Marine Species of the Northern Bothnian Bay

Interreg Nord
European Regional Development Fund
EUROPEAN UNION
SEAmBOTH
Seamless Bothnian Bay

Foreword

Often the end product and the final report of a project are aimed at the scientific community or the people working professionally with the issues tackled in the project. In the Seamless Mapping and Management of the Bothnian Bay (SEAmBOTH) project we wanted to show everyone how special the underwater nature of the northern Bothnian Bay is, and why we should all try to protect it together. Since most of the people will never be able to go underwater themselves, we wanted to bring the underwater nature to them instead.

From early on, our stakeholders from both sides of the border told us that "We want to see pictures from the underwater world" and "We want to know what species there are in our sea". For this reason, we have collected the most prominent, most common, and other important species in this species guidebook. It is not meant to be used as an identification tool but rather to point the reader to the right direction with the photos from the nature and descriptions of the habitats where these species occur in the northern Bothnian Bay. You can use this guide in the field, or just use it to take you on a journey through an underwater world from the comfort of your armchair.

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.

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Project coordinator, Marine Biologist
Metsähallitus

Pictures taken by Metsähallitus and
County Administrative Board of Norrbotten

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Algae

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Other algae

Vaucheria
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Other organisms

Rivularia sp.
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Green Tarantula Weed / Vihersuti / Liten grönkudde

Acrosiphonia arcta

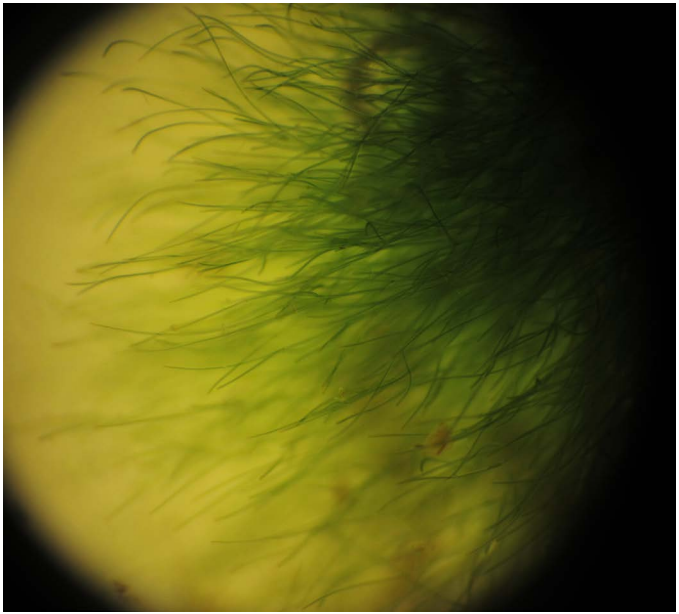
Macroscopic

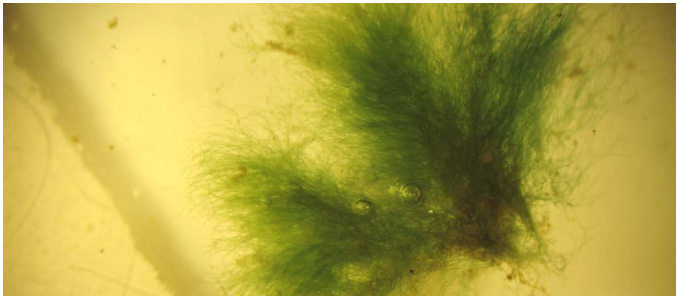
- Dark green thallus forms distinctive mats or tufts up to 6 cm tall

Microscopic

- Uniseriate filaments branch from sides of cells, and branches are held together by colourless rhizoids (curved branches are rare)
- The tips of the branches are usually rounded and at least as broad as lower portions.
- Cells are longer than broad

Acrosiphonia arcta





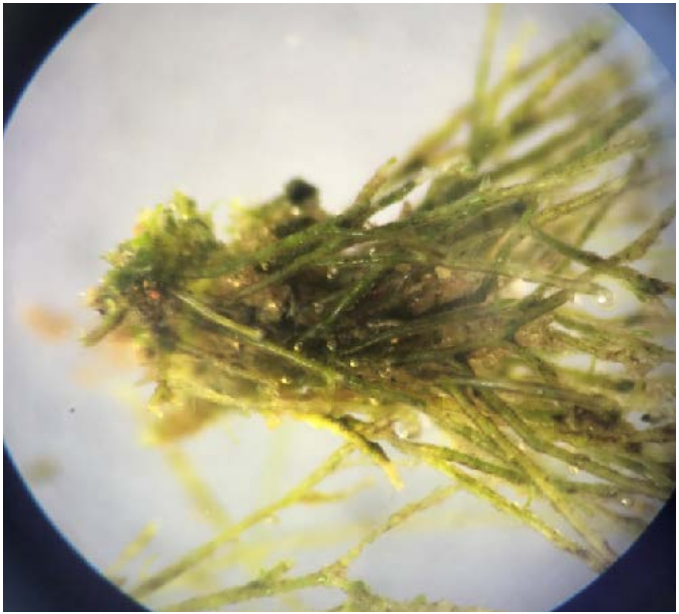
Marimo / Ahdinpallero / Getraggsalg

Aegagrophila linnaei

Macroscopic

- Algae ball
- In brackish water mainly in fladas or sheltered bays
- Forms loose ”algae” or bottom slabs
- Spherical or brush-like appearance due to branching

Aegagrophila linnaei



Vihertukko / Hjorthornsalg

Chaetophora incrassata

Macroscopic

- 15 cm high
- Branching appearance
- The tips of the branches taper into multicellular hairs

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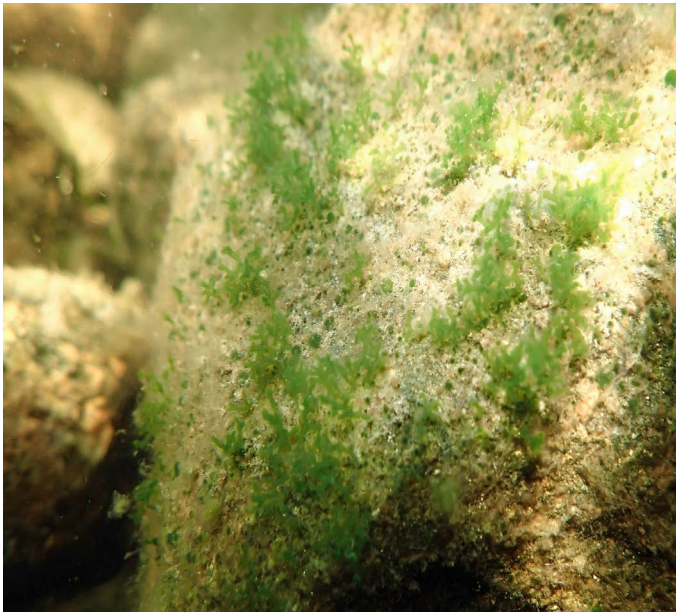
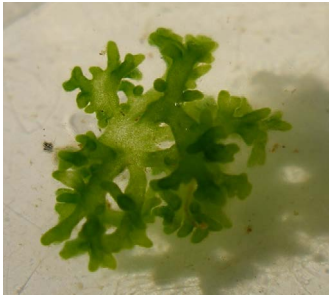
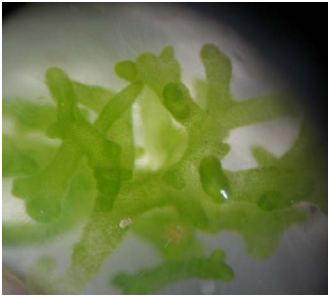
Chaetophora incrassata







Hentoahdinparta, Viherahdinparta / Näckhår, Grönslick

Cladophora fracta and Cladophora glomerata

Macroscopic

- Thallus is branched and variable in size, appearance, and colour
- Up to 40 cm high tufts

Microscopic

- Branches more or less upward, often bent in one direction, collected in small tufts
- Fertice cells in the upper part of branches
- Cell length often more than 10 times width
- End cells usually >20 µm in diameter
- Microfibrils strictly parallel to cell length and additional transverse ones

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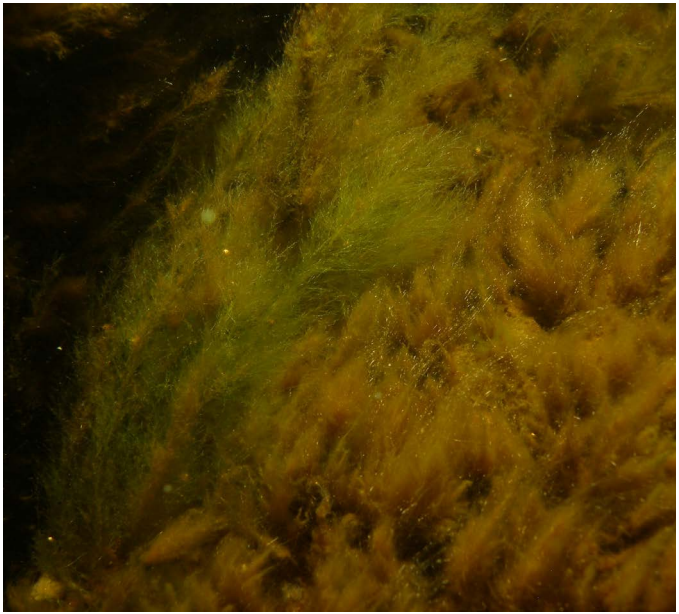
Cladophora fracta and
Cladophora glomerata



Levyrihmat / Vridbandsalger

Mougeotia sp.

Macroscopic

- Very thin, loose-lying thread
- Common in still waters as green clouds

Microscopic

- Uniseriate, unbranched algae
- Chloroplast typically not parietal and of approximately same size as the cell (can be in different positions)

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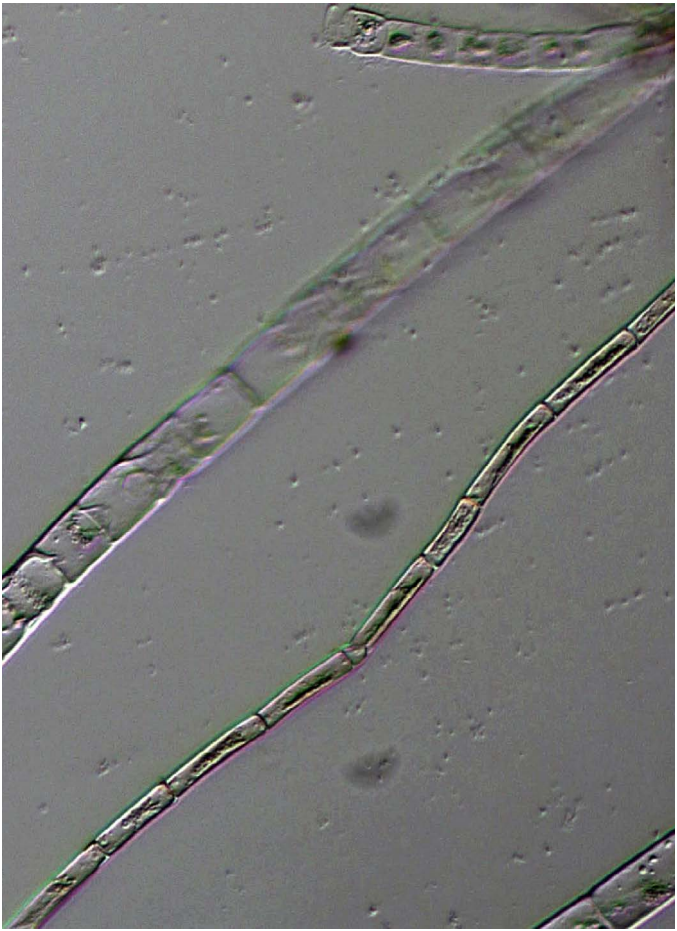
Mougeotia sp.



Leveävyörihma / Skvalpalg

Ulothrix zonata

Macroscopic

- Thin, attached or loose-lying threads

Microscopic

- Uniseriate, unbranched thallus
- Chloroplast usually covering only a small part of the cell wall, sometimes the whole cell wall

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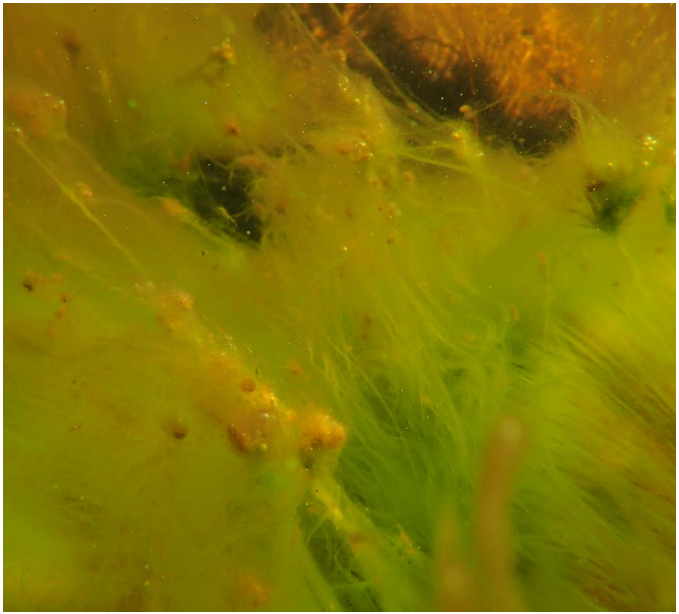
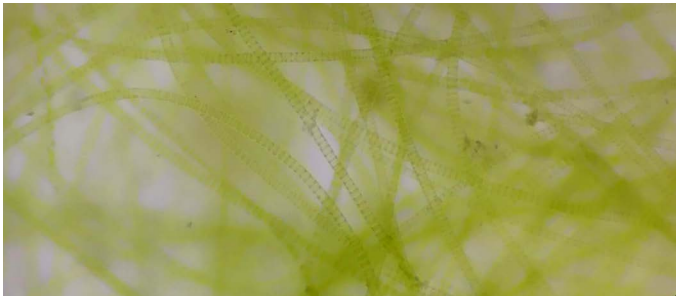
Ulothrix zonata





Ulva sp. (Enteromorpha)

Macroscopic

- Thallus always unbranched, but sometimes forming ”rosette” at the base
- Up to 50 cm high and 50 mm wide

Microscopic

- Cells never arranged in rows
- Chloroplast with 1 pyrenoid

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Ulva sp. (Enteromorpha)

Lettiruskolevä, rihmatupsu / Trådslick

Pylaiella littoralis

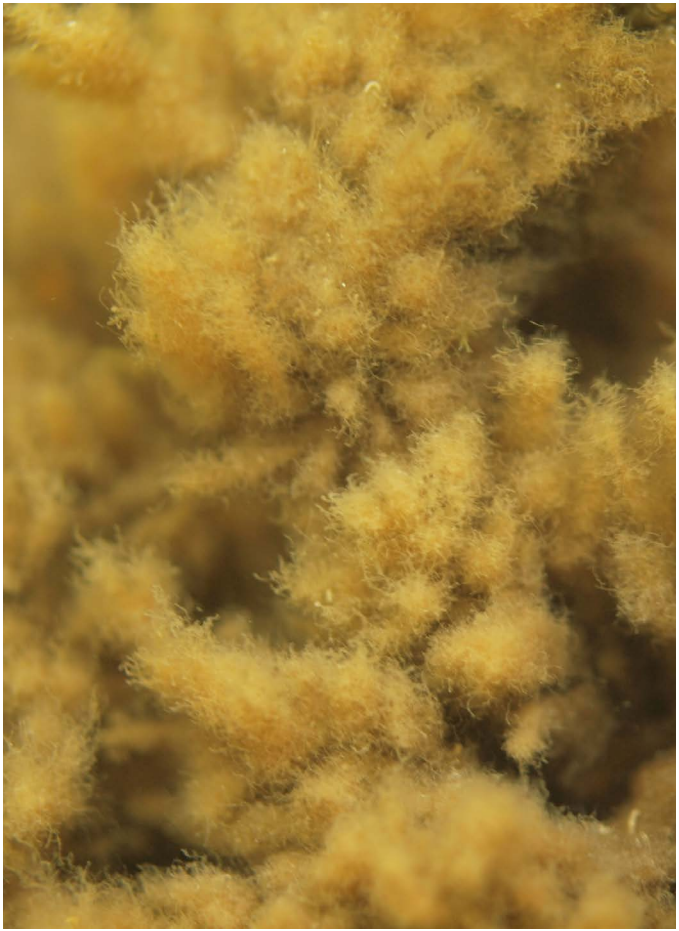
Macroscopic

- Thallus up to 40 cm high
- Thallus not intertwined

Microscopic

- Thallus is uniseriate, richly irregularly and oppositely branched
- Cells with disc-shaped chromatophores
- Unilocular sporangia intercalary, plurilocular sporangia usually intercalary
- Thallus very variable

Pylaiella littoralis

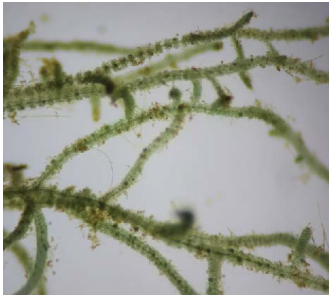


Helmilevät / Mörk pärlbandsalg

Batrachospermum atrum

- Fresh water species
- Up to 2‰ salt water
- 2–13 cm
- Dark green–olive green–reddish brown
- Grows approximately 0,5 m deep
- Can grow on top of Fontinalis (water moss)

Batrachospermum atrum



Punahelmilevä / Ullsläke

Ceramium tenuicorne

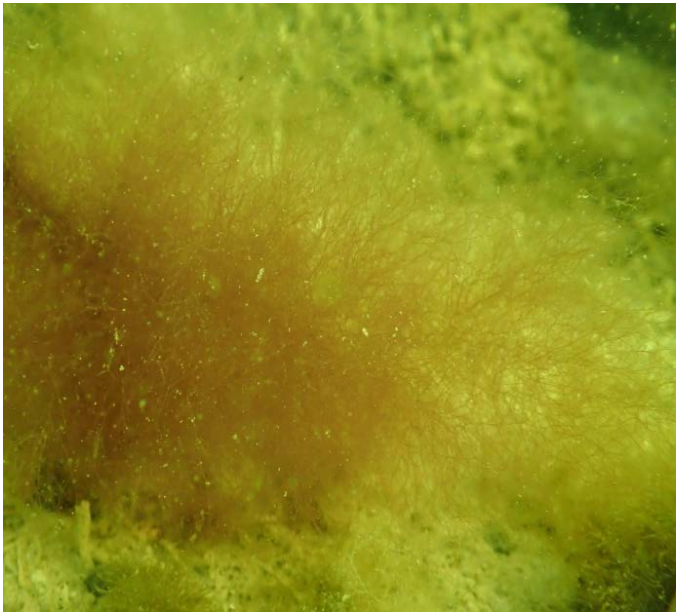
Macroscopic

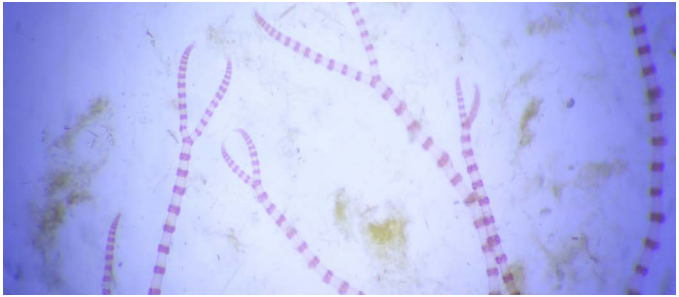
- Epiphytic or epilithic tufts, 1–8 cm high
- Diaphanoid structure visible with naked eye

Microscopic

- Main branches with large uniseriate axial cells with small pericentral cortical cells partly covering axial cells
- False bifurcate branching at the apex ending in a claw-like arrangement

Ceramium tenuicorne





Punalaikkulevä / Havsstenhinna

Hildenbrandia rubra

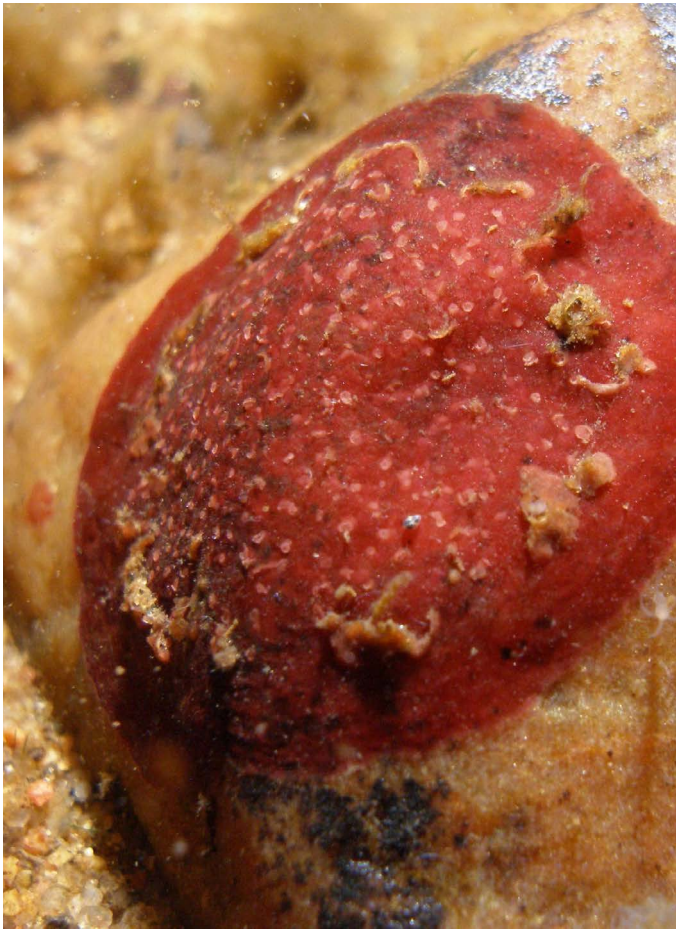
Macroscopic

- Thin wine-red crust on rock and stones
- Only up to 0,5 mm thick

Microscopic

- One single layer of prostrate basal filiaments supporting vertical rows of cells that are linearly connected to form a firm tissue

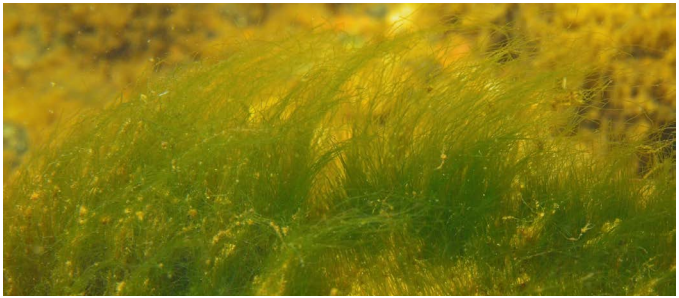
Hildenbrandia rubra



Letkulevät / Slangalger

Vaucheria

- Filamentous algae; fussy looking, slimy
- Grows on soft bottoms
- 1–7 m deep
- Yellow–green
- Grows long, tube formed and unbranched filaments that grow straight up from sea bottom
- In some places the algae grow so abundantly that it looks like a green mat covering the whole sea floor
- Gas can accumulate underneath the dense vegetation, forming gas pillars
- Grows around the year, mostly during autumn and winter



Sinipallukat / Svartkula

Rivularia sp.

- Grows on submerged stones, moist rocks, and damp soils
- Likes calcareous waters
- Found in colonies
- Trichomes radially arranged within a colony
- Each trichome wholly or partially surrounded by a gelatinous sheet

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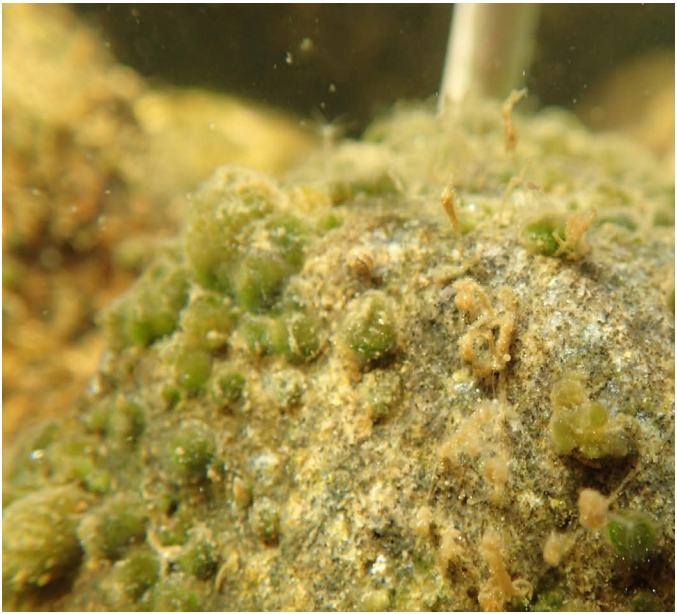
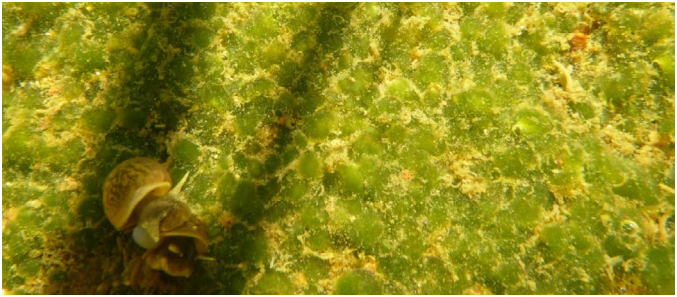
Rivularia sp.





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Animals

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Anodonta anatina

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Ephydatia fluviatilis

Ephydatia fluviatilis

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Macroplea pubipennis

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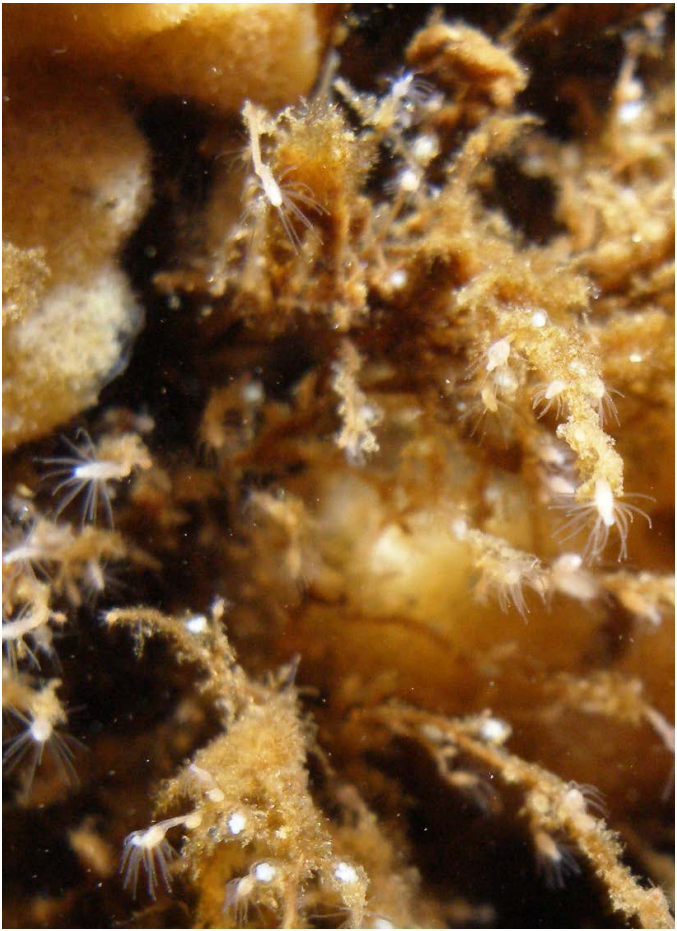
Macroplea pubipennis

Mysis

Polyps



Kilkki / Skorv

Saduria entomon

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Saduria entomon

Järvisieni / Spretig sötvattenssvamp

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Spongilla lacustris

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Bottom rosettes plants

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Bottom rosettes plants

Baltic water-plantain / Upossarpio / Småsvalting

Alisma wahlenbergii

- Stem usually shorter than leaf
- Base rosette with 5–20 leaves
- Leaves 10–30 cm, 1–3 mm wide, ribbon-shaped
- Inflorescence 1–3 whorled
- Long leaves and white flowers or green “balls” at the ends of flower buds
- In shallow, brackish waters; typically on mixed bottom sand and silt
- Status: Vulnerable (SWE & FIN)

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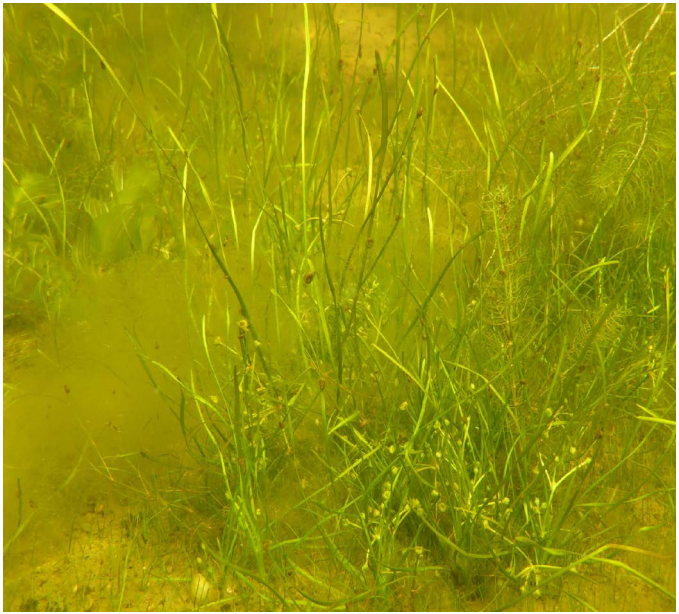
Alisma wahlenbergii



Water pygmyweed / Vesipaunikko / Fyrling

Crassula aquatica

- 1–5 cm
- Stem vertical, unbranching, or branched at the base
- Opposite leaves, linear and terete
- Flowers in leaf stalks; four leafs white or reddish colour; pistil with four leaves
- Occurs in clay and muddy lakes near the water, often on pasture shorelines; also in brackish waters and rocky cliffs of the archipelago
- Status: Vulnerable (FIN)

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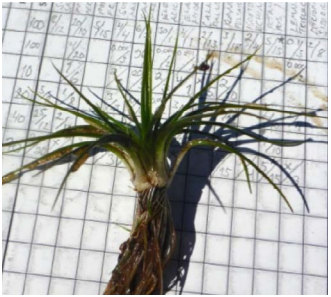
Crassula aquatica

Spiny-spore quillwort / Vaalealahnanruoho / Vekt braxengräs

Isoëtes echinospora

- 3–15 cm
- Leaves 5–15 cm, 1–2 mm wide
- Leaves elongated (rigid only at the base) and partlyelongated (pencil-like)
- Light-green or dark green, translucent
- Spores up to 0,5 mm, with dense spikes, chalk white
- Leaves are bent at the base, lifting up from the water
- Appears to some extent in lush lakes, slow-flowing rivers, and brackish water, in rather shallow water with a soft – hard mineral soil at a depth of 0,5–2 m



Lake quillwort / Tummalahnanruoho / Styvt braxengräs

Isoëtes lacustris

- 5–15 cm
- Roots brownish
- Leaves in dense rosette on bottom
- Leaves 3–15 cm, 1–3 mm wide
- Leaves subulate, vertical, rigid, somewhat straight, or curved
- Dark green, not translucent
- Spores 0,5–0,7 mm, irregularly grained, dirty white
- Appears in rough terrain with hard mineral soil in fairly deep water; sometimes in low salinity brackish water and slowly flowing water. In lakes, brooks, gravel, sand, or mud at a depth of 0,5–2 m

Water mudwort / Mutayrtti / Ävjebrodd

Limosella aquatica

- 2–10 cm
- Leaves in rosettes
- Long leaf stalks
- Leaf blade long, narrow and spoon-shaped
- In clay, sand and silt beaches, river estuaries, and brackish waters at the waterline

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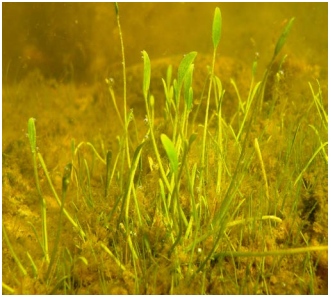
Limosella aquatica



Creeping spearwort / Rantaleinikki / Strandranukel

Ranunculus reptans

- 2–6 cm
- Submerged plant, but also grows on land
- Stem limp, thin, with runners, often rooting from all nodes, internodes clearly arching
- Leaves often as a rosette around rooting nodes, almost all stalked
- Blade lanceolate–linear, blunt, with entire margins
- Lanceolate blades possibly lacking on submerged leaves
- Singular yellow flower
- Appears in open, hard-bottomed shores of lakes, rivers, and low salinity brackish waters on the waterline; often submerged

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Ranunculus reptans

Water awlwort / Äimäruoho / Sylört

Subularia aquatica

- 2–8 cm
- In rosettes often terete, subulate
- Sharp apex in leaves
- Stalk is leafless, scarsely flowering
- Appears in lakes on sheltered beaches, clay, silt, mud in shallow water, and just above the waterline; in brackish water in rivers, in bays with sand, clay and mud on the beach down to 2 m to deep

Subularia aquatica

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Charophytes

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Charophytes

Nitella opaca
Dark stonewort / Hauensiloparta, Himmeäsiloparta / Mattslinke ▸

Nitella flexilis
Smooth stonewort / Järvisiloparta / Glansslinke ▸

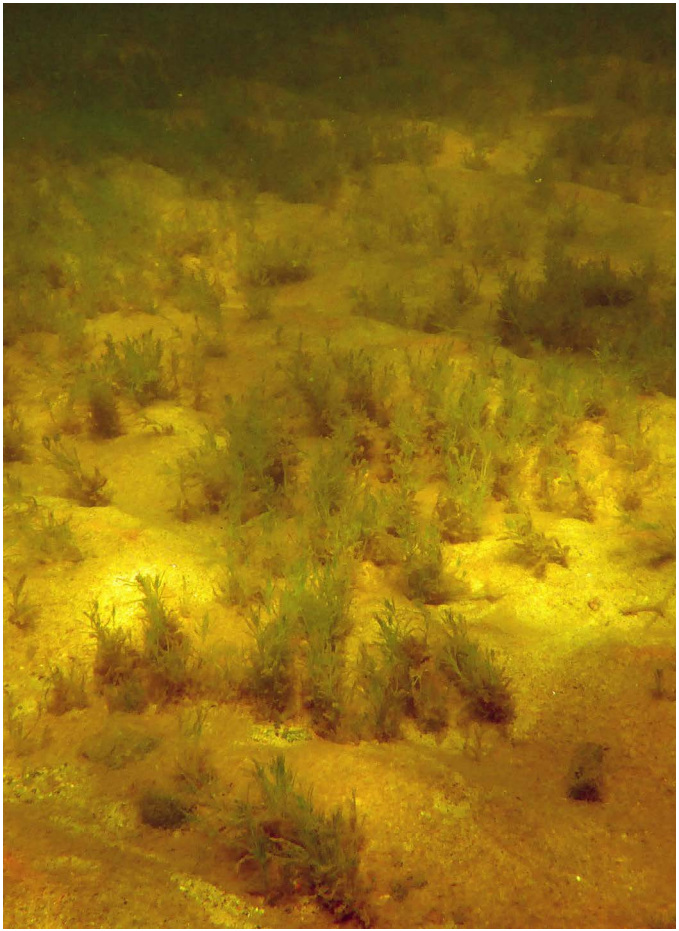
Nitella wahlenbergiana
Tupsusiloparta / Nordslinke ▸

Stoneworts / Näkinparrat / Sträfsen

Chara sp.

- Undivided branchlets
- 4–8 bract cells, with stipulodes
- With or without cortex and spine cells
- Bulbils sometimes present
- Monoecious or Dioecious
- Gametangia on lower 1–3 branchlet nodes
- Antheridia below oogonia

Chara sp.



Rough stonewort / Mukulanäkinparta / Borststräfse

Chara aspera

- 10–30 cm, usually < 10 cm
- Greyish dark green
- Slender, filiform stem (0,4 mm thick)

  Triplostichous cortex

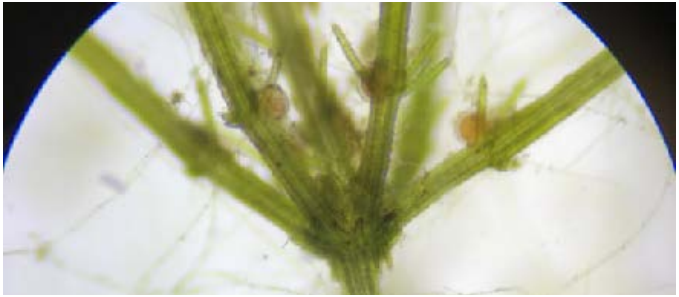
  Solitary, acute spines (often as long as the diameter of the stem)
- 6–9 branchlets, each with 6–8 segments
- Stipulodes in the upper row are longer than in the lower row
- 5 bracts cells with bracteoles longer than the oogonium
- Dioecious:

  Solitary oogonium (up to 800 µm long)

  Black oospores (up to 700 µm long)

  Red antheridia (up to 600 µm in diameter)

  Spherical, whitish bulbils up to 1 mm in diameter are common



Chara aspera var. subinermis

- Chara aspera var. subinermis
- Up to 12 cm long
- Yellowish green
- Small, papilliform and sparse spines
- Acute stipulodes on both rows
- Often with circular bulbils
- When sterile, hard to tell apart from Chara globularis

Braun's stonewort / Silonäkinparta / Barklös sträfse

Chara braunii

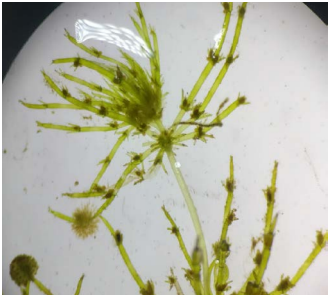
- Transparent and richly branched green to brownish green
- Plants are entirely ecorticate
- Slender main axis up to 1200 µm in diameter
- Well developed stipulodes that occur in a single whorl
- Stipulodes present in one or more rows in the branchlets
- 6–10 branchlets in a whorl

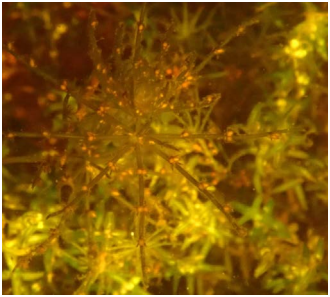
  Straight and occasionally incurved

  Segments 4–6, the last one often reduced, with 1 or more small end cells forming tiny terminal corona.
- Bracteoles slightly longer than the oospore
- Monoecious:

  Dark brown or black oospore
- Status: Vulnerable (FIN & SWE)

Chara braunii





Fragile stonewort / Hapranäkinparta / Skörsträfse

Chara globularis

- Usually 15–25 cm and up to 50 cm
- Darker green colour
- Slender axis up to 800 µm in diameter.
- Internodes as long as, or longer than, the branchlets.
- 6–9 branchlets, each with 8–12 segments
- Triplostichous, isostichous stem cortex
- Rudimentary stipulodes that are papilliform
- Short or lacking spine cells
- Monoecious:

    Oogonia are solitary and up to 1,2 mm long

    Oospores are black

    Antheridium is up to 500 µm in diameter

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Chara globularis

Sironäkinparta / Papillsträfse

Chara virgata

- 15–20 cm high, axis up to 500 µm in diameter
- Grey to green plants
- Internodes 1–3 times longer than the branchlets
- 7–8 branchlets, each with 9–11 segments.
- Triplostichous or tylacanthous stem cortex
- Solitary and papillous spines cells
- Acute stipulodes in the upper row; short to papillous in lower row
- Bracteoles are 1–2 times as long as the oogonium
- Monoecious:

  Oogonium up to 1,1 mm long, and up to 700 µm broad

  Black oospore

  Antheridium up to 350 µm in diameter

  Multicellular bulbils often found in this species

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Chara virgata

Bird's-nest stonewort / Merisykeröparta / Havsrufse

Tolypella nidifica

- 5–20 cm long
- Dark brownish-green, non-encrusted
- Axis up to 1 mm broad
- Fertile whorls in dense branchlets at the upper end
- Simple branchlets at the base of whorls

  Branchlets are divided once, and have normally only one node (rarely two) with 2–4 rays

  End segments are 3–5 and the end-cells are obtuse
- Monoecious: Gametangia conjoined at each branchlet node

  Clustered oogonia 2–4, globose (up to 600 µm long)

  Black to dark wine red oospores (up to 500 µm long)

  Antheridium less than 500 µm in diameter

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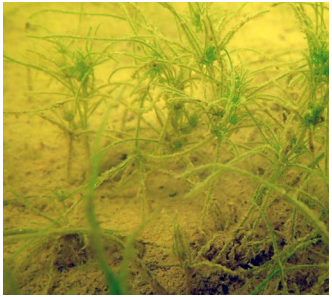

Smooth stonewort / Siloparrat / Slinken

Nitella sp.

- Sterile N. flexilis (1-celled y-branches) can not be distinguished from N. opaca
- Uppermost branchlets divided one or several times – regular appearance
- Lack bract cells, stipulodes, cortex and spines
- Monoecious or dioecious
- Antheridia next to or above oogonia

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Nitella sp.

Dark stonewort / Hauensiloparta, Himmeäsiloparta / Mattslinke

Nitella opaca

- Small to medium size
- Fresh green colour
- Non-encrusted
- Branchlets divided once into 2 or 3 top cells
- Apex forms small obtuse tip with a thickened cell wall
- Dioecious:

    Large antheridia

    Yellowish oogonia

    Dark brown to black oospores (350–450 µm)

    Sterile individuals cannot be identified from Nitella flexilis

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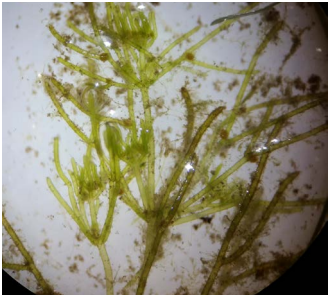
Nitella opaca



Smooth stonewort / Järvisiloparta / Glansslinke

Nitella flexilis

- Small to medium size
- Fresh green colour
- Non-encrusted
- Branchlets divided once
- Apex forms small obtuse tip with a thickened cell wall
- Monoecious
    - Greenish brown antheridia
    - Yellowish oogonia
    - Dark brown to black oospores (500–600 µm)
    - Sterile individuals

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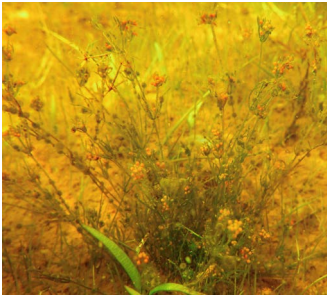
Nitella flexilis



Tupsusiloparta / Nordslinke

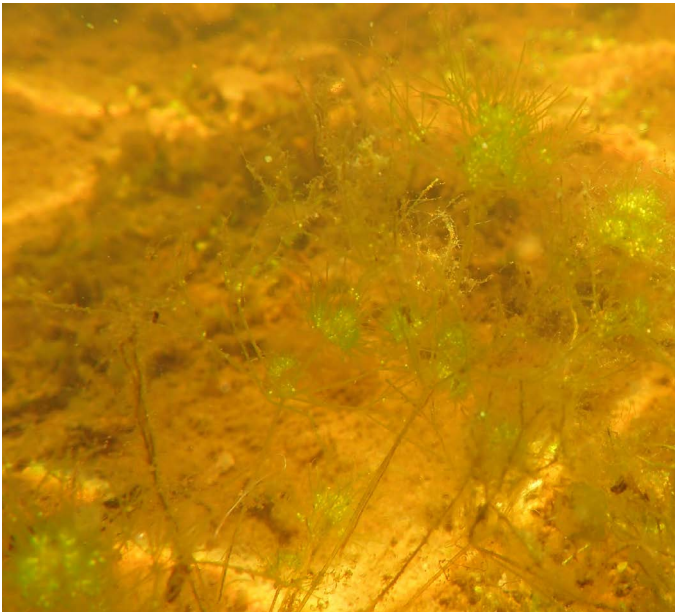
Nitella wahlenbergiana

- Up to 10 cm high and bright green
- Axis less than 0,5 mm in diameter
- Branchlets divided two or three times

  Secondary branches much shorter than others, so whorls have a condensed appearance, like heads
- Dactyls are 2 or 3-celled and the end-cells are usually mucronate
- Monoecious: gametangia are commonly numerous and most often they are at the second furcation of the branchlets forming clusters

  Black oospore and has prominent ridges and a granulate membrane

Nitella wahlenbergiana



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Emergent plants

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Common water-plantain / Ratamosarpio / Svalting

Alisma plantago-aquatica

- 30 to 100 cm; thickened stem
- Usually about 3 to 6 shorter leaves in the rosette (5–12 cm heart, round or pointed shaped)
- Conical, branching flowers; white or pink
- Appears on the shores of lakes, rivers, and brackish waters; on wet land or in shallow water

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Alisma plantago-aquatica

Flowering rush / Sarjarimpi / Blomvass

Butomus umbellatus

- 40–80 cm linear, stiff and pointed leaves directly from rhizomes; 3–10 mm wide
- Umbel-like flower cluster
- Flowers 2–2,5 cm wide
- Pink-white and also purplish red; petals opposite, round.
- Occurs on the sandy bottom of the lush shores of lakes, rivers, and low salinity brackish water, usually in shallow water. In the deeper water, appears in the more slow moving sections

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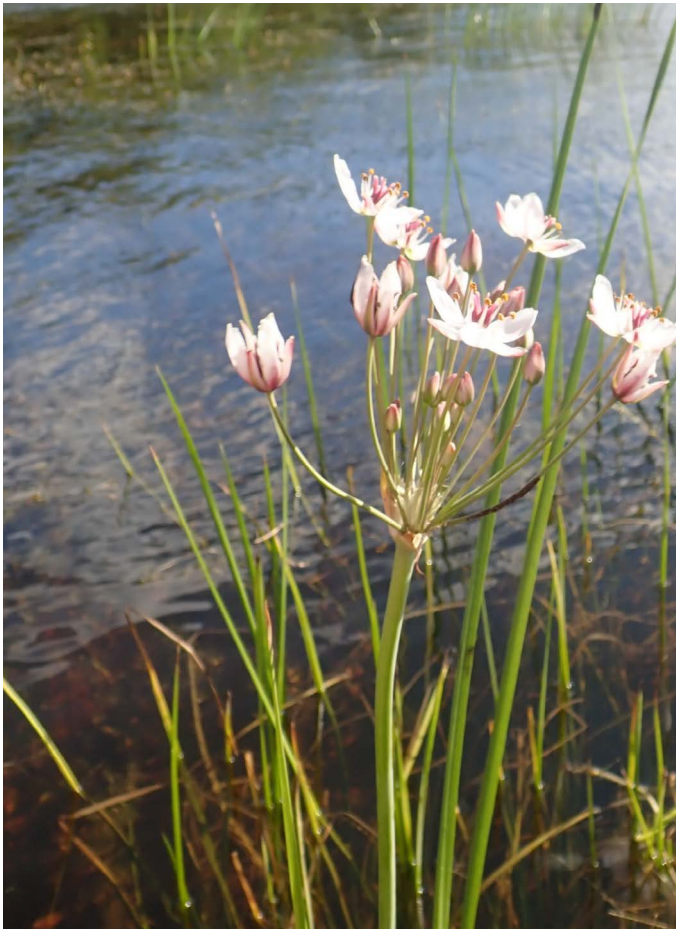
Butomus umbellatus



Water arum / Suovehka / Missne

Calla palustris

- 10–25 cm, stem soft
- Rootstock almost horizontal, creeping, thick; often forms wide stands
- Perianth vestigial flower, approx. 5 mm broad
  Stamens usually 6
  Gynoecium fused, single-styled
- Inflorescence a dense, abundantly flowered 2–3 cm long spadix; lower part with bisexual flowers, upper part with unisexual staminate flowers
- Flower cluster's subtending leaf (spathe) white, outer surface greenish, ovate, long-tipped
- Leaves alternate at base, long-stalked; base sheath-like
- Blade ovate, cordate-based, with entire margins, smooth, shiny
- Appears in swamps, waterside bogs that are prone to flooding, stream banks, ditches, quagmires, shores of muddy lakes

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Calla palustris

Marsh-marigold / Rentukka / Kabbeleka

Caltha palustris

- 15–40 cm
- Stem erect–ascending–limp, hollow, sometimes rooting from nodes
- Perianth regular (actinomorphic) flower; yellow, shiny (outer surface sometimes green), 1,5–5 cm wide

  Tepals 5, round-tipped

  Stamens many

  Gynoecium separate, with many pistils

  Flowers 1–7(–15) flower cluster
- Alternate leaves, stipulate, basal leaves long-stalked, stem leaves short-stalked
- Blade roundish–kidney-shaped, cordate-based, with crenate–shallowly toothed margins and palmate venation, smooth, usually thick, sometimes thin. Stipules surround stem like a sheath
- Occurs on shores, ponds, springs, quiet waters in streams, ditches, wetlands, wet meadows, waterside swamps, damp hollows in broad-leaved forests, snow-bed sites, and occasionally underwater

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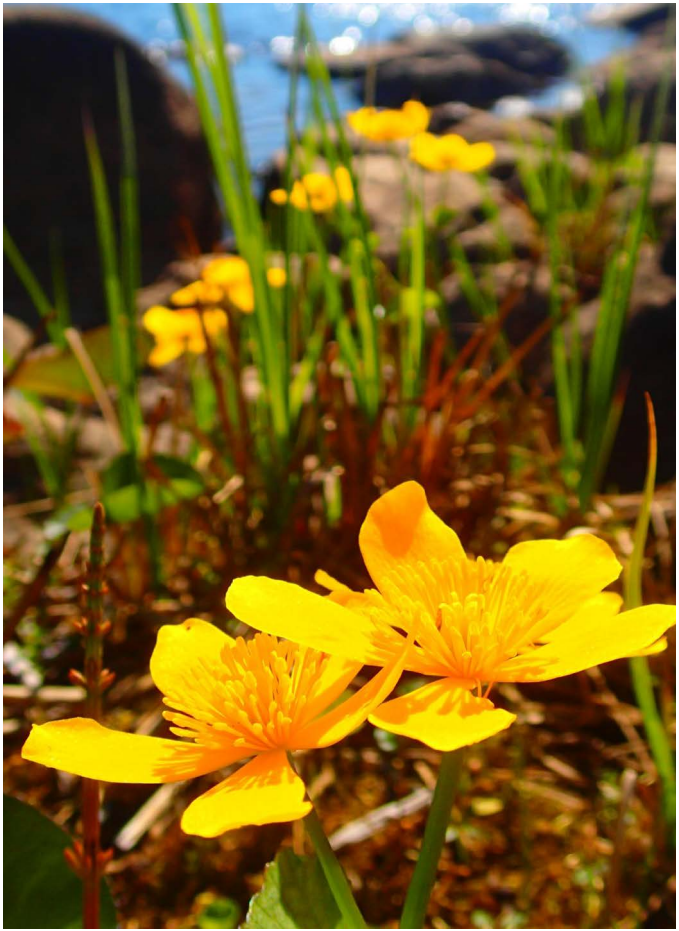
Caltha palustris



European water hemlock / Myrkkykeiso / Sprängört

Cicuta virosa

- 30–150 cm
- Stem smooth, glossy, hollow, joints with septa
- Flowers with regular corolla (sometimes outermost flowers slightly zygomorphic), white–slightly reddish, approx. 5 mm broad

  Petals 5, entire–shallowly notched tips, tip curled inwards

  Sepals 5

  Stamens 5

  Gynoecium syncarpous, with 2 styles
- Inflorescence a compound umbel, secondary umbels (5–)10–20

  Primary umbel without, secondary umbels with, bracts
- Alternate leaves, leaf base sheath-like, basal leaves long-stalked, stem leaves stalked–stalkless, stalk grooved
- Blade ovate, 1–2 times pinnate. Leaflets lanceolate–narrowly elliptic (sometimes very narrow), with serrated margins. Occurs in shallow water in ponds, lakes, reservoirs, rivers, ditches, low-salinity sea lakes, wet flood-influenced meadows.

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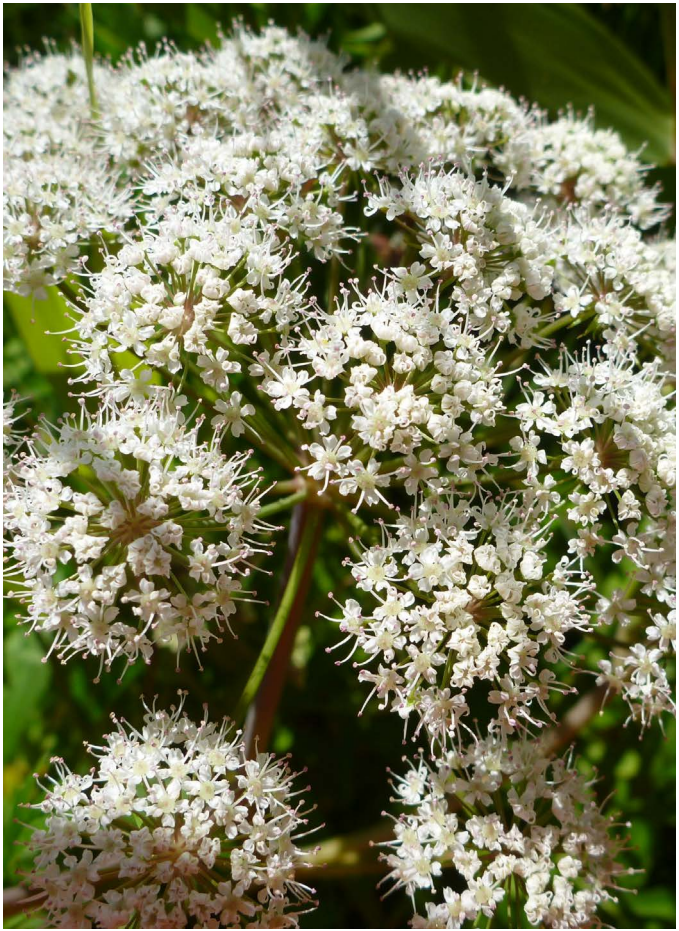
Cicuta virosa



Marsh cinquefoil / Suokurjenjalka / Kråkklöver

Comarum palustre

- 20–50 cm
- Stem ascending–erect, hairy, often reddish
- Flowers extend from the branch which vary from red to purple (about 2,5 cm wide)
- Flower cluster a terminal corymb
- Alternate leaves, quite short-stalked, uppermost almost stalkless, stipulate
- Blade pinnate, 2–3-paired, with terminal lanceolate dark green leaflets; largely toothed
- Light brown, spherical fruit, several together
- Found on shores, ditches, swamps, wet bogs, and waterside meadows that are prone to flooding

Comarum palustre

Spikerushes / Pilliluikat / Småsävar

Eleocharis sp.

- Rooted and shallow plants
- Leafless stems
- Spiked inflorescence
- Some species are emergent and some submergent

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Eleocharis sp.

Needle spikerush / Hapsiluikka / Nålsäv

Eleocharis acicularis

- Submerged plant
- 2–10 cm, under 0,5 mm thick
- Translucent
- Spikes 2–5 mm, up to 10 flowers
- Carpel with 3 stigma
- Small spiked “grass” on the bottom
- Appears in inland and brackish waters on a clay-sandy and sandy bottom from the waterline to a depth of 2 m, often as large-scale meadows

Weak spikerush / Mutaluikka / Veksäv

Eleocharis mamillata

- Stem 10–60 cm
- Base of the stem yellowish or yellowish-brown
- Stem soft, easily flattened, slightly translucent
- Spikes 1–20 mm
- Thick horizontal rhizomes
- Lowest supporting leaves on spike without flowers
- 5–6 bristled tepals; bristled seeds longer
- Appears on a fine, soft, often muddy background in lake bays, ponds, puddles, and ditches

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Common spikerush / Rantaluikka / Knappsäv

Eleocharis palustris

- 10–100 cm, 1–2 mm thick
- Hard, opaque stem
- Base of stem is dark reddish
- Branches at the root joint
- 2 lower scales lack flowers and slightly clasp the stem
- Without bristled tepals or with 4 bristles; bristles up to length of achene
- Distinguished by the base of the stem
- Appears on sheltered, shallow waters outside the E. uniglumis zone; in ditches and mines near the coast
- Subspecies: Eleocharis palustris subsp. lindbergii

  Yellowish-green

  Big and dense

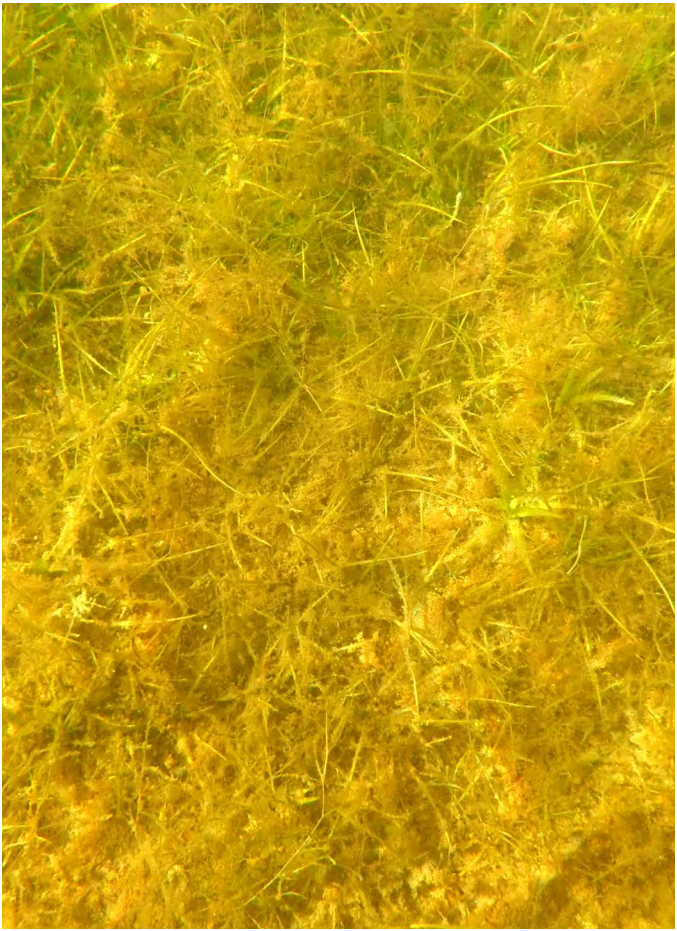
  Bristles missing; Seeds 1,4–1,7 mm

Dwarf spikerush / Pikkuluikka / Dvärgsäv

Eleocharis parvula

- Stem about 5 cm
- Yellowish green, translucent
- Grows from J-shaped or horseshoe-shaped tubers
- Inflorescence is ovalshape spikelets (2–3 mm) with several tiny flowers
- At the tip of the runners, winter buds develop in the autumn
- Occurs in brackish and saltwater habitats, marshes and mudflats

Eleocharis parvula



Slender spikerush / Meriluikka / Agnsäv

Eleocharis uniglumis

- Stem 5-50 cm
- Horizontal rhizome
- Plant forks the forehead of the rhizome.
- Base of stem shiny, red - brown, rarely green
- Spikes dark brownish-red
- Scales on the lower half look much shorter, blotchy and clasping stem

Eleocharis uniglumis subsp. fennica

- 5-20 cm, max 1 mm thick, green
- Spikes with less than 20 flowers; 1.5 mm in diameter
- Appears on seafront meadows

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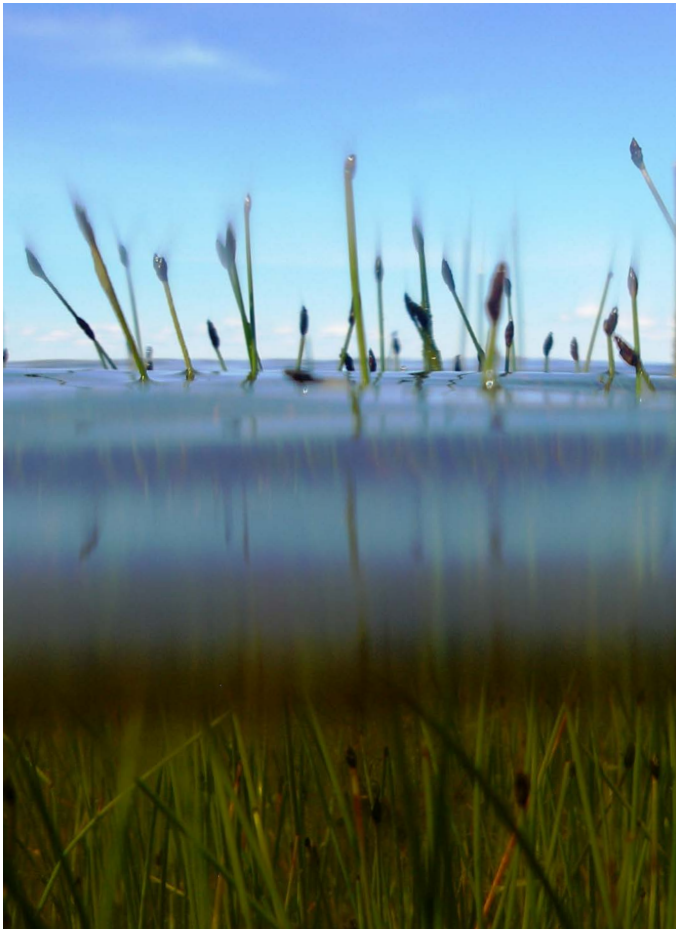
Eleocharis uniglumis



Water horsetail / Järvikorte / Sjöfräken

Equisetum fluviatile

- 50–150 cm
- Rigid, hollow and dark green stem: 3–8mm thick
- Stem with 15–20 narrow grooves/ridges
- At each joint, the stem has a whorl of tiny black-tipped scale leaves (teeth), 5–10 mm long
- Many stems have whorls of short spreading branches 1–5 cm long
- Conical inflorescence at the tip of the stem
- Appears on the shores of lakes and rivers, especially in shallow water, overflowing with brackish water; in coastal meadows

Equisetum fluviatile

Sea milkwort / Merirannikki / Strandkrypa

Glaux maritima

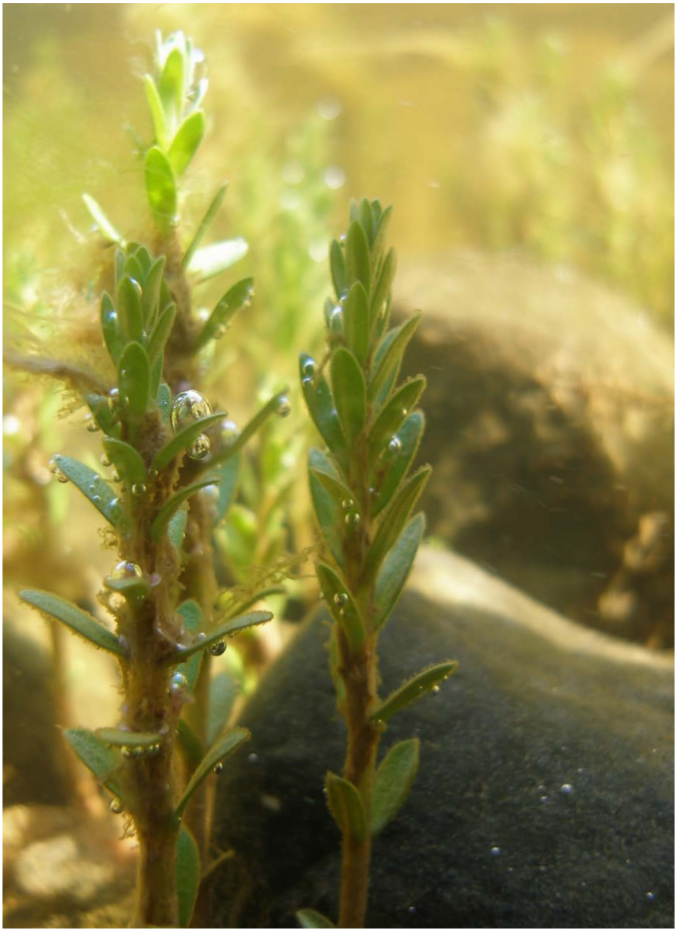
- 3–25 cm
- Stem ascending–erect, unbranched–branched at base, smooth
- Flowers lacking petals; petal-like calyx regular (actinomorphic)–bell shaped; light red and dark-spotted; 3–6 mm wide, fused, 5-lobed till halfway, lobe margins white, membranous

    Stamens 5

    Pistil a fused carpel

    Flowers solitary in axils
- Leaves are mostly opposite each other, upper part alternate, stalkless, slightly amplexicaul
- Lowest leaves scaly, brown. Upper leaves with blade ovately lanceolate–elliptic, fleshy, smooth, bluish green, faintly dark-spotted
- Fruits spherical, 3 mm long capsule
- Occurs on beaches, waterside meadows, rocky outcrops and strips of grassy land in cracks in the rocks

Glaux maritima



Lance-leaved mare's tale / Rannikkovesikuusi / Mellanhästsvans

Hippuris x lanceolata

- Middle whorls with 6 (–8) leaflets
- Leaves approx. same length as internode
- Leave shape is narrowly elliptic (lanceolate) or rounded with attached end more pointed (oblanceolate)

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Hippuris x lanceolata

Fourleaf mare's tail / Nelilehtivesikuusi / Ishavshästsvans

Hippuris tetraphylla

- 15–40 cm
- Reddish stem
- Middle whorls have 4–6 leaflets
- Leaves shorter than internode
- Leaves are narrow, oval - almost oval, slightly elongated and blunt
- Appears on the seashore in sheltered bays and shoreline meadows in shallow water
- Status: Vulnerable (FIN), critically endangered (SWE)

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Hippuris tetraphylla

Mare's tail / Lamparevesikuusi / Hästsvans

Hippuris vulgaris

- 10–60 cm
- Green stem
- Middle whorls have 8–12 leaflets
- Radial, needle-like and hollow leaves
- Under the surface of the water, the leaves are longer, thin, sloping
- Favours medium and abundant nutrient levels
- Appears in ponds, lakes, brackish waters, streams, ditches, clay pits; in shallow water, sometimes completely submerged
- Often in dense growth

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Hippuris vulgaris

Sea sandwort / Suola-arho / Saltarv

Honckenya peploides

- 5–15 cm
- Runners up to 30 cm
- Stem fleshy; forming mat-like stands
- Inflorescence a 1–6-flowered terminal cyme, solitary flowers axillary
- Leaves opposite, stalkless
- Blade ovate–elliptic, tapered, with entire margins, smooth, fleshy, dark–lime green
- Fruit spherical, 3-valved, 6–10 mm; long capsule
- Found on sandy, stony and gravelly areas by seashores

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Honckenya peploides

Tufted loosestrife / Terttualpi / Topplösa

Lysimachia thyrsiflora

- 20–70 cm
- Stem often ascending from base, usually unbranched, usually almost smooth, brownish red
- Inflorescence long-stalked, short, dense axillary raceme
- Leaves opposite, sometimes whorled, stalkless, slightly amplexicaul
- Blade on lowest leaves scaly, upper leaves lanceolate–linearly lanceolate, with entire margins, densely dark-spotted, underside sparsely haired
- Calyx and corolla 5–7 leaves, petals 4–5 mm, yellow with narrow reddish tips
- Occurs on shores, streams, ditches, swamps, bogs, often in shallow water

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Lysimachia thyrsiflora

Purple loosestrife / Pohjanrantakukka / Fackelblomster

Lythrum salicaria

- 1–2 m tall
- Forming clonal colonies, numerous erect stems growing from a single woody root mass
- Stems reddish-purple or red to purple and square in cross-section
- Leaves lanceolate, 3–10 cm long and 5–15 mm broad, downy and sessile, and arranged opposite or in whorls of three
- Flowers reddish purple, 10–20 mm diameter; clustered tightly in the axils of bracts or leaves

  6 petals (occasionally 5)

  12 stamens
- When mature, the leaves often turn bright red through dehydration in early autumn
- Occurs in ditches, wet meadows, marshes, and along shores of lakes

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Lythrum salicaria

Adder's-tongue / Isokäärmeenkieli / Ormtunga

Ophioglossum vulgatum

- 10–20 cm tall, rarely 30 cm
- Rhizome base
- Narrow pointed spike with 10–40 segments on each side
- Spore-less oval leaf-blade that is blunt and has no midrib
- Occurs in damp grasslands, fens, and scrubs

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Ophioglossum vulgatum

Common reed / Järviruoko / Vass

Phragmites australis

- 120–300 cm
- Leaves 10–20 mm wide; flat, rigid, long pointed sharp edged; gray-green
- Leaves with wrinkle/indention about midway down the leaf
- A row of small hairs in between the leaf and stem
- Spike upward branching; long, narrow, dark brown to purplish; 15–30 cm
- Appears in the water on lakes and seashore, in ditches, on coastal meadows and marshes

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Phragmites australis

Siberian primrose / Nuokkuesikko / Strandviva

Primula nutans

- Growing form: Perennial herb. Rootstock very small, tuberous.
- 5–10 cm Stem leafless, smooth scape
- Flower with funnel-shaped corolla, light purple–pink, with yellow throat, 10–20 mm broad, fused, with thin tube, 5-lobed, lobes with notched tips

  Calyx campanulate (bell-shaped), clearly ridged

  Stamens 5

  A single carpel
- Inflorescence a dense, 2–3-flowered umbel terminating scape
- Leaves in basal rosette; stalk long and thin, winged
- Blade ovate–roundly elliptic, usually with round base, with entire margins–unclearly toothed, juicy, smooth.
- Found in sandy and rocky seaside meadows
- Status: Endangered (FIN)

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Primula nutans

Common club-rush / Järvikaisla / Säv

Schoenoplectus lacustris

- Stem 1–2(–3) m
- 5–10 mm thick, green
- Carpel has 3 stigma
- 2–5 spikes in a group; spike scales are smooth, brown and shiny
- Appears in lakes with both low salt and brackish water in river estuaries; from shallow water up to a depth of 2 m

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Schoenoplectus lacustris

Grey club-rush / Sinikaisla / Blåsäv

Schoenoplectus tabernaemontani

- Stem 0,7–1,5 m
- Stem green or blue green
- Inflorescence 15–40 spikes, main branches up to 3,5 cm
- Spikes usually 2–8 spike groups
- Spike scales dull, dark papilate
- Carpel has 2 stigma
- Appears in sheltered brackish waters, up to a depth of 1 meter

Schoenoplectus tabernaemontani

Sea arrowgrass / Merisuolake / Havssälting

Triglochin maritima

- 30–70 cm
- Stem unbranched, approx. 2 mm thick
- Leaves with basal rosette, stalkless, erect
- Blade linear, semi-cylindrical, 1–3 mm wide, fleshy
- Regular (actinomorphic) flower, 3–4 mm wide
    - Tepals 6, like sepals, dark
    - Stamens 6
    - Pistils 6
- Inflorescence a long, dense raceme, flower-stalks short, ascending oblique
- Found on seashores, meadows, rocky places, often by the waterline, also on fens

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Triglochin maritima

Bulrush / Leveäosmankäämi / Bredkaveldun

Typha latifolia

- Stem 1–1,5 m
- Leaves 10–20 mm wide, flat, rigid, pale blue-green
- Leaves alternately twisted, mostly at the bottom of the stem
- Dense, cylindrical inflorescence with two part spike on top of stem
- Appears on the shores of lakes, rivers and brackish waters in shallow water; ditches in ponds, mines, sometimes on wet land

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Typha latifolia

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Floating leaf plants

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Floating leaf plants

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Sparganium natans
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Stratiotes aloides
Water soldiers / Sahalehti / Vattenaloe ▸

European frogbit / Sammakonkilpukka / Dyblad

Hydrocharis morsus-ranae

- 2–10 cm
- Short stem and weakly rooted to the bottom
- Long-stalked floating leaves as a rosette, stipulate
- Round leaf blade (kidney or heart shaped), 2–5 cm broad, leathery; top green, shiny; underside reddish
- Flowers radial, 3 spoon shaped, white petals, base yellow
- Solitary pistillate flowers, staminate flowers usually in groups of 1–4. Blooms quite rarely
- Occurs in sheltered bays in very nutritious lakes, nutritious ponds, rivers, ditches

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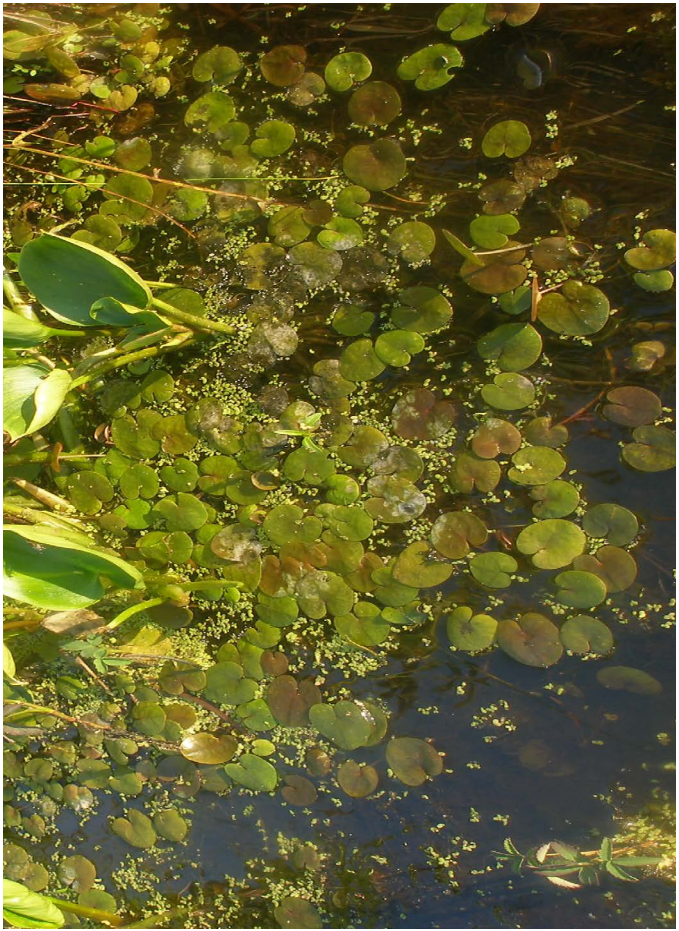
Hydrocharis morsus-ranae



White water-lily / Pohjanlumme / Nordnäckros

Nymphaea alba (sub. candida)

- Leaves round or oval shape
- Leaf veins create a net-like pattern
- Underside of leaf has reddish color
- White lotus-shaped flowers with small stamen inside
- Appears in soft-bottomed ponds, lakes, and slow flowing rivers

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Nymphaea alba (sub. candida)

Yellow water-lily / Ulpukka / Gul näckros

Nuphar lutea

- Yellow flower
- Underside of leaf is green
- Leaf veins end at the flat margin (no net pattern)
- Appears in lakes, ponds, lakes, streams, and brackish waters

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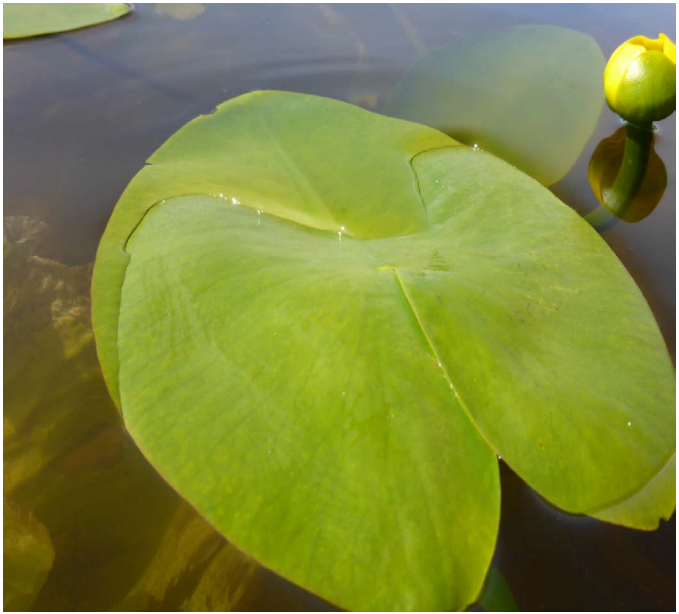
Nuphar lutea



Brackish water-crowfoot / Merisätkin / Vitstjälksmöja

Ranunculus baudotii

- 20–300 cm
- Thick, light yellow stem
- Submerged leaves with bluish colour
- Floating leaves are rare, if present then 3 section leaf blades, lobes are almost same width
- Curved flower petals, 6–10 mm
- Appears in brackish bays and fairly open places such as in deep water, as well as in hard water

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Ranunculus baudotii

Pond water-crowfoot / Järvisätkin / Sköldmöja

Ranunculus schmalhausenii

- 20–300 cm
- Both floating and submerged leaves
- Thick stem; light yellow or green
- Submerged leaves green
- Floating leaves common (flowering shoots almost always), kidney/round shaped
- Floating leaves 3 or 5 splits, scalloped shaped edge
- Flower petals at least 6–15 mm, longer than the floating leaf, petals pear-shaped
- Appears in clear-water lakes, with open or bow-like places on hard ground, rarely in low salinity brackish water

Ranunculus schmalhausenii

Kelluskeiholehti / Trubbpilblad

Sagittaria natans

- 20 to 120 cm
- Floating leaves; brownish green
- Leaf blades are short, narrow and oval shaped; less forking at the base of the leaf
- Petals 8–10 mm, white with yellow anthers.
- In lakes and slow-flowing rivers, often in deep water, sometimes on the beach in wetlands

Arrowhead / Pystykeiholehti / Pilblad

Sagittaria sagittifolia

- 20–80 cm
- Leaves quite narrow and pointy
- Lower part of leaf highly forked
- Emerging leaves often also floating
- Floating leaves broader
- Petals are 10–15 mm, white with dark purple anthers
- Appears on clay soft lakes, rivers, and brackish water beaches in shallow water or wet land; sometimes in flowing water

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Sagittaria sagittifolia

Sirppikeiholehti / Mellanpilblad

Sagittaria sagittifolia x natans

- Leaf blades brownish
- Base of leaves reduced and narrow
- Leaves are often rounded and of different sizes; forked leaf base
- Flowers with white petals, light purple anthers; no fruits

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Sagittaria sagittifolia x natans

Unbranched bur-reed / Rantapalpakko / Igelknopp

Sparganium emersum

- Stem 20–70 cm
- Leaves 4–12 mm wide
- Blunt, 3 edged emerging leaves
- Flat tops in deeper water; floating
- Stamen compact flower clusters 4–8; Carpel compact flower clusters 2–5
- Appears on the shores of the lake, with and in low salinity brackish water, ditches, ponds; often on pasture shoreline

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Sparganium emersum

Least bur-reed / Pikkupalpakko / Dvärgigelknopp

Sparganium natans

- 8–30 cm
- Vertical emerging leaves or long floating leaves
- Blunt, flat leaves; 3 edged
- Separated compact flower clusters; 1 stamen compact flower cluster, 1–3 carpel compact flower clusters
- Appears in ditches, ponds, sheltered lakes, low salinity brackish water bays, and shallow river coves; sometimes in wetlands, sometimes in streams with flowing water

Sparganium natans

Water soldiers / Sahalehti / Vattenaloe

Stratiotes aloides

- 15–50 cm, stem very short
- Weakly rooted to the bed, rising to the surface to flower
- Blooms quite rarely
- Leaves in a rosette, stalkless, long submerged leaves
- Blade narrowly lanceolate–linear, rigid, fragile, serrated, teeth with up-curving spine
- Fruit probably doesn't develop in Finland
- Occurs in small, nutrient rich, pH neutral lakes, sheltered bays in large lakes

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Free floating plants

Contents

Free floating plants

Common duckweed / Pikkulimaska / Andmat

Lemna minor

- Shoots 1-root (usually less than 5 cm)
- 2–5 groups floating
- 1,5–5 mm, long-rounded, elongated, intact, flat
- Green, rarely slightly reddish on the lower surface
- Blossoms rarely in Finland
- It is found in lush ponds, ditches, lakes, in sheltered areas of low salinity brackish water

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Lemna minor

Ivy-leaf duckweed / Ristilimaska / Korsandmat

Lemna trisulca

- Shoots with 1-root or often rootless
- Both sides green
- Shoot's apex serrated, base is long and narrow
- Shoots cross each other, forming tens of shoots of sprouting chains (often with plankton)
- Flowering shoots smaller, floating
- Appears in low salinity, brackish water, coastal lagoons and pH neutral water; lush and sheltered areas

Lemna trisulca

Bladderwort / Vesiherneet / Bläddror

Utricularia sp.

- Herbaceous insectivorous plants
- Leaves intact or multiple, narrow branching lobes
- Bladder traps on the lobes
- Yellow flowers at the upper end of the plant, above the surface of the water

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Utricularia sp.

Bladderwort / Lännenvesiherne / Sydbläddra

Utricularia australis

- 10–20 cm
- Similar to U. vulgaris, but softer and smaller
- 6–8 bristles on leaves
- Flower stalk flexuous
- 3–12 flowers (15 mm); light yellow; flat labellum
- Appears in the shallow sheltered shores of barren rivers, lakes, and brackish waters

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Utricularia australis

Intermediate bladderwort / Rimpivesiherne / Dybläddra

Utricularia intermedia

- 10–30 cm
- Shoot anchored to the base
- Two types of leaves
- Leaves with green and non green parts
- Traps only on non green parts
- Leaf blade with teeth; teeth 2–5 mm
- Appears in bogs, shores, marshes, and springs; also on the shores of lakes, rivers and low salinity brackish waters, in coastal meadows

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Utricularia intermedia

Lesser bladderwort / Pikkuvesiherne / Dvärgbläddra

Utricularia minor

- 5–40 cm long
- Stem light green, leaf with green parts and without green
- Bladder traps on both parts
- Leaves 3–15 mm with scarce lobes. No teeth on the edge of the lobes; only awn at the end of lobes
- No rooted branches
- Bladder traps 1–2 mm; 7–9 µm wide
- Appears in marshy, muddy bogs, swamps, ponds, lakes, and low salinity brackish water, shorelines, and coastal meadows buried in water or mud

Utricularia minor

Greater bladderwort / Isovesiherne / Vattenbläddra

Utricularia vulgaris

- Stem 20–100 cm long
- All the leaves of the vegetative branches are dark green - brownish - reddish, truncated
- Abundantly branched limbs with awns at the tips of the lobes
- Awns 3–12 times longer than length of teeth
- Bladder traps 2–3 mm
- Flower petals dark yellow
- Appears in the shallow sheltered shores of barren rivers, lakes and brackish waters

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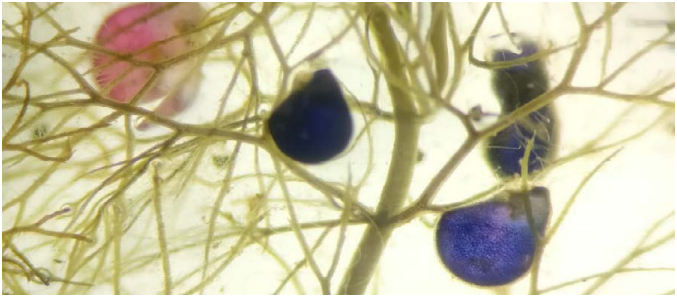
Utricularia vulgaris



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Submerged leaf plants

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Submerged leaf plants

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Stuckenia pectinata
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Stuckenia vaginata
Sheated pondweed / Tuppivita / Slidnate

Zannichellia palustris
Horned pondweed / Merihaura / Hårsärv

Long-styled water-starwort / Isovesitähti / Sommarlånke

Callitriche cophocarpa

- 10–50 cm
- Young shoots with dense hairs, often blackish
- Stalk abundant and with long branches
- Submerged leaves 10–30 x 0.5–1.5 mm, flat holes (narrow and oblong), lute-like (i.e. they have a v-pattern, 'missing piece' at the tip), not translucent
- Shoots at the top leafy, floating rosette (14–18 leaf); floating leaves with short leaf stem
- Leaf blade 5–15 x 2–4 mm, elongated, spoon-shaped, bright green
- Leaves of land plant are smaller, narrow, and lanceolate
- Fruit approx. 1 mm, almost circular, brownish, lacking wings
- Appears in streams, puddles, ditches, springs, lakes, and low salinity brackish water; in shallow water

Callitriche cophocarpa

Autumal water-starwort / Uposvesitähti / Höstlånke

Callitriche hermaphroditica

- 10–40 cm
- The stem almost branched (upright parts, very branchy at the base), short internodes
- All leaves the same, lacking leaf stem, narrowly ovate, almost linear, opposite, translucent, dark green
- Fruit is broadly alate (winged)
- Appears in brackish water, alkaline and pH neutral lakes with clay and sandy bottom

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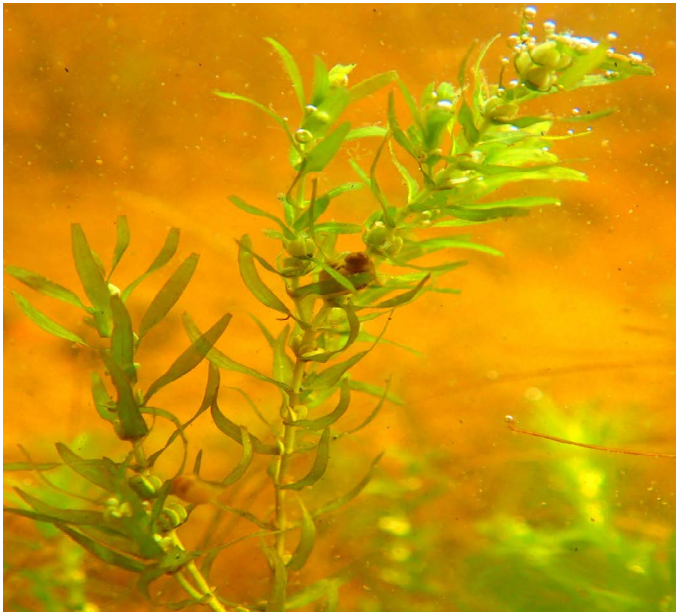
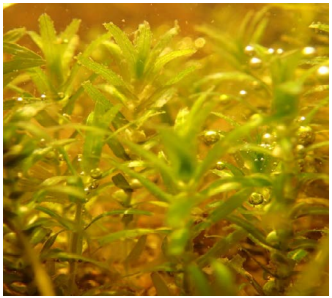
Callitriche hermaphroditica





Vernal water-starwort / Pikkuvesitähti / Smålånke

Callitriche palustris

- 5–30 cm
- Stem in water with scarce auxillary buds
- Submerged leaves flat (narrow and oblong), but with leafy floating leaf rosettes (approx. 10), oval, light green
- Fruit approx. 1 x 0,8 mm, obovate, blackish, winged from the tips
- Appears on the shores of lakes, rivers and brackish waters; periodically drying ditches and ponds, on wet land or shallow water, often on boat and pasture shorelines

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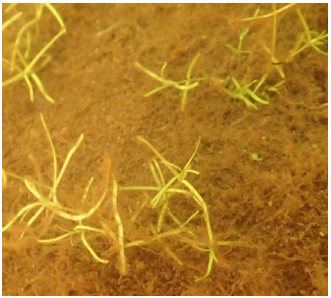
Callitriche palustris



Rigid hornwort / Karvalehti / Hornsärv

Ceratophyllum demersum

- Stems 1–3 m with numerous side shoots
- Whorled leaf position; 6–8 leaves in a whorl
- Leaf blade 1–2 apparent dichotomous lobes
- Lobes relatively stiff, curved outwards, narrow, and clearly serrated
- Separate male and female flowers produced on the same plant
- Small flowers, 2 mm long, with eight or more greenish-brown petals
- Appears in nutrient rich lakes, ponds and streams

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Ceratophyllum demersum

Eight-stamen waterwort / Katkeravesirikko / Slamkrypa

Elatine hydropiper

- 3–15 mm
- Stem branching, growing along the bottom, rooted at the nodes
- Leaves opposite, petiolate to subsessile
- Leaf-blade obovate to elliptic to ovate, tapering gradually to the petiole
- Seeds in asymmetrically horseshoe-shaped
- Appears on a silt and clay bottoms in lakes, brackish water and slow flowing shallow water; sometimes above the waterline

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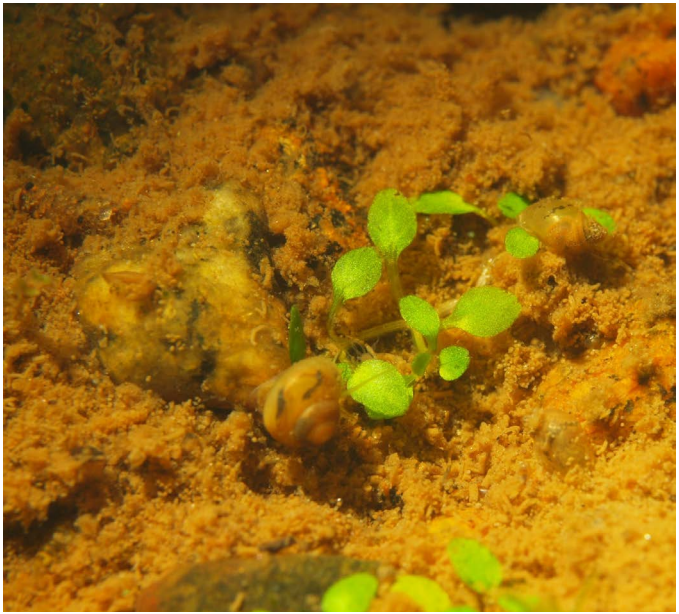
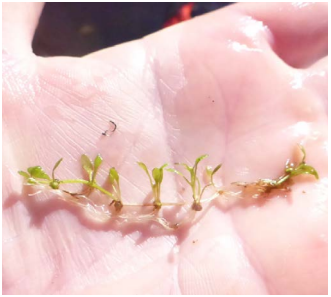
Elatine hydropiper





Oikovesirikko / Nordslamkrypa

Elatine orthosperma

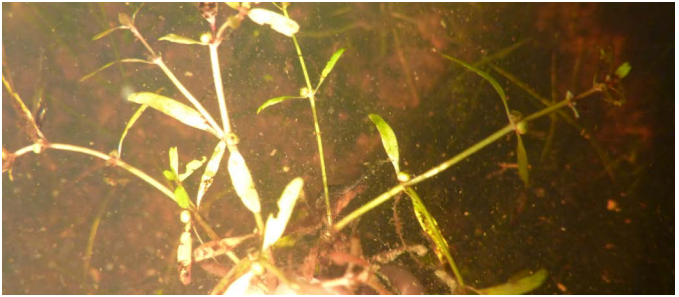
- E. hydropiper has a similar appearance
- Capsule almost spherical
- Seeds straight to slightly bent near apex
- Frequently grow as mixed communities with other aquatic plants
- Appears in lakes on sandy or silt bottoms, quite often in shallow water near the waterline and wet land; rarely salty or brackish waters
- Status: Vulnerable (SWE)

Elatine orthosperma

Three-stamen waterwort / Kolmihedevesirikko / Tretalig slamkrypa

Elatine triandra

- 3–15 mm
- Stem branching, growing along the bottom, rooted at the nodes
- Mature leaves mostly lying on the bottom, blade at least twice as long as petiole
- Leaf blade lanceolate-linear, to narrowly lanceolate, to oblong
- Seed caps almost spherical with a little curve
- Appears in lakes slow flowing waters, in soft bottoms and shallow water, rarely above the waterline



Canadian waterweed / Vesirutto / Vattenpest

Elodea canadensis

- 30 to 150 cm
- Stem slender, rooted at the fork joints
- Leaves at the bottom of the stem opposite each other; Leaves at the top are in whorls of 3
- No leaf stalk
- Leaves narrow to ovate, oblong, serrulate
- Looks similar to Callitriche hermaphroditica.
- Appears in small lake bays, in slow-flowing rivers and in large ditches, in shallow soft bottom, sometimes in low salinity brackish water
- Classified as an invasive species in Sweden and Finland

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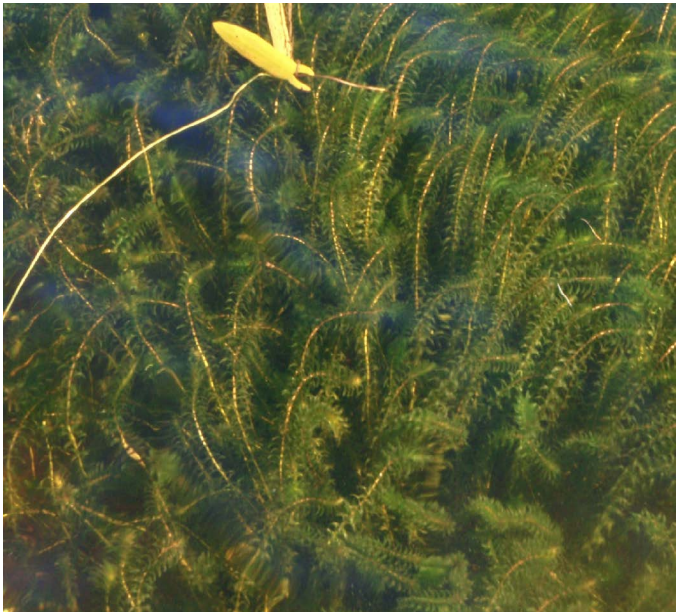
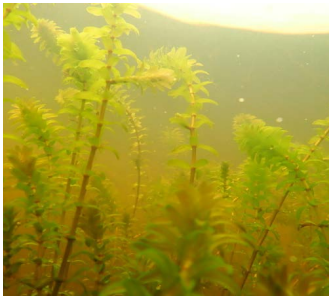
Elodea canadensis





Nuttall's waterweed / Smal vattenpest

Elodea nuttallii

- Similar to Elodea canadensis, but leaves taper to an acute point
- Branching stem with whorls of flat leaves at intervals
- Some leaves are recurved and twisted, with minute teeth
- More pale in color
- Not yet found in Finland, but exists in Sweden
- Classified as an invasive species in EU

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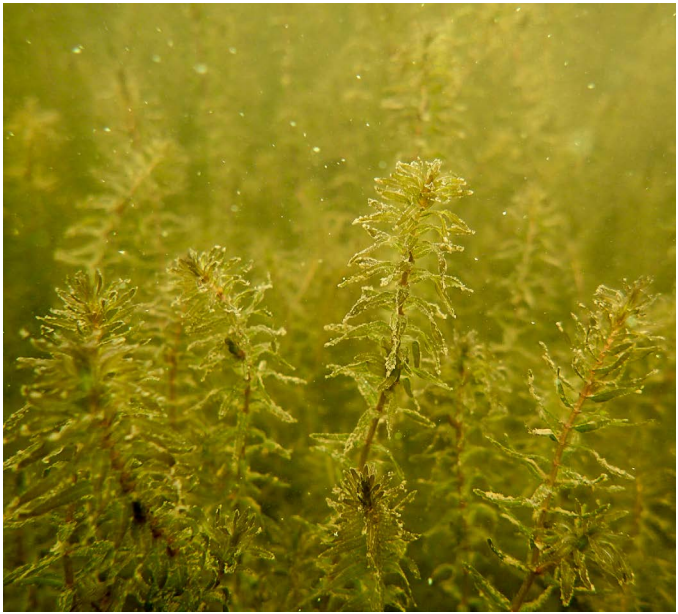
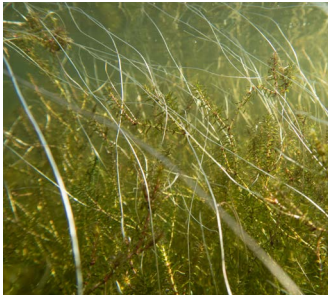
Elodea nuttallii





Watermilfoil / Ärviät / Slingeväxter

Myriophyllum sp.

- Hydrophytes perennating by roots or by detachable winter buds (turions)
- Submersed, smooth with irregularly branched shoots
- Relaxed stem, whorled leaf arrangement
- Leaves in whorls of 3–6, submerged or rarely above the surface
- Blade pinnatisect with filiform lobes which are opposite, subopposite or alternate
- Inflorescence of one or more terminal, bracteolate spikes emerging above the water surface
- Spikes more or less erect, with verticillate (or sometimes alternate), sessile, bracteate, unisexual or sometimes bisexual flowers

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Myriophyllum sp.

Alternate watermilfoil / Ruskoärviä / Hårslinga

Myriophyllum alterniflorum

- Up to 50–100 cm
- Stem, reddish-yellow
- 4 leaves in each whorl; 1–2,7 cm, reddish or bluish
- Leaves normally 5–18 mm long and extremely flaccid; leaf segments thin and delicate
- Lobes 3–9 pairs, fairly dense, short, thin, fluffy and soft
- Inflorescence drooping when present; flowers spiralling
- Appears in barren and clear water lakes, rivers and streams, rarely in low salinity brackish water

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Myriophyllum alterniflorum

Shortspike watermilfoil / Kalvasärviä / Knoppslinga

Myriophyllum sibiricum

- 50–100 cm
- Stem thick and often pale yellow, sometimes reddish
- Shoots may have branches all along their length; often several main stems
- Branch apex often compact and knob-like; leaves often 3-dimensional, featherlike in water
- Usually coarse and elastic and tend to keep their shape when emerged
- Whorls of 4 (sometimes 3 or 5) leaves
- Leaf-segments rather widely spaced, 3–13 pairs, the proximal segments almost as long as the leaf
- Inflorescence vertical
- Spikes 2–11 cm, stiff and erect, may be curved in the basal part
- All flowers whorled, with 4 flowers in each whorl bracts 1–2 mm; serrated
- Appears on sheltered beaches in brackish water and especially in northern lush lakes. In shallow water in nutrient rich lakes, pools in sea bays

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Myriophyllum sibiricum

Spiked watermilfoil / Tähkä-ärviä / Axslinga

Myriophyllum spicatum

- 50–100 cm
- Thick stem, usually reddish
- Stem almost twice as thick below inflorescence
- Branch apex typically fan-shaped
- Leaves 1,5–3 cm
- Usually 4 flat leaves in a whorl; almost featherlike in water
- Leaves usually delicate but elastic, somewhat collapsing when emerged
- Leaf-segments narrowly spaced, 8–24 pairs the proximal segments much shorter than the leaf
- Inflorescence upright
- All flowers whorled, with 4 flowers in each whorl; bracts 1–2,5 mm
- No turions
- Appears on open shores, in brackish, shallow, nutrient rich, often even slightly contaminated, water, and warm lakes

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Myriophyllum spicatum

Whorled watermilfoil / Kiehkuraärviä / Kransslinga

Myriophyllum verticillatum

- 50 to 100 cm
- Green stem
- Often unbranched or with a few long branches, usually not branching in the upper part
- Whorls of 4 or 5 leaves, usually densely spaced, looks brush-like
- Leaves persistently green, coarse but flaccid, collapsing when emerged, with 9–17 pairs of segments
- Turions 15–35 mm, on specialized, short branches at base of plant, club shaped
- Turion leaves structurally similar to ordinary leaves but smaller and delicate apices
- Spikes 5–15 cm, stiff and erect; all flowers whorled, with 5 flowers in each whorl; bracts 2–25 mm
- Appears in sheltered, lush lake bays, shorelines, low salinity brackish water

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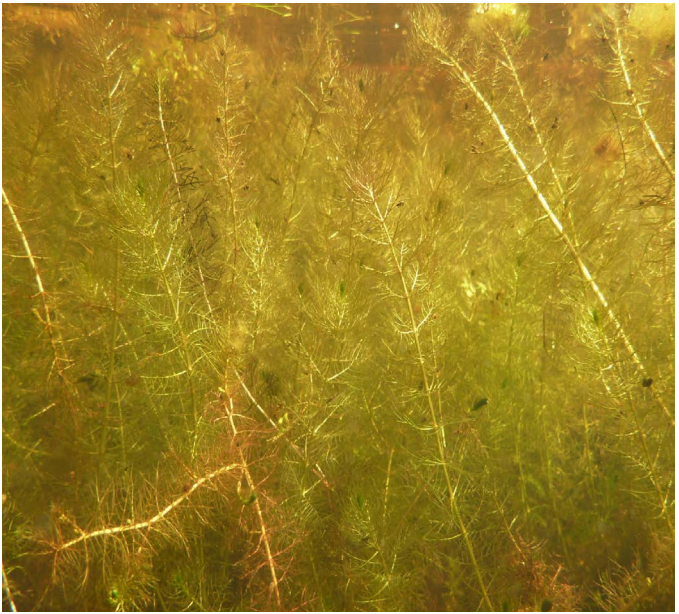
Myriophyllum verticillatum



Persicaria foliosa

- 3–40 cm
- Often reddish stem
- Leaves 3–5 mm wide
- Leaf blade almost flat (slightly lanceolate)
- Ocrea infrequently with short hairs
- Flowers 1,5–2 mm wide, green, light red or red
- Found on the seashore, on the banks of rivers and estuaries, often in shallow water
- Status Endangered (FIN)

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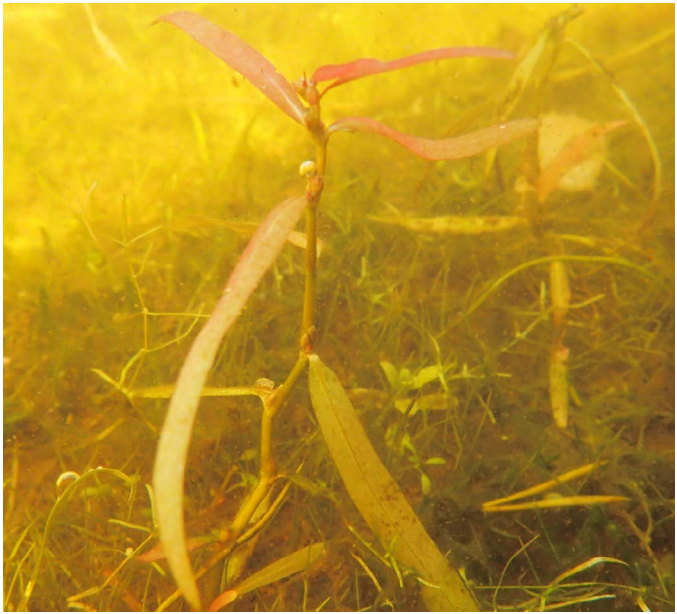

Red pond weed / Purovita / Rostnate

Potamogeton alpinus

- Cylindrical unbranched stem up to 2,8 m
- Floating leaves often brown or red
- Leaf stalk gradually tapering
- Submerged leaves obtuse (70–180 mm long); 4–7 lateral veins and slightly hooded apex
- Spiked inflorescence rising from the water
- Occurs in river shorelines

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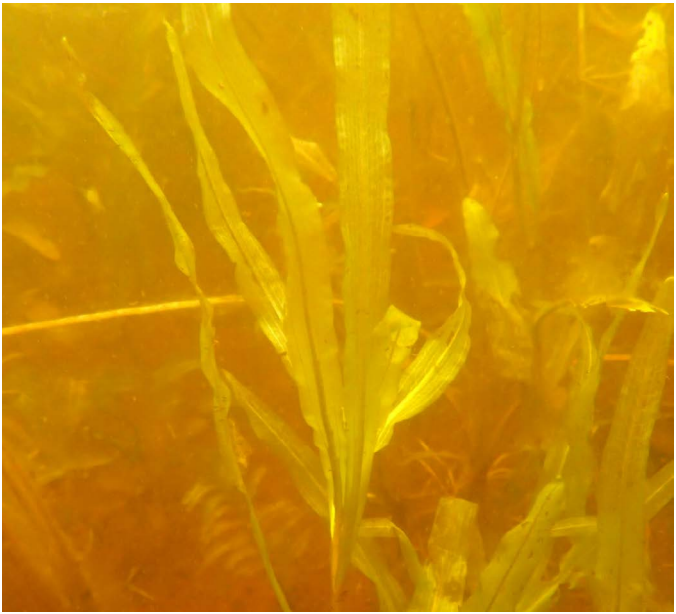
Potamogeton alpinus

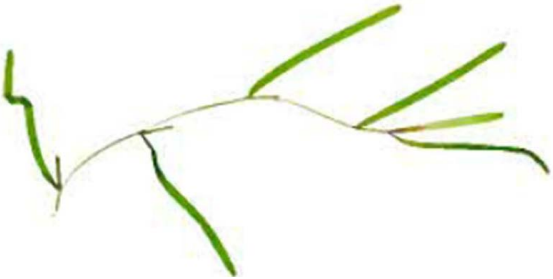


Small pondweed / Pikkuvita / Gropnate

Potamogetn berchtoldii

- 10–70 cm, circular
- Lacking rhizomes
- Big and chubby node glands.Leaves without stalk, limp; 2–4 cm long, sometimes 2 mm wide, linear, light brown-green
- 3 veins; midrib not elevated, often lack chlorophyll so light lines of the cell row often appear on its sides
- Membrane appendage on stem (0,6–1 cm), open, membranous
- Appears in ditches, ponds, sheltered lakes, rivers, and low salinity brackish waters

Potamogetn berchtoldii



Lesser pondweed / Hentovita / Spädnate

Potamogeton pusillus

- 10–50 cm
- Leaves 1–3 cm, under 0,5 sometimes 1 mm wide, rigid
- Leaf blades flat with 3 veins, without leaf stalk
- Midrib elevated from below
- Cell rows next to midrib without chlorophyll
- Leaf tip almost pointed
- Membrane appendage (7–10 mm) on stem is sheath-like
- Node gland unclear
- Appears in brackish and mildly alkaline and pH neutral water, eutrophic lakes in shallow areas

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Potamogeton pusillus

Grass-wrack pondweed / Litteävita / Bandnate

Potamogeton compressus

- 50–100 cm
- Leaves flat and alate
- Leaves 10 cm long, 3,4 mm wide, linear, clearly pointed at the tip
- Leaves multiveined (2 veins on each side of the midrib)
- No leaf stalk
- Submerged leaves 9–20 cm, dark greenish brown, tapering or rounded
- Appears in sheltered ponds and lake bays in shallow water, in fresh water
- Status: Vulnerable (SWE)

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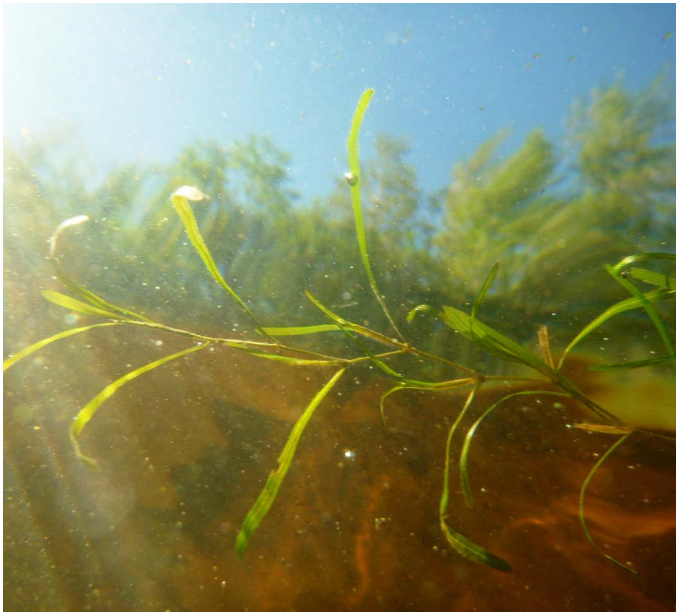
Potamogeton compressus



Flat-stalked pondweed / Otalehtivita / Uddnate

Potamogeton friesii

- 20–80 cm, flat (1 mm wide)
- Long internode, often longer than leaves
- Leaves 3-8 cm, 1–3 mm wide, fairly rigid, normal.
- 5 veins (sometimes 7) at the base
- Leaf tip is mucronate (midrib extends out) giving a sharp, point appearance
- Membrane appendage (1–1,5 cm) on the stem is sheath-like
- Appears in brackish waters, coastal lagoons and in neutral shallow lakes

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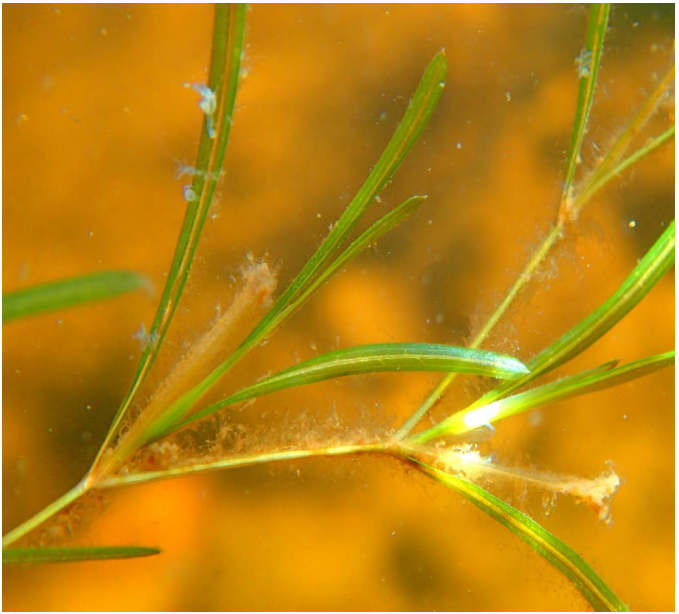
Potamogeton friesii

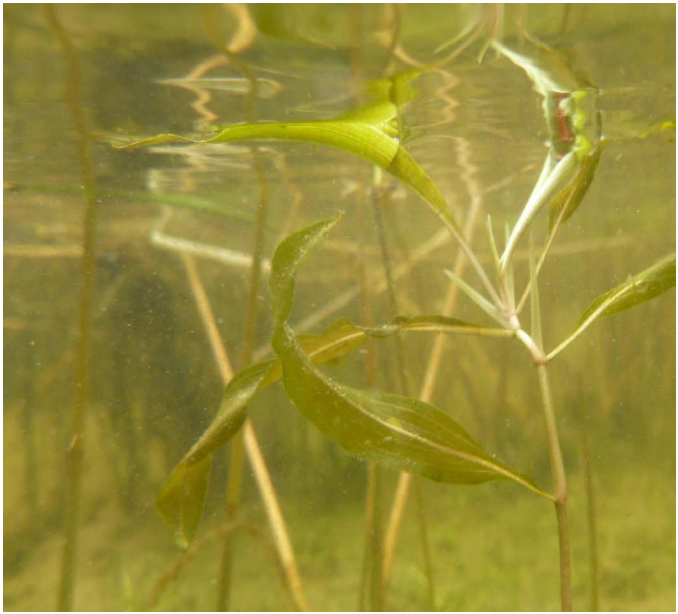


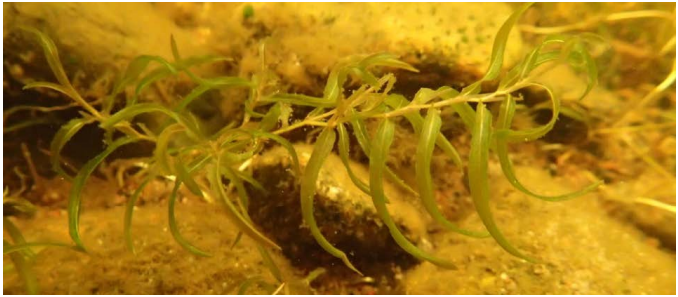
Various-leaved pondweed / Heinävita / Gräsnate

Potamogeton gramineus

- 20–70 cm
- Roots grow along the bottom (prostrate)
- Floating or non floating leaves
- Floating leaves 3–7 cm, oval-narrow, opaque
- Submerged leaf blade 3–15 cm, narrowly lanceolate, green, yellowish, or reddish brown, translucent
- Midrib not continuous
- Membrane appendage with 2 veins, 2–3 cm
- Inflorescence 2–4 cm long, spike, spike 5–10 cm
- In lakes, rarely in low salt brackish water; often in shallow water in hard mineral soil

Potamogeton gramineus





Broad-leaved pondweed / Uistinvita / Gäddnate

Potamogeton natans

- Roots grow along the bottom (prostrate)
- Floating leaf blade often shorter than leaf stalk
- Floating leaf oval shaped; 6–13 cm
- Submerged leaf long and linear; withers early
- Appears in lakes, ponds, slow-flowing water, especially mineral soils, often in deep water

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Potamogeton natans

Blunt-leaved pondweed / Tylppälehtivita / Trubbnate

Potamogeton obtusifolius

- 20–70 cm
- Flat stem, with big chubby nodes
- No leaf stalk
- Leaf blade 5–8 cm, 2–3 mm wide, roundish apex, brown green
- 3- rarely 5 veins
- Membrane appendage (1–1,5 cm) is open
- Appears in lush ponds and lakes in sheltered places; in shallow water to deep water; rarely in low salinity, brackish water

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Potamogeton obtusifolius

Perfoliate pondweed / Ahvenvita / Ålnate

Potamogeton perfoliatus

- Up to 250 cm
- Roots grow along the bottom (prostrate)
- Leaves ovate, plicate and brownish- green; translucent
- 5–12 veins surrounding midrib
- No leaf stalk; leaf blade clasping
- Spiked inflorescence; spike stalk is thinner than stem and longer than the spike
- Appears in lakes, brackish waters; often in deep water

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Potamogeton perfoliatus

Potamogeton gramineus x perfoliatus

- All leaves submerged
- Leaf blades partially clasped, narrowly ovate-elliptic, curved, somewhat wrinkled
- Often flowering, but without fruits
- Similar to P. gramineus, but the bottom of the leaf is more rounded

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Potamogeton gramineus x perfoliatus

Long-stalked pondweed / Pitkälehtivita / Långnate

Potamogeton praelongus

- Up to 250 cm
- Roots grow along the bottom (prostrate)
- All leaves submerged
- No leaf stalk
- Leaf blade 15–20 cm, 2–3 cm wide
- Lower part of leaf wide, often stem clasping
- Dark green with a blunt tip
- In lakes and low salinity brackish waters in deep water

Dwarf water buttercup / Hentosätkin / Hårmöja

Ranunculus confervoides

- 5–30 cm
- Light green, translucent
- Bush-like branching at the base; rooted at the base of the nodes
- Submerged leaf lobes are spreading, limp and sparse
- Petals 3,5–4,5mm; Anthers 0,5–0,7mm
- Appears in low salinity brackish water, pH neutral water, lakes, springs, streams; with a hard mineral base

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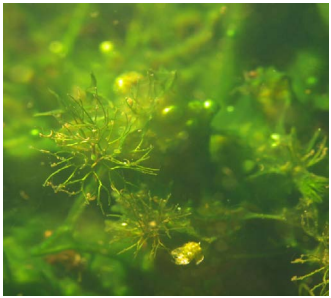
Ranunculus confervoides



Slender-leaved pondweed / Merivita / Trådnate

Stuckenia filiformis

- Stem 10–50 cm, rounded
- Leaf tip obtuse to round
- Leaves with sheaths, up to 2 cm, solid base part
- Filiform leaves under 1 mm, often 0,2 mm wide
- Appears in brackish waters and also in alkaline or pH neutral lakes, especially in the north; in sandy or clay bottoms, in nutrient rich and shallow water

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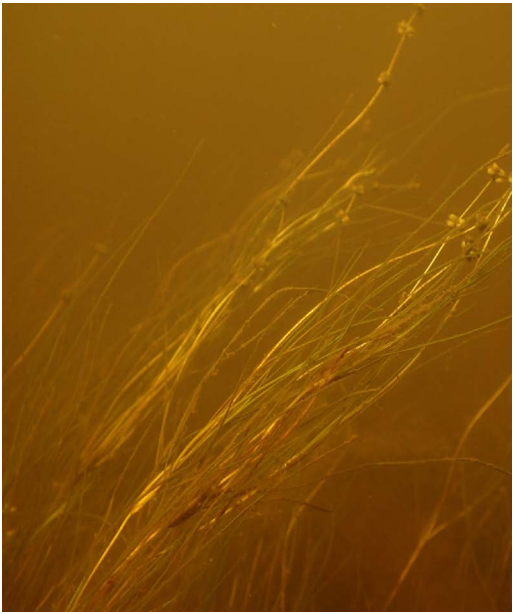
Stuckenia filiformis



Fennel pondweed / Hapsivita / Borstnate

Stuckenia pectinata

- 50–150 cm, circular in cross section
- Entire length of stem is branching
- Leaves with sheaths, leaf sheath open until base
- Leaves with pointed tips, often gradually pointed, sharp
- Blades 3–7 cm, 0,2–2 sometimes 5 mm wide, linear
- Appears in shallow, brackish water- deep water, on sandy, muddy and rocky bottoms

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Stuckenia pectinata

Sheated pondweed / Tuppivita / Slidnate

Stuckenia vaginata

- Tall, stem 60–150 cm, circular
- Sheath 2–5 cm, open until lower part
- Leaf blade 2–9 cm, about 1 mm wide, linear, obtuse upper part
- 3–5 veins, blunt top
- In fairly deep, open, brackish water

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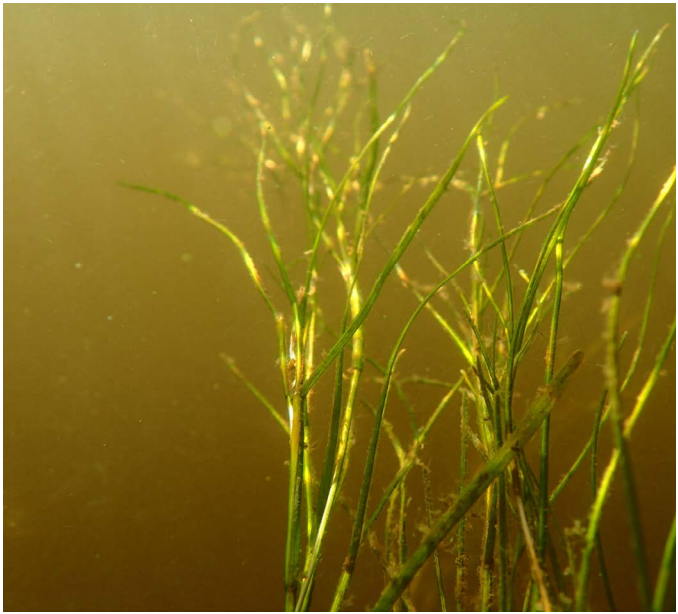
Stuckenia vaginata



Horned pondweed / Merihaura / Hårsärv

Zannichellia palustris

- Leaves maximum 0,5 mm wide, Leaf midrib unclear
- Achene (nut), banana shaped, maximum 2,5 mm
- Two subspecies: Zannichellia palustris subsp. pedicellata, Zannichellia palustris subsp. repens

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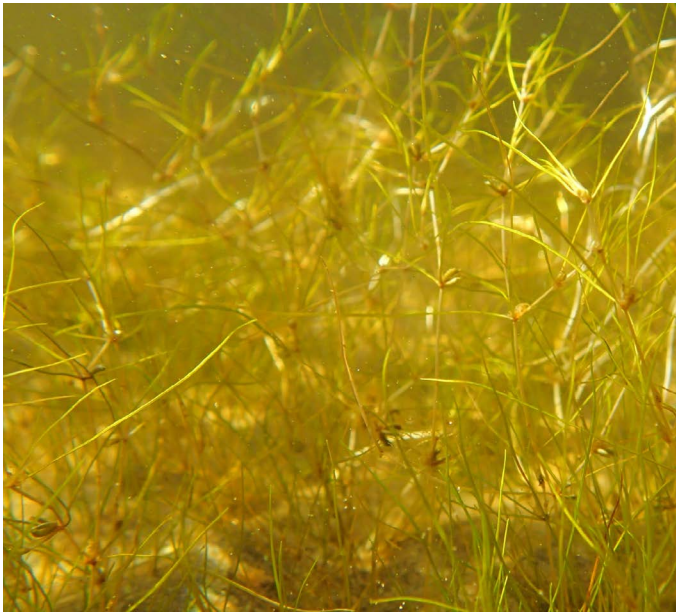
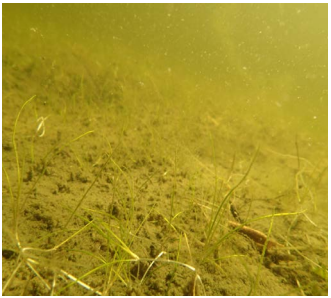
Zannichellia palustris





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Water mosses

Contents

Water mosses

Showy feather-moss

Oxyrrhyncium speciosum

- On stony bottoms between 1–7 m depth, as two different forms:

  Long snake-like branchless shoots on top of the rock (1–5 cm thick layer, individual shoots 5–15 cm long),

  Spruce-like branching shoots that are more erect on the rock (5–15 cm tall layer)
- Colour greenish-greyish
- If you find this species in the northern Bothnian Bay, there's a 90 % chance of finding also Fissidens fontanus close by, and a good chance to also find Fontinalis antipyretica
- Can be identified from other similar-looking mosses by the serrated leaf blades. Most common species of water moss in this habitat

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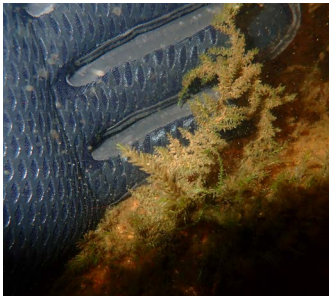
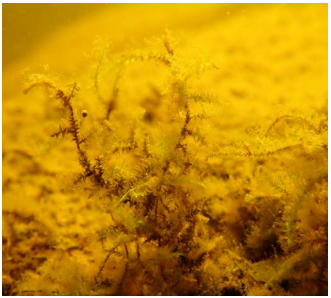
Oxyrrhyncium speciosum





Fountain pocket-moss

Fissidens fontanus

- Very small bird's feather-looking water moss
- 1–5 cm, seldom over 8 cm long shoots growing on rocks
- At 1–7 m depth in the northern Bothnian Bay
- Often very bright green
- If you find this species in the northern Bothnian Bay, there's a 90 % chance of finding also Oxyrrhyncium speciosum close by, and a good chance to also find Fontinalis antipyretica
- Fissidens fontanus can be differentiated from F. osmundoides, F. adianthoides and F. pussillus by its narrower leaves
- Most common species of water moss in this habitat. Other Fissidens species prefer more fresh and estuarine water
- Fissidens osmundoides, thicker leaves

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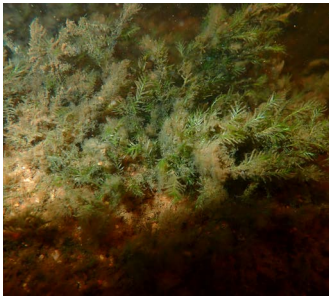
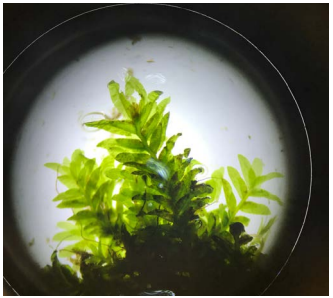
Fissidens fontanus





Greater water moss

Fontinalis antipyretica

- Most common of the northern Bothnian Bay Fontinalis species
- Big and robust species, black stem, leaves boat-like with a clear "keel"
- Shoots can be up to 30–40 cm long and form bushes on rocks
- Can be found at 1–7 m depth
- Quite often found with Oxyrrhyncium speciosum and Fissidens fontanus
- Is easily seen in drop-videos but can only be identified from the other three Fontinalis species with a microscope
- Fontinalis dalecarlica, more delicate than F. antipyretica, no black stem

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Fontinalis antipyretica

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Glossary

Glossary

- *Achene*
  Simple dry fruit produced by some flowering plants
- *Actinomorphic*
  Radial symmetry like a star fish
- *Acute*
  An angle of less than 90 degrees
- *Amplexicaul*
  Stem-clasping, usually leaves
- *Antheridia*
  The collective name of all the stamen (the pollen producing organ) on a flower
- *Anther*
  The pollen carrying part of the stamen
- *Awn*
  Hair or bristle like appendage
- *Axial cells*
  Cells that are parallel to the axis of elongation
- *Bifurcate*
  Divided into two forks or branches
- *Bract*
  Specialised leaf with reproductive structures
- *Bracteoles*
  A leaf extending under a flower or a bract to support it
- *Bulbils*
  Small, young plant reproduced from the parent plant's stem or in place of a flower on an inflorescence
- *Calcareous waters*
  Containing calcium carbonate.
- *Calyx*
  Outermost whorl of flower parts. Protects the petals as they develop
- *Chromatophores*
  Pigmented structure

- *Corolla*
  Collective name of all the petals

- *Cortical*
  Outer layer of a stem or a root just below the epidermis ('skin')

- *Corymb*
  Flowers growing in way so that the outermost ones are on longer stems than the inner ones so that all flowers are on the same level

- *Crenate*
  The leaf has blunt or rounded teeth

- *Cyme*
  A flower cluster where every branch ends in a flower

- *Dactyl*
  Used in taxonomy means toe, fingers, or end tip

- *Diaphanoid*
  Diaphanous. Translucent

- *Dichotomous*
  Axis divides into two branches

- *Dioecious*
  Male and female structures on separate plants

- *Ecorticate*
  Being without a cortex

- *Epilithic*
  Growing on a rock

- *Epiphytic*
  Growing on another plant

- *Fladas*
  Shallow bay separated from the sea by an underwater elevated bank

- *Furcation*
  Divide into two branches

- *Gametangia*
  Organ or cell producing gametes (sperm and egg cells)

- *Gynoecium*
  Part of the flower that produces ovules and develops into fruit and seeds

- *Inflorescence*
  Cluster of flowers

- *Intercalary*
  The meristem is located between its daughter cells

- *Isostichous*
  With equal rows

- *Labellum*
  Lip of the flower that attracts insects to pollinate the flower, acting as a landing pad for them

- *Lamina*
  Blade of a leaf

- *Lanceolate*
  Lance shaped

- *Microfibril*
  Very fine fibril made of cellulose and glycoprotein

- *Monoecious*
  Male and female structures on the same plant

- *Mucronate*
  Leaf tip ends abruptly in a small sharp point

- *Obovate*
  A leaf with a narrower end at the base

- *Obtuse*
  Angle greater than 90 degrees and less than 180 degrees

- *Ocrea*
  Structure made of stipules that are fused into a sheath around the stem

- *Oogonia*
  Plural of oogonium

- *Oogonium*
  Female reproductive structure in algae

- *Oospore*
  Sexual spore with a thick wall

- *Palmate*
  Leaf with veins coming out of a central point

- *Papilliform*
  Resembling the shape of a papilla (nipple-shaped)

- *Papillous*
  See papilliform

- *Parietal*
  Attached to the wall of the ovary

- *Perianth*
  Non-reproductive part of the flower

- *Perianth vestigial flower*
  Rudimentary non-reproductive flower

- *Pericentral*
  Arranged around a centre

- *Pinnatisect*
  Leaf has lobes with incisions that go almost to the midrib of the leaf

- *Pistil*
  Female reproductive part of the flower

- *Plurilocular*
  Having several cells or loculi

- *Prostrate*
  Lying flat on the ground

- *Pyrenoid*
  Subcellular structure in chloroplasts of algae

- *Raceme*
  Flowers are formed on individual stalks along the main stem

- *Rhizoids*
  An outgrowth from a thallus, usually to anchor the plant and take up nutrients

- *Spadix*
  A flower cluster with a stout stem

- *Sessile*
  Attached directly to the base/ bottom

- *Sporangia*
  Structure where spores are formed

- *Stipulodes*
  Small spiky cells on charophyte filaments

- *Stamen*
  Male part of the flower, produces pollen

- *Subtend*
  Extending under a flower to support or enfold it

- *Subulate*
  Tapering to a point (awl shaped)

- *Syncarpous*
  Having the carpels united

- *Terete*
  A circular cross section with a single surface wrapping around it

- *Thallus*
  A green shoot. Undifