In Germany *Zostera marina* could be found historically all along the coastline down to at least 10 m depth. Only at the most exposed locations references are lacking. Today dense eelgrass meadows are distributed down to 4–5 m but individual plants and small patches may reach 9–10 m along the eastern German coastline. Reductions in area distribution are frequently documented for inner bays and lagoons like the Greifswalder Bodden, the Schlei Fjord and the Darß-Zingst Bodden Chain. In Poland *Z. marina* formed meadows to 10 m depth in the Puck Lagoon during the 1950ies. Until the late 1980ies the meadows were replaced by filamentous brown algae and *Zannichellia palustris*. Today *Z. marina* still persists in a small area in the northern Puck Lagoon. Outside the Puck Lagoon historical reference exists from Swinoujscie and a few new references from the outer coastline. *Zostera marina* is distributed also in the Kaliningrad region. Along the Lithuanian coastline the species has never been found. It is assumed that along the outer coastline the exposure is too high and in the sheltered Vistula Lagoon the salinity is too low to enable growth of *Zostera*. In Estonia eelgrass can be found in the northern Gulf of Riga, West-Estonian Archipelago Sea and the western Gulf of Finland. Beside some references in the Gulf of Riga eelgrass is still distributed in all historical locations. For Finish waters eelgrass occurs only at the northwestern coastline of the Gulf of Finland and the Archipelago Sea, but they are all newer than 1995. There are no long-term data for eelgrass distribution, except for one eelgrass site in southwest Finland, where in time period 1968-1993 no change in density was recorded.
Distribution map (will finally be edited by HELCOM)
(data from Latvia are missing, Swedish data are only delivered as “border” of occurrence – no information about suitable substrate is included and data for occurrence in Kaliningrad region regionally imprecise)
Habitat and Ecology

Zostera marina is distributed in the sublitoral on sandy mud to sand but grows also on gravel mixed with coarse sand. Whereas it may penetrate into the intertidal in other marine areas (e.g. Wadden Sea), it avoids places, where it might fall dry wind-induced in the Baltic Sea. It is a characteristic component within sheltered bays, inlets and fjords but grows also along the outer coastline, if the exposure degree is not too high. It is a marine species, which occurs in brackish environments down to about 5 psu of surface waters. Its upper growth limit is set by exposure. At sheltered sites Zostera marina shoots can be found already at 0,5 m depth and dense meadows from about 1 m depth. At more exposed sites the upper limit occurs between 2–3 m. The lower depth limit of Zostera marina is set mainly by light intensity and is used as an indicator for the ecological status in the WFD (Water Framework Directive) in several countries. Historically eelgrass could be found down to 10–12 m depth in the Baltic; at present dense meadows are seldom found deeper than 6 m, single shoot occur down to 9–10 m depth. Zostera marina built up dense monotypic meadows at higher salinity ranges. At lower salinities other higher plants (Potamogeton pectinatus, Zannichellia palustris) and charophytes co-occur within the meadows. Due to the high growth of eelgrass (and subsequent shading) those species are not intermingled with Zostera shoots, but rather scattered between Zostera patches. Eelgrass meadows form an important biotope for invertebrates and serve as spawning and nursery ground for several fish species. It serves also as an important food source for migrating water birds like brent geese and widgeons.

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, infection of plants and decreasing water transparency due to eutrophication.

Assessment justification

It is a widespread and in most areas common and abundant species. The extent of occurrences (EOO) is estimated to 507 000 km². The area of occupancy (AOO) is more than >> 4 000 km². Those values exceed clearly the thresholds given in the criteria. Reductions have been frequently reported from all neighbouring countries, but although the generation time is difficult to estimate, it is obvious that declines occurred in historic times (more than 30–80 years ago). Those historic reductions caused nearly an extinction of Zostera marina in some of the countries (Poland). During the last 10 years, the overall trend for the other countries remains static. The species meets the criteria for “Least Concern” (LC).

Recommendations for actions to conserve the species

–
**Common names**

Denmark: Ålegræs/Bændeltang  
Estonia: Pikk merihein  
Finland: Meriajokas  
Germany: Gemeines Seegras/Echtes Seegras  
Latvia:  
Lithuania:  
Poland: Взморник морской  
Sweden: Bandtång

**References**


Artdatabankens Obs. Database, Botanical Museum Lund (LD), Uppsala Museum of Evolution Herbarium (UPS); national data base of Sweden (www.artdatabanken.se)

EMI database, the database of Estonian Marine Institute

Fürhaupter et al. (2004–2011): several national WFD-Monitoring reports


MADS, the national database for marine data of Denmark

MARIDATA, the database of MariLim GmbH for the German Baltic Sea macrophyte occurrences

MarLIN, The Marine Life Information Network - information to support marine species and habitat conservation, sustainable management, protection and planning (www.marlin.ac.uk)
**Scientific name:** Zostera noltii

**Taxonomical group:** Species authority: Hornemann 1832

**Class:** Zosteraceae **Order:** Najadales **Family:** Zosteraceae

**Subspecies, Variations, Synonyms:**

Zostera nana

**Generation length:** >10 years (expert judgement)

**Description of major threats:**

- Construction (D03)
- Physical disturbance (G01, G05)
- Contaminant pollution (H01)
- Construction (J02.01, J02.12)

**Threats in the future:**

- Construction (D03), F01
- Physical disturbance (G01, G05)
- Contaminant pollution (H01)
- Construction (J02.01, J02.12)
- Climate change (M01, M02)

