



# Introduction to marine species of the northern Bothnian Bay

# Preface

This booklet was developed during the SEAmBOTH project. A project in which partners from Sweden and Finland mapped the sea floor and marine life of the northern Bothnian Bay in order to produce marine maps over the area. This introduction to marine species in the northern Bothnian Bay was made with the purpose of giving an easy, first glimpse into the underwater world of plants in the area. It also provides guidance to where different plants might be found and highlight their functions within the ecosystem.

We hope the booklet will give you a better understanding of the incredible nature below the surface and inspire further reading, investigation, and exploration of it and its inhabitants.

The SEAmBOTH project was funded by Interreg Nord and cofounded by the Swedish Agency for Marine and Water Management and Lapin liitto. The project was coordinated by Metsähallitus, while other partners were the County Administrative Board of Norrbotten, Geological Survey of Sweden, Geological Survey of Finland, Centre for Economic Development, Transport and the Environment (North Ostrobothnia and Lapland), and the Finnish Environment Institute. The project started on May 1st, 2017 and finished on April 30th, 2020.

## **Red list categories**

**RE:** Regionally Extinct

**CR:** Critically Endangered

**EN:** Endangered

**VU:** Vulnerable

**NT:** Near Threatened

**LC:** Least Concern

**DD:** Data Deficient

Threatened species = CR, EN, VU

Species are categorized in accordance with the most recent red list (2019).

Please check the most recent version regularly.

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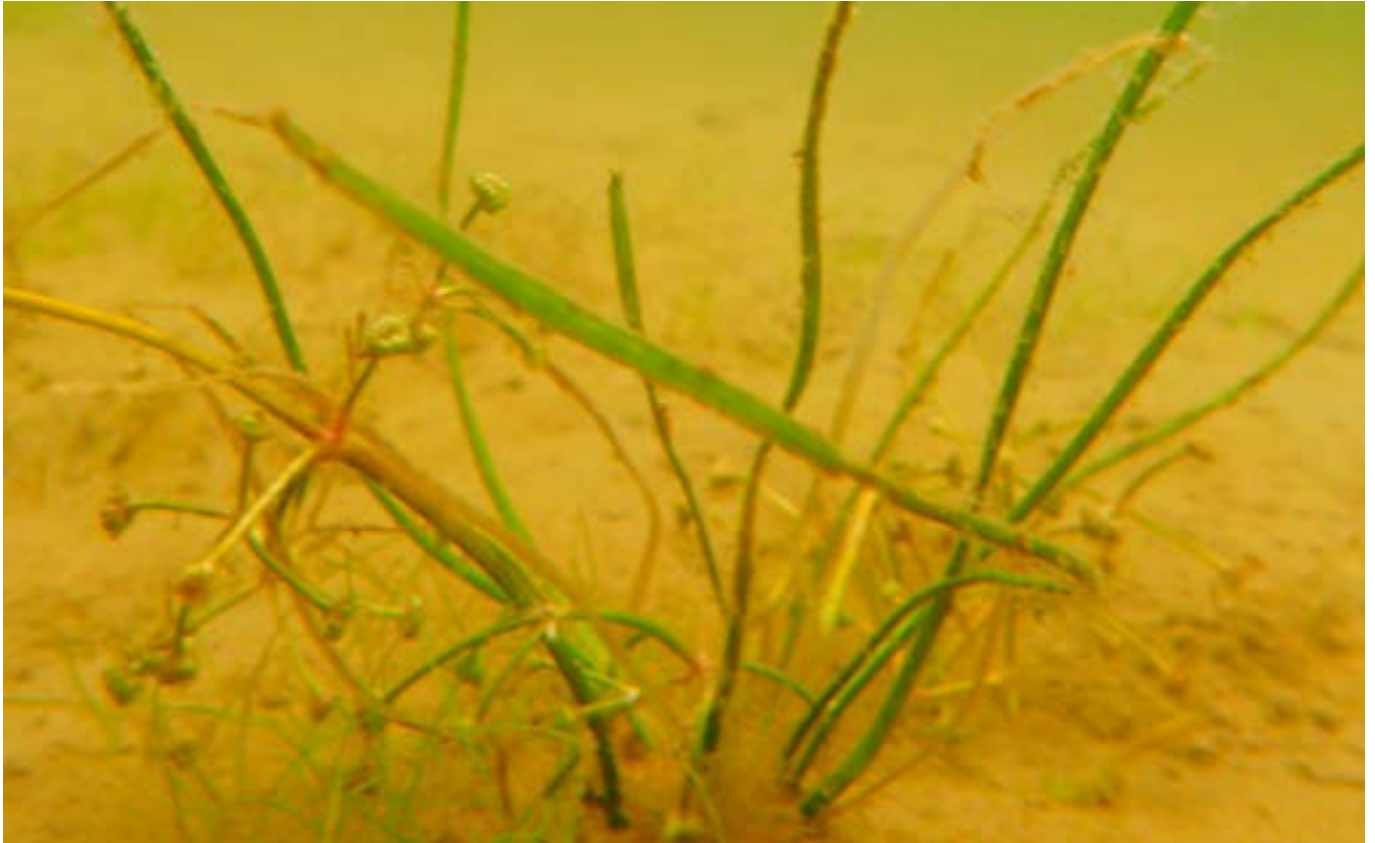
Photo: Linnéa Bergdahl, Kajsa Johansson, Petra Pohjola

*County Administrative Board of Norrbotten*

# Vascular Plants Bottom Rosettes



# Alisma wahlenbergii



## Baltic water-plantain / Småsvalking / Upossarpio

**Red list:** VU (SWE), VU (FIN) **Can be found in:** Sheltered and moderately sheltered bays on sandy substrates.

### Description

The Baltic water-plantain grows 10-45 cm tall, with a rosette of 5-20 band-shaped leaves. The leaves are 1-3 mm wide and 10-30 cm long. The inflorescence is usually shorter than the leaves. The flowers are stalked and arranged in a cluster of 1-3 flowers. Baltic water-plantain flowers almost exclusively underwater. It can be difficult to distinguish Baltic water-plantain from ribbon-leaved water plantain (*A. gramineum*), but ribbon-leaved water plantain has become extinct in Sweden. When flowering, the Baltic water-plantain is easy to identify and is hard to confuse with any other species.

### Ecology & Distribution

The Baltic water-plantain grows on sand or mixed clay

and sand substrates, in fresh and brackish water, with salinity of no more than 3-4 ‰. It is endemic to the Baltic Sea area and is most commonly found in the Bothnian Bay. It grows in sheltered and sometimes moderately sheltered areas at depths from 0,1 meter to approximately 2 meters. It is a rare species, with only a few relatively small populations on the Swedish side of Bothnian Bay. However, it has a wider distribution on the Finnish side. In both Sweden and Finland, Baltic water-plantain is protected by law. Picking this species is strictly forbidden.

### Function of plant

Contributes to biodiversity and provides habitats for small aquatic animals.



# Crassula aquatica



## Water pygmyweed / Fyrling / Paunikko

**Red list:** NT (SWE), VU (FIN) **Can be found in:** Shallow muddy areas, at the waterline.

### Description

The water pygmyweed is a small, 1-5 cm tall annual succulent plant. It has a vertical stem, branching, or unbranching at the base. The pointed leaves are fleshy, 3-5 mm long, growing in pairs on either side of a stem. The small white flowers sit in the leaf axils. Water pygmyweed can be difficult to detect due to its small size and often growing in hard to reach areas. When growing in water, water pygmyweed can be difficult distinguish from waterwort (*Elatine* sp.) and water-starwort (*Callitriche* sp.). However, species in those genera do not have succulent leaves.

### Ecology & Distribution

The water pygmyweed grows on wet, nutrient rich mud or sand substrates; where it can form thin mats or small patches. It grows in shallow fresh or brackish water, along muddy banks of estuaries, rock pools, beaches and smaller water bodies. Mudwort (*Limosella aquatica*) is a common co-occurring species, when growing in shallow brackish area. When growing on land, water pygmyweed is usually smaller, with a reddish colour. The water pygmyweed is relatively rare in both Sweden and Finland.

### Function of plant

Contributes to biodiversity and provides habitats for small aquatic animals.

# Isoëtes sp.



## Quillworts / Braxengräs / Lahnanruohot

**Red list:** - (SWE), - (FIN) **Can be found in:** Shallow bays.

### **Description**

Quillworts are bottom living species, with a short stem and an underground bulb-like structure. They are a spore-bearing species with grassy, spike-like leaves. The leaves are arranged in a basal rosette. Two species, the lake quillwort (*Isoëtes lacustris*) and spiny quillwort (*Isoëtes echinospora*), can be found in the Gulf of Bothnia. Both species have leaves that are about 3-15 cm long. It can be difficult to distinguish the two species from each other. Differences in leaves and spores are used when identifying the species. Spiny quillwort usually has leaves that are weaker, bent at the base of the plant, and somewhat translucent, while the leaves of lake quillworts are opaque and rigid.

### **Ecology & Distribution**

Lake quillwort grows on gravel, sand or mud substrates, while spiny quillwort prefers muddy-silty bottoms. They can be found in both fresh and brackish waters, usually in waters no more than two meters deep. They grow in lakes, ponds, streams, and shallow bays. Lake quillwort is the more common of the two species on the Swedish side of the Bothnian bay. However, it is difficult to tell the species apart, quillworts are therefore often identified only to genus level.

### **Function of plant**

Contributes to biodiversity and provides habitats for small aquatic animals.



# Limosella aquatica



## Water mudwort / Ävjebrodd / Mutayrtti

**Red list:** NT (SWE), LC (FIN) **Can be found in:** Shallow muddy and sandy areas, near the waterline

### **Description**

Water mudwort is a small, 2-10 cm tall annual plant. It produces horizontal stems, that root and form new basal clumps. Leaves are narrow, with a flattened spoon-shape end. They are arranged in a base rosette. The short-stalked, white or pale pink flower is 2-6 mm wide. It can be difficult to distinguish water mudwort from creeping spearwort (*Ranunculus reptans*) and water awlwort (*Subularia aquatica*), but creeping spearwort have yellow flowers and long rooting runners, while water awlwort has awl-like leaves, with no spoon-shaped end.

### **Ecology & Distribution**

Lake Water mudwort grows on clay, silt or sand substrates, in fresh and brackish water. It grows in many types of wet habitats, on both sides of the water line. It can be found in still or slowly flowing waters, usually in flat and relatively nutrient rich areas. For examples, on meadows, beaches, rivers, estuaries, bays and flads, at the waterline. Water mudwort is rare to common in Sweden and Finland, but the species has regionally declined in Sweden.

### **Function of plant**

Contributes to biodiversity and provides habitats for small aquatic animals.

# Subularia aquatica



## Water awlwort / Sylört / Äimäruoho

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Sheltered bays and coastal lagoons

### **Description**

Water awlwort is a small, 2-8 cm tall aquatic plant. It has awl-like leaves arranged in a basal rosette. The white flowers are borne on a stalk, and open when flowering above the surface. Water awlwort usually become larger when growing submerged. It can be difficult to distinguish water awlwort from the co-occurring species shoreweed (*Plantago uniflora*), but shoreweed has thicker leaves.

### **Ecology & Distribution**

Water awlwort grows on a variety of substrates, such as clay, silt, mud, or sand, in fresh and brackish water. It is usually found in shallow areas near the waterline, there it can form dense mats, but it can also grow deeper, to 1-2 meters deep. It occurs in areas of clear waters, for example in cold lakes, slow floating streams, and at the shoreline of brackish water. Water awlwort is a common species in both Sweden and Finland.

### **Function of plant**

Contributes to biodiversity, provides habitats for small aquatic animals, and stabilizes shorelines.

Vascular plants  
Submerged plants





# Callitriche hermaphroditica



## Autumnal water-starwort / Höstlånke / Uposvesitähti

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Sheltered bays and coastal lagoons

### **Description**

Autumnal water-starwort is a submerged growing, 10-40 cm tall, annual plant. The leaves, which are lacking a leaf stem, are narrow, flat, and with a U-shaped tip. It has two leaves per node in an opposite position. The flowers sit where the leaf meets the stem, and the fruit sits in pairs, with winged carpels. Unlike other water-starwort species, autumnal water-starwort lack floating leaves. The Autumnal water-starwort can be mistaken for a small plant of the Elodea species, but these species can be distinguished by having leaves in whorls.

### **Ecology & Distribution**

Autumnal water-starwort grows on soft sediment, characterised by mud, clay or sand substrates, in fresh and brackish water. It can be found in shallow areas, usually at depths no more than two meters. It is often occurring in species-rich areas, together with a diverse assemblage of Potamogeton species. Autumnal water-starwort occurs in lakes, canals, and slowly flowing areas of rivers, but also in sheltered bays and lagoons in brackish water. It is a common species in both Sweden and Finland.

### **Function of plant**

Contributes to biodiversity and provides habitats for aquatic insects and fish.

# Callitriche palustris



## Vernal water-starwort / Småånke / Pikkuvesitäh

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Shallow bays and slow flowing water

### **Description**

Vernal water-starwort is a small and delicate annual plant, growing 5-30 cm tall. It has both underwater and floating leaves. The submerged leaves are narrow, pale-green, and arranged in opposite positions. The floating leaves are spoon-shaped and arranged in a floating rosette of approximately 10 leaves. The flower sits at the leaf base, and the tiny nut-like fruit has a narrow margin. It can be difficult to distinguish vernal water-starwort from other water-starwort species, for example long-styled water-starwort (*C. cophocarpa*). These two species are distinguishable by their fruit characteristics.

### **Ecology & Distribution**

Vernal water-starwort grows on soft bottom, in fresh and brackish water. It is usually found in nutrient rich shallow areas, near the water line, but can also grow in damp soil, such as ditches and water-filled wheel tracks. Otherwise, it prefers still or slow flowing waters, for example lakes, ponds, and shores of rivers and brackish waters. It is rare to common in suitable habitats in the Bothnian Bay.

### **Function of plant**

Contributes to biodiversity and provides habitats for aquatic insects and fish.



# Elatine sp.



## Waterworts / Slamkrypor / Vesirikot

**Red list:** - (SWE), - (FIN) **Can be found in:** Sheltered bays and coastal lagoons

### **Description**

Waterworts are tiny, usually annual plants. The stem of waterworts are creeping and rooting down. The leaves usually grow opposite each other, and the flowers are tiny and borne in the leaf axils. Seeds are straight or horseshoe bent. Four waterwort species can be found in Sweden. They are usually less than 10 cm long, and just a few centimetres tall. Waterworts can be mistaken for other plant seedlings. However, they often appear in large numbers, and can therefore easily be spotted. It can be difficult to distinguish waterwort species from each other, and differences in seed shape are used when identifying species. Waterworts are however often identified to genus level only.

### **Ecology & Distribution**

Waterworts species prefers sand, silt, or mud substrates, in fresh and brackish water. They can be found on land near water or submerged in shallow soft bottom habitats, often in nutrient rich areas such as lakes, ponds, slow floating waters, and shallow bays. Waterworts are rare to common in suitable habitats.

### **Function of plant**

Contributes to biodiversity and provides habitats for small aquatic animals.

# Elodea canadensis



## Canadian pondweed / Vattenpest / Vesirutto

**Red list:** NA (SWE), NA (FIN) **Can be found in:** Sheltered bays and slow-flowing water.

### Description

The Canadian pondweed is a completely submerged growing plant, native to North America. It is a perennial, fast growing species, which can grow two meters tall. The stem is slender, and roots are often appearing from the stem nodes. The dark green leaves are narrow or ovate, and arranged in an opposite position at the lower part of the plant, while leaves at the top sits in whorls of three. The small white or pale purple flowers floats at the surface and are attached to the plant by a delicate stalk. Only female plants have been found in Scandinavia, and the plants reproduce by asexual fragmentation. It can be difficult to distinguish the Canadian pondweed from western waterweed (*E. nuttallii*), which has pale green, more narrowed, and somewhat curled leaves. It can also be mistaken for autumnal water-starwort (*Callitriche hermaphrodita*).

### Ecology & Distribution

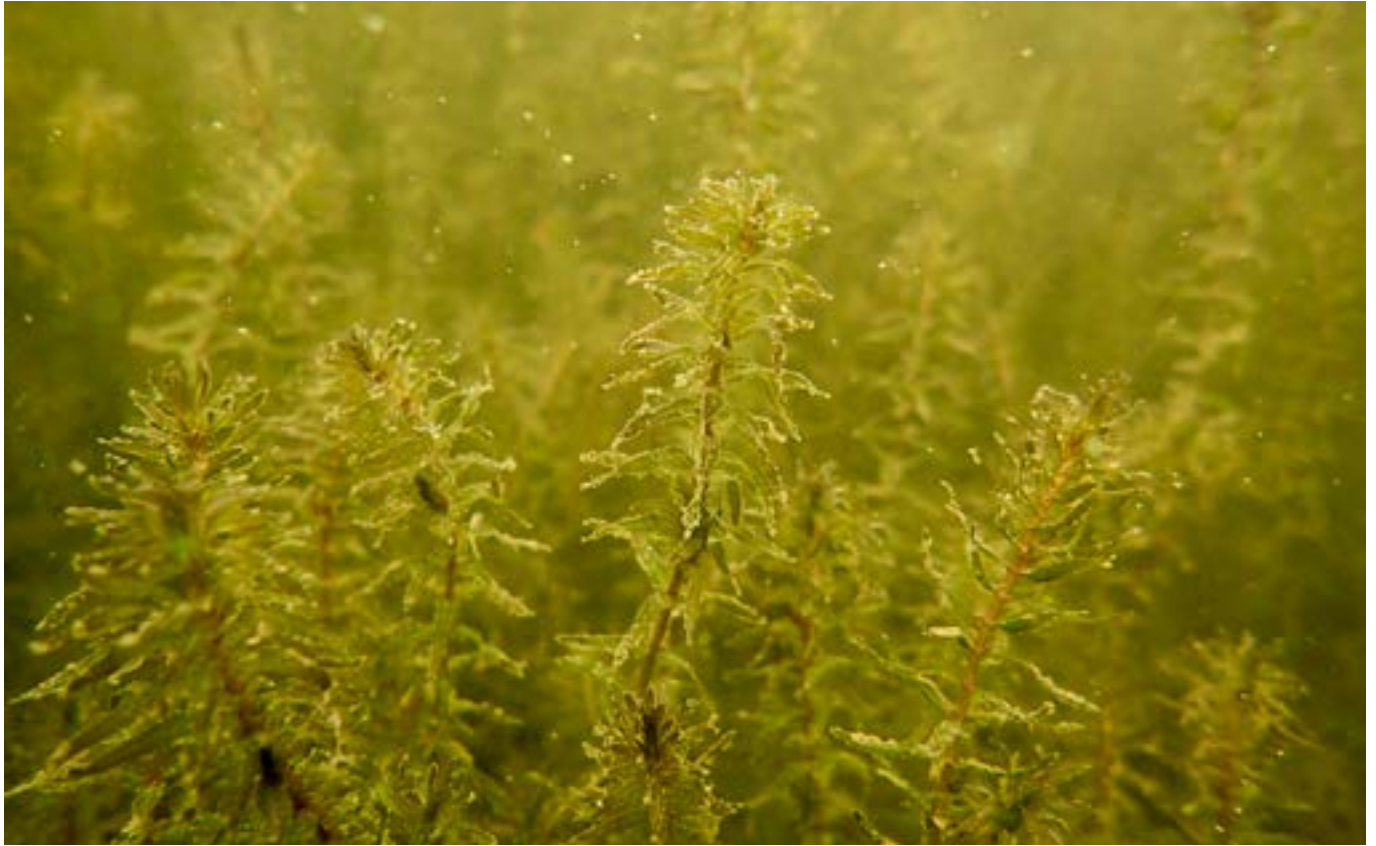
The Canadian pondweed grows on soft bottoms in fresh and brackish water. It can be found in shallow areas down to at least four meters deep. It prefers still or slow-flowing water, for example lakes, streams, ditches, and shallow bays. The Canadian pondweed is common in nutrient rich areas and can in favourable condition grow in dense stands, competing with native species. It is classified as an invasive species in Sweden and Finland.

### Function of plant

Contributes to biodiversity and provides shelter for aquatic animals. However, it can compete with native species. It can also be used as an aquarium plant.



# Elodea nuttallii



## Western waterweed / Smal vattenpest / Kiehkuravesirutto

**Red list:** NA (SWE), NA (FIN) **Can be found in:** Coastal bays

### **Description**

Western waterweed is a perennial, aquatic plant native to North America. It has a branching stem with whorls of flat leaves at intervals. The leaves of western waterweed are twisted and pale green. Small white flowers sit at the end of long, thread-like stalks. It grows rapidly and reproduces vegetatively through fragmentation. Western waterweed can be mistaken for Canadian waterweed, and the two species are distinguished by differences in leaf shape and colour.

### **Ecology & Distribution**

Western waterweed grows on soft bottoms in fresh and brackish water. It grows in shallow areas, down to a few meters' depth. It is a tolerant species and can form dense stands in suitable conditions. In recent year, western waterweed has been found in several places on the Swedish side of the Bothnian Bay, but it is yet to be found in Finland. It is an invasive species in Europe.

### **Function of plant**

Contributes to biodiversity and provides shelter for aquatic animals. However, it can compete with native species.

# Myriophyllum sibiricum



## Shortspike watermilfoil / Knoppslinga / Kalvasärviä

**Red list:** Red list: LC (SWE), LC (FIN) **Can be found in:** Estuaries, lagoons and coastal bays

### Description

The shortspike watermilfoil is a tall-growing species, up to 2 meters high. The stem is often pale yellow or reddish, with a J-shaped base. The leaves are feather-like, with 4-10 leaflet pairs per leaf, and are arranged around the stem in whorls of 3-4 leaves. The stem is thickening under the inflorescence, and the small flowers are arranged in whorls around the emergent stalk. The fruit is nut-like and 3 mm wide. It can be difficult to distinguish shortspike watermilfoil from other species in the genera, for example Eurasian watermilfoil (*M. spicatum*). However, Eurasian watermilfoil has a thinner stem, leaflets of more uniform size, which unlike shortspike watermilfoil, often collapses around the stem when plant is removed from water. Also, Eurasian watermilfoil lacks winter buds, while shortspike watermilfoil produces 2-6 cm long winter buds.

### Ecology & Distribution

Shortspike watermilfoil grow in soft-bottom areas in both fresh and brackish water. It can be found in shallow areas or at depths as great as 5 meters. Shortspike watermilfoil is often found in nutrient rich areas, for example, in ponds, lakes, shallow sea bays, and rivers. It is a common species in both Sweden and Finland.

### Function of plant

Contributes to biodiversity and provides habitats for fish and invertebrates.

# Potamogeton berchtoldii



## Small pondweed / Gropnate / Pikkuvita

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Sheltered bays and lagoons

### **Description**

Small pondweed is a fully submerged aquatic plant, that grows 10-70 cm tall, with a bushy appearance. The leaves are pale green or brownish green, about 2,5-5 cm long and 0,8-1,8 mm wide. They have 3 veins, often with bright stripes on each side of the midrib. The spike sits on a short stalk and the fruit is olive-green 1,8-2,7 mm long. It can be difficult to distinguish small pondweed from other Potamogeton species, for example lesser pondweed (*P. pusillus*). Lesser pondweed is distinguished from small pondweed by having more pointed leaves with lighter green colour.

### **Ecology & Distribution**

Small pondweed grows on soft bottom sediment, often in nutrient rich, fresh or brackish water. It can be found in a variety of water bodies, for example in ditches, ponds, lakes, rivers, and brackish waters of low salinities. Small pondweed is widespread and common in both Sweden and Finland.

### **Function of plant**

Contributes to biodiversity and provides habitats for small aquatic animals.



# Potamogeton friesii



## Flat-stalked pondweed / Uddnate / Otalehtivita

**Red list:** NT (SWE), NT (FIN) **Can be found in:** Sheltered areas and lagoons

### **Description**

Flat-stalked pondweed is a perennial, aquatic plant species. It has a flattened stem, which is richly branched. The leaves are 3-8 cm long, 1-3 mm wide. They are light green with five veins. The tip of the leaves is rounded with a tiny point. It has long internode, often longer than the leaves. The flowers sit in whorls on a 1-1.5 cm long spike. It can be difficult to distinguish flat-stalked pondweed from blunt-leaved pondweed (*P. obtusifolius*), but the leaf of the latter species has only three veins.

### **Ecology & Distribution**

Flat-stalked pondweed grows on soft bottom substrates, in fresh or brackish water. It is usually found in shallow areas but can also grow down to four meters depth. It prefers nutrient rich areas in lakes, ponds, streams and canals. but it can also be found in low salinity brackish water, for example in coastal lagoons. Flat-stalked pondweed is relatively rare, and it meets the criteria for near threatened species.

### **Function of plant**

Contributes to biodiversity and provides habitats for aquatic animals.

# Potamogeton gramineus



## Grass-leaved pondweed / Gräsnete / Heinävitä

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Estuaries and moderately sheltered areas

### Description

The grass-leaved pondweed is a tall-growing, 20-200 cm tall perennial species. The underwater leaves are fairly narrow, 4-9 cm long, and attached directly to the stem. They are translucent, with a yellow-green colour, and finely toothed edge. The plant can grow with or without floating leaves. Floating leaves are oval, 3-7 cm long, with a yellow-green colour. The flowers are small, clustered on an emergent spike. Grass-leaved pondweed have a variable appearance, depending on growth place. It can be difficult to distinguish grass-leaved pondweed from other species of Potamogeton, and hybrids between species are sometimes common.

### Ecology & Distribution

The grass-leaved pondweed grows on sand and mixed-bottom substrates, in fresh and brackish water. It grows in shallow areas, usually at depth under one meter. For example, in lakes, streams, and pools. On the Swedish side of the Bothnian Bay, this species can also typically be found in more exposed areas, on mixed sandy substrates. Grass-leaved pondweed is common in both Sweden and Finland.

### Function of plant

Contributes to biodiversity and provides habitats for aquatic animals.



# Potamogeton perfoliatus



## Claspingleaf pondweed / Älnate / Ahvenvita

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Almost any marine habitat

### Description

Claspingleaf pondweed is a perennial aquatic species, that can grow over two and a half meters tall. The stem is often branched at the upper part of the plant. The leaves are oval and plicate with no stalk (clasping the stem), often with wavy edges. The leaf colour is green or brownish-green, and translucent. Claspingleaf pondweed have no floating leaves. Spikes of flower sits above water. It can be difficult to distinguish claspingleaf pondweed from long-stalked pondweed (*P. praelongus*), but the latter species has longer leaf, up to 20 cm long. Hybrids between claspingleaf pondweed and grass-leaved pondweed are quite common.

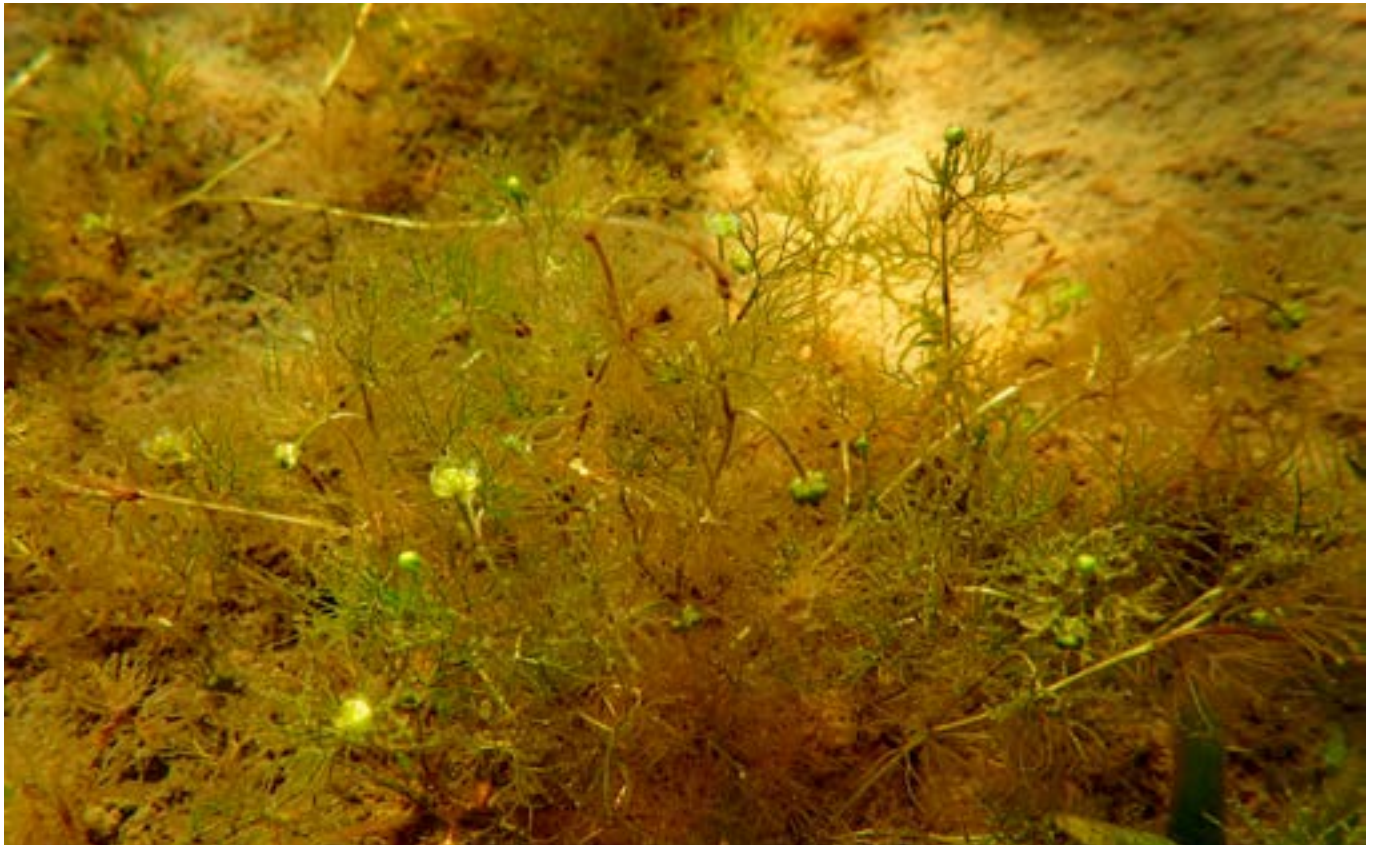
### Ecology & Distribution

Claspingleaf pondweed grows on mud, sand and gravel substrates, in fresh and brackish water. It is usually found in shallow areas but can also grow down to several meters deep. Claspingleaf pondweed is found in lakes, rivers, streams and coastal bays. It is one of the most common species in the Bothnian Bay.

### Function of plant

Contributes to biodiversity, provides cover for aquatic animals and nursery area for fish.

# Ranunculus confervoides



## Dwarf water buttercup / Hårmöja / Hentosätkin

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Sheltered bays and lagoons

### **Description**

Ranunculus confervoides is a small, 5-40 cm tall, annual or perennial aquatic plant. The stem is thin, creeping and often rooting. Submerged leaves are divided in few thread-like lobes. Floating leaves are absent. The small white flowers are 7-14 mm wide and sits on a slightly bent flower-stalk. R. confervoides is distinguished from pond water-crowfoot (R. peltatus), by its smaller size and lack of floating leaves.

### **Ecology & Distribution**

R. confervoides grows on soft bottom substrates, in fresh and brackish water. It is mainly found in shallow areas, for example in streams, ditches, and sheltered coastal bays. It is a relatively rare in Sweden.

### **Function of plant**

Contributes to biodiversity and provides habitats for aquatic animals.



# Stuckenia filiformis



## Slender-leaved pondweed / Trådnate / Merivita

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Estuaries, lagoons and coastal bays.

### **Description**

Slender-leaved pondweed is a perennial aquatic plant, that becomes 10-50 cm tall. The stem is circular, thread-like, and branching at the base. The thread-like leaves are 3-15 cm long and 0,2-1,2 mm wide. The inflorescence is a spike, borne on a 5-15 cm long stalk. It can be difficult to distinguish slender-leaved pondweed from fennel pondweed (*Stuckenia pectinata*), but the latter one has thicker stem and becomes taller.

### **Ecology & Distribution**

Fineleaf pondweed grows on mud, sand or gravel substrates in fresh and brackish water. It is often found in shallow areas, down to one meter, but can also grow down to several meters deep. It is common in nutrient rich clear water, for example in lakes, streams, and coastal bays. Fineleaf pondweed is a common species in the Bothnian Bay.

### **Function of plant**

Contributes to biodiversity and provides food and cover for aquatic animals.



# Stuckenia vaginata



## Sheathed pondweed / Slidnate / Tuppivita

**Red list:** NT (SWE), LC (FIN) **Can be found in:** Deep open water.

### **Description**

Sheathed pondweed is a fully submerged water plant species, that grows 1-4 meters tall. It has leaves that are narrow-linear, 2-9 cm long, and 1-2 mm wide. The leaves have 3-5 veins and a blunt tip at the end, and they usually spread out in a bush-like appearance. The flowers are stalked, and the fruit is about 2,5-3 mm long. It can be difficult to distinguish sheathed pondweed from fennel pondweed (*Stuckenia pectinata*), and the two species can also form hybrids. Sheathed pondweed is however usually larger than the fennel pondweed. Sheaths, flowers and fruits are often used in species identification.

### **Ecology & Distribution**

Sheathed pondweed grows in deep open brackish water. It is less commonly found in fresh water. It is not so common in the northern Bothnian Bay. In Sweden, sheathed pondweed is rare and can only be found in the Gulf of Bothnia, and in a few inland lakes.

### **Function of plant**

Contributes to biodiversity and provides food and cover for invertebrates and small fish.

# Zannichellia palustris



## Horned pondweed / Hårsärv / Merihaura

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Coastal bays and lagoons

### **Description**

Horned pondweed is a small, 10-50 cm tall, delicate perennial plant. It has a stringy appearance, with thread-like leaves and creeping roots. The leaves sit opposite or in a whorl of three leaves. The small flowers are situated at the base of the leaves. The fruit is tiny and banana-shaped. When not in fruit, horned pondweed can be difficult to distinguish from fineleaf pondweed (*Stuckenia filiformis*) and small pondweed (*Potamogeton pusilus*). However, these species have flowers and fruits on stalks.

### **Ecology & Distribution**

Horned pondweed grows on mud or muddy sand substrates, in marine, brackish, and less commonly nutrient rich fresh water. It is generally found in shallow areas, but can also grow down to several meters deep. It can be found in a variety of types of water bodies, for example in streams, lakes, shallow bays, and seasonal pools. Horned pondweed is a common species along the Swedish and Finnish coasts.

### **Function of plant**

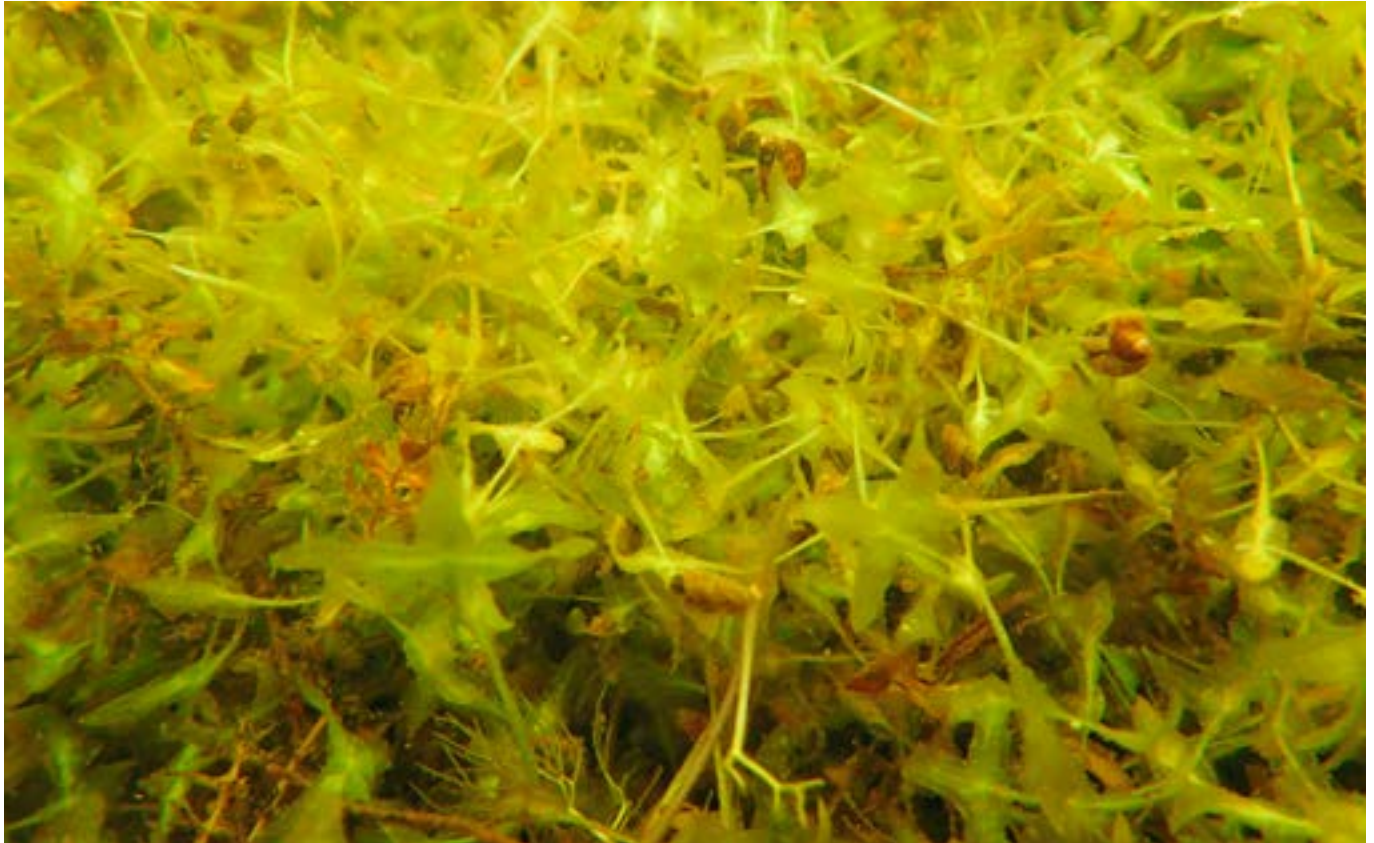
Contributes to biodiversity and provides food and habitats for aquatic animals.

Vascular plants  
Free Floating Plants





# Lemna trisulca



## Star duckweed / Korsandmat / Ristilimaska

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Sheltered coastal bays and lagoons

### **Description**

Star duckweed has a leaf-like body that are connected in branched chains. These structures are ovate-oblong or lanceolate-oblong in shape and toothed at the tip. Their colour is transparent green. The base of the leaf-like structure is tapered into a narrow and flat basal stalk. Star duckweed have usually one root or are rootless. Flowering shoots are smaller and floating. The Flowers are tiny and rarely seen. Star duckweed is easy to identify and not easily confused with other plants.

### **Ecology & Distribution**

Star duckweed is found in fresh water habitats, often in still or slow-flowing waters. It can often be found at the shoreline, when water levels have dropped. It can also be found in low salinity brackish water, for example in coastal lagoons and other lush and sheltered areas. Star duckweed is relatively common in suitable areas of the Bothnian Bay.

### **Function of plant**

Contributes to biodiversity, provides food for waterfowl, and habitats for aquatic invertebrates.

Vascular plants  
Floating Leaf Plants



# Nuphar lutea



## Yellow water-lily / Gul näckros / Ulpukka

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Estuaries

### Description

Yellow water-lily is a perennial species, which has its roots in the sediment and its leaves floating on the water surface. The leaves are broadly elliptic, 15-30 cm long, and light green. They also have a narrow cleft to the stalk and the underside of leaf is green. The scented yellow flowers are 4-6 cm wide and rising out of the water. The fruit is urn-shaped, and one fruit is produced from each flower. It can be difficult to distinguish Yellow water-lily from least water-lily (*Nuphar pumila*), which usually is smaller. It can also be difficult to distinguish between the leaves of Yellow water-lily and the leaves of European white water lily (*Nymphaea alba*), but the latter species has circular leaves and a reddish colour underneath.

### Ecology & Distribution

Yellow water-lily grows on clay or muddy substrates in fresh and brackish water. It grows in shallow areas, usually no more than 3-5 meters deep. It is usually found in lakes, ponds, wetlands, streams and estuaries. In the Bothnian Bay, yellow water-lily is a common species in suitable habitats.

### Function of plant

Contributes to biodiversity and provides habitats for fish and invertebrates



# Ranunculus schmalhauseni



## Pond water-crowfoot / Sköldmöja / Järvisätkin

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Estuaries and lagoons

### Description

Pond water-crowfoot is an annual or perennial aquatic plant. It can grow up to three metres tall. The stem is green or yellowish-white and can grow three metres tall. They have two different kinds of leaves, floating leaves and submerged leaves. Floating leaves are broad rounded with 3-5 lobes, while submerged leaves are finely divided and thread-like. The flowers have five white petals and a yellow centre. They sit on long stems, usually longer than the stem of the floating leaves. There are two subspecies, *Ranunculus peltatus* ssp. *peltatus* and the Brackish water-crowfoot (*Ranunculus peltatus* ssp. *baudotti*). Brackish water-crowfoot grows in brackish coastal areas.

### Ecology & Distribution

Pond water-crowfoot grows on hard ground or in soft bottom areas in fresh and brackish water. It is a freshwater species which is often found in slow flowing streams, ponds or lakes but it can also be found in low salinity brackish water, such as coastal lagoons. Pond water-crowfoot is common in suitable habitats. Pond water-crowfoot is most frequently occurring in the most northern part of the Bothnian bay, in low salinity areas.

### Function of plant

Contributes to biodiversity and provides habitats for fish and invertebrates.

# Sagittaria sp.



## Genus Sagittaria/ Pilbladssläktet / Keiholehdet

**Red list:** - (SWE), - (FIN) **Can be found in:** Coastal bays and estuaries

### **Description**

Species in the genus *Sagittaria* are perennial, aquatic plants. They have an upright stem and long, narrow leaves in a basal rosette. They can have floating or emergent leaves, which sits on long petioles. The floating leaves are oval or somewhat arrow-shaped. The white flowers have three petals, which are purple at the base. In the northern Bothnian Bay, there are two species of *Sagittaria*, *S. sagittifolia* and *S. natans*. Hybrids between the two species are common, they are therefore often referred to *Sagittaria* sp. or *S. sagittifolia* x *natans*.

### **Ecology & Distribution**

They are often found in soft bottom habitats on clay or mud substrates. They are fresh water species but can also be found in low salinity brackish water. They are often found in shallow areas but can also grow down to several meters deep. Plants growing in deep water are often sterile and consisting of a basal rosette without floating leaves. They prefer lakes, streams, ditches, ponds and shallow brackish bays.

### **Function of plant**

Contributes to biodiversity and provides habitats for aquatic animals.

# Sparganium sp.



## Bur-reed / Igelknoppar / Palpakot

**Red list:** - (SWE), - (FIN) **Can be found in:** Estuaries, low-salinity coastal bays

### **Description**

Species in this genus are freshwater or perennial marsh plants. In Sweden, seven species can be found, for example *S. gramineum* and *S. emersum*. The stem is long, floating or emergent. They have creeping root-stocks, and leaves that are strap-like, floating or stiff emergent. The flowers are spherical and separated in male and female flowers. Some species can be very similar, and hybridization between bur-reed species occurs, which also complicates identification. They are therefore often identified to genus level only.

### **Ecology & Distribution**

Bur-reed grows on soft bottom or mixed bottom substrates, in fresh and brackish water. They can be found in shallow and deep-water areas, to at least a few meters deep. Bur-reed are typically found in marshes, lakes, ponds and streams. They can also be found in low salinity brackish water, for example in sheltered bays. Bur-reeds are relatively common in coastal areas of the Bothnian Bay.

### **Function of plant**

Contributes to biodiversity and provides habitats for aquatic animals. It also provides food and habitat for waterfowl.



Vascular plants  
Emergent plants



# Phragmites australis



## Common reed / Vass / Järviruoko

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Estuaries, low-salinity coastal bays

### **Description**

Common reed is a large perennial grass species, that can grow 1-4 meters tall. The leaves are 20-50 cm long and 20-30 mm wide. It has creeping underground stems, and the erect stems are hollow and unbranched. The flower head is 10-30 cm long, and feathery plume-like. It can be difficult to distinguish common reed from reed canary grass (*Phalaris arundinacea*), which also is a tall grass species, but it has a much denser flower head.

### **Ecology & Distribution**

Common reed grows in wet areas on land or in fresh and brackish water. It is usually found in shallow areas, but can also grow down to several meters. It is usually found in nutrient rich areas, for example on lake and seashores, in ditches, and on coastal meadows and marshes. It is a common species in both Sweden and Finland, and when growing in suitable habitats it can be found in dense stands.

### **Function of plant**

Contributes to biodiversity, provides habitats for birds and insects, and provides spawning and nursery areas for fish.

# Eleocharis acicularis



## Needle spikerush / Nålsäv / Hapsiluikka

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Estuaries, lagoons, large shallow inlets and bays

### **Description**

Needle spikerush is a small, 2-15 cm tall, annual or perennial aquatic plant. Of all spikerush species, needle spikerush is the smallest. The translucent, green stem grows from a creeping rootstalk, while the leaves are reduced to a thin sheet. It has a grass like appearance, with a terminal inflorescence, consisting of a single spike with up to 10 flowers. Submerged plants are however often infertile. Needle spikerush can be confused with other spikerush species, but it can often be distinguished by its small size.

### **Ecology & Distribution**

Needle spikerush grows on clay or sand substrates, in fresh and brackish water. This species can be found from the waterline, and down to two meters deep. It is often found in areas with fluctuating water levels, including edges of pools, streams, and shallow bays. Needle spikerush is a common species in the Bothnian Bay and can form dense mats in suitable habitats.

### **Function of plant**

Contributes to biodiversity, stabilize shorelines, and provides habitats for small aquatic animals.



Algae  
Charophytes



# Chara aspera



## Rough stonewort / Borststrärfse / Mukulanäkinparta

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Coastal bays and lagoons

### Description

Rough stonewort is a slender plant that usually grows 10-20 cm tall. Longer individuals, up to 40 cm tall, can also be found. It is usually an annual plant. The stem-like structure is slightly branched, and it has a spiny appearance. Rough stonewort has a green, yellow-green or brown-green colour. Male and female parts are on separate plants. Rough stonewort has distinctive underground structures called bulbils, which are spherical, up to 1 mm in diameter, and whitish in colour. Bulbils can be used in species identification. It can be difficult to distinguish rough stonewort from Baltic stonewort (*Chara baltica*), but Baltic stonewort is monoecious (male and female parts on same individual plant).

### Ecology & Distribution

Rough stonewort grows on mud, sand or gravel substrates. It can be found in sheltered and exposed areas, in both fresh and brackish water. It prefers growing in shallow areas, but can also grow down to several meters deep. Rough stonewort is usually found in lakes, ponds and brackish bays. Rough stonewort can form dense meadows in suitable habitats. It is a very common species in the Baltic Sea.

### Function of plant

Contributes to biodiversity and provides cover for invertebrates.

# Chara braunii



## Braun's stonewort / Barklöst sträfsse / Silonäkinparta

**Red list:** VU (SWE), VU (FIN) **Can be found in:** Sheltered bays and lagoons

### **Description**

Braun's stonewort is a small to medium sized species, usually less than 40 cm tall. The colour is light green or brownish green, somewhat transparent. It is totally ecorticated (without cortex). The stem-like structure is richly branched. Each individual plant has both male and female organs. It is often highly fertile. The characteristics of lacking cortex can be used in species identification. In the Bothnian Bay, Braun's stonewort is the only Chara species completely lacking a cortex.

### **Ecology & Distribution**

Braun's Stonewort grows on soft sediments, in fresh and brackish water of low salinity. It is often found in shallow areas, but can also grow down to several meters deep. It prefers sheltered habitats and is often found together with dense reed vegetation. Braun's stonewort can be found in lakes, ponds, ditches, and streams. Braun's Stonewort is a relatively rare species. However, some of its main distribution areas are within the northern Bothnian Bay. It meets the criteria for vulnerable species.

### **Function of plant**

Contributes to biodiversity and provides cover for invertebrates.



# Nitella flexilis/opaca



Smooth / Dark stonewort / Glansslinke / Mattslinke / Järvisiloparta / Hauensiloparta

**Red list:** VU (SWE), VU (FIN) **Can be found in:** Sheltered bays and lagoons

## Description

Smooth stonewort and dark stonewort are two similar looking species in the genus *Nitella*. They are usually 10-30 cm tall but can grow taller, over 50 cm tall. Their colour is fresh green and lacking incrustations. Whorls of branches are attached along the stem-like structure. Smooth stonewort differs from dark stonewort by having male and female reproductive organs on the same individual plant. It is not possible to separate the two species in sterile condition, therefore in non-fertile condition they are referred to as *Nitella* sp. or *N. flexilis/opaca*.

## Ecology & Distribution

Smooth stonewort and dark stonewort are two similar looking species in the genus *Nitella*. They are usually 10-30 cm tall but can grow taller, over 50 cm tall. Their colour is fresh green and lacking incrustations. Whorls of branches are attached along the stem-like structure. Smooth stonewort differs from dark stonewort by having male and female reproductive organs on the same individual plant. It is not possible to separate the two species in sterile condition, therefore in non-fertile condition they are referred to as *Nitella* sp. or *N. flexilis/opaca*.

## Function of plant

Contributes to biodiversity and provides cover for invertebrates.

Algae  
Chlorophyta (green algae)



# Aegagrophila linnaei



## Marimo / Getraggsalg / Ahdinpallero

**Red list:** LC (SWE), LC (FIN) **Can be found in:** Deep water areas

### **Description**

Marimo, also known as moss ball, is a freshwater green macroalgae. They consist of stiff branched one cell wide filaments, which gives them a brush-like appearance. This alga can grow into large green balls, several centimetres in diameter. They can also be found loose or as dense unattached mats, floating over the sediment. Marimo balls characteristic appearance makes them easy to identify.

### **Ecology & Distribution**

Marimo usually grows as tufts on stones and rocks, or as green balls rolling over sandy substrates. It is a freshwater species but can also be found in brackish water. When growing in shallow brackish environment, they are mainly found in coastal lagoons or in sheltered bays. They are also common in deeper water, down to eight meters deep. The deep and dark water makes it difficult for other plants to grow. However, the moss ball favours these conditions and can be the dominating species in these areas.

### **Function of plant**

Contributes to biodiversity and provides habitats for aquatic animals. Also, Marimo balls are often sold in aquariums.



# Mosses (Bryophyta)



# Bryophyte taxa found in aquatic / brackish environment



## Aquatic moss / Akvatiska mossor / Vesisammaleet

**Red list:** - (SWE), - (FIN) **Can be found in:** River mouths and hard bottom areas

### Description

Mosses (including water mosses) are small flowerless plants commonly composed of simple leaves, which are attached to a branched or an unbranched stem. The stem has a limited role in conducting water and nutrients. Examples of water mosses found in the Bothnian Bay are Knieff's hook moss (*Drepanocladus aduncus*), *D. sordidus*, showy feather-moss (*Oxyrrhynchium speciosum*), greater water-moss (*Fontinalis antipyretica*), and water pocket moss (*Fissidens fontanus*). Several of these species can also be found on land. Aquatic mosses can be difficult to identify.

### Ecology & Distribution

Water mosses grow on land near water or in aquatic environments. They can be found in shallow areas as well in deeper water habitats, in both fresh and brackish water. In the Bothnian Bay, they are usually found in deep water areas attached to hard bottom substrates. At these depths, the majority of other macrophytes are absent. On the Swedish side of the Bothnian Bay, Knieff's hook moss (*Drepanocladus aduncus*), and *D. sordidus* are commonly found, while showy feather-moss (*Oxyrrhynchium speciosum*) is more common in Finland.

### Function of plant

Contributes to biodiversity and provides habitats for aquatic animals.

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