**IUCN Criteria:** B2a, b (iii, iv)

**HELCOM Red List Category:** VU

**Global / European IUCN Red List Category**

LC

**Habitats Directive**

-

**Protection and Red List status in HELCOM countries:**

- Denmark:
- Estonia:
- Finland:
- Germany: red listed – 1 (threatened by extinction) and as part of a §30 biotope (Federal Nature Conservation Act)
- Latvia:
- Lithuania:
- Poland:
- Russia:
- Sweden: Red listed as VU

**Responsible assessor:** Karin Fürhaupter

### Distribution and status in the Baltic Sea region

**Distribution:** Zostera noltii is widely distributed along the European Atlantic coasts with the Shetland Islands and southern Norway at its northern distribution boundary and Mauretania at its southern boundary. It is also distributed in the Mediterranean and Black Sea. Within the Baltic it occurs only in the western Baltic. It has never been found east of the Darß Sill.

**Status:** All recent and former occurrences are restricted to Denmark, Germany and the west coast of Sweden. In Sweden exist more than 130 records for this species, but only 40 records are newer than 1995. Within four HELCOM-quadrates the species was found both before and after 1995 and within two locations the Zostera noltii was found only recently. In Denmark 174 records in 23 geographically separated areas (time period 1982–2009) could be identified. There is no information about historic records from Denmark. In Germany there are about 86 recent records in nine geographically separated areas (time period 2003–2011) and 22 historic records from seven geographically separated areas.
Zostera noltii – dark green plants growing within young *Zannichellia palustris* plants (light green) and epiphytes by Karin Fürhaupter.
Distribution map (will finally be edited by HELCOM)
Habitat and Ecology

Zostera noltii is distributed on intertidal flats consisting of mud to muddy sand. In the Baltic Sea it is a characteristic component within shallow, sheltered bays, inlets and fjords and grows there 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 down shore with decreasing salinity. Therefore in brackish waters, it may become permanently submerged. However as it inhabits the upper most sublittoral parts between 0.25 and 1 m, it can fall dry by time to time also in the Baltic (wind-induced). Although Zostera marina occurs at the same locations like Zostera noltii, the species are not mixing with each other, as Zostera marina inhabits occurs deeper than 1 m. Zostera noltii is associated more often with Ruppia spp. and Zannichellia palustris or some charophytes. It can easily be overlooked due to a similar appearance like Ruppia spp. underwater (unfertile plants). It serves as an important food source for migrating water birds like brent geese and widgeons.

Description of major threats

The species is restricted to very shallow bays, inlets and fjords with restricted water exchange and high eutrophication loads from agriculture. Additionally those bays are often opposed to coastal defence constructions, harbour constructions and high impact from beach tourism and sport activities. In the future higher water temperature and changes in the salinity range due to climate change may threat the population.

Assessment justification

The geographic range of the species is considered restricted and continuingly declining, mainly due to eutrophication. All recent and former occurrences are restricted to the west coast of Sweden, Denmark and Germany. The generation time is difficult to estimate, so it is not clear, if most of the Danish records maybe too old. The extent of occurrences (EOO) is estimated < 50 000 km². The area of occupancy (AOO) is less than < 2 000 km². The population is fragmented due to the occurrence in separated localities without connections to each other. 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, B2a, b (iii, iv).

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: Dvärg-Bandeltång
Estonia: -
Finland: Pikkuajokas
Germany: Zwergseegras
Latvia: -
Lithuania: -
Poland: -
Russia: -
Sweden: Dvärgbandtång

References

Artdatabankens Obs. Database, Botanical Museum Lund (LD), Uppsala Museum of Evolution Herbarium (UPS); national data base of Sweden (www.artdatabenkens.se)


Fürhaupter et al. (2004–2011): several national WFD-Monitoring reports

MADS, the national database for marine data of Denmark

MARIDATA, the database of MariLim GmbH for the German Baltic Sea macrophyte occurrences

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

Protection status in Finland:

"Protected" status in the Nature Conservation Decree Annex 3(a): Alisma wahlenbergii, Hippuris tetrphylla, Polygonum foliosum

"Threatened" status in the Nature Conservation Decree Annex 4: Hippuris tetraphylla, Nitella hyaline, Nitellopsis obtuse, Potamogeton friesii

"Strictly protected" status in the Nature Conservation Decree Annex 4: Chara braunii, Alisma wahlenbergii (has also a species specific protection plan), Nitella confervacea (Listed in the Annex 4 with the synonym Nitella batrachosperma)


Tuli vielä mieleen, että Jannicalta saamani ohjeen mukaan SIS:ien threat codes -kohdassa rehevöityminen laitettiin koodella J02 (Human induced changes in hydraulic conditions) tai J03 (Other ecosystem modifications) ja Description of major threats kohtaan tarkempi selitys asiasta. Tämä siis siksi, että ei ole olemassa omaa koodia “Anthropogenic eutrophication” vaikka luonnolliselle prosessille omania löytyykin. Nyt alkanen luontodirektiivin raportointikierron kouluissa kuitenkin annettiin ohjeeksi, että raportoinnissa rehevöitymisestä käytetään koodia H01.05 (Diffuse pollution to surface waters due to
agricultural and forestry activities). Tätä voisi ehkä miettiä vielä, koska mielestäni jälkimmäinen sopisi paremmin ja esim. luontodirektiivin raportoinnissa koodien pitää olla välitsikkotasoja tarkempia (eli raportointilomakke ei hyväksy koodiksi esim. C tai C01 vaan pitäisi olla vähintään C01.01 tai vielä tarkempi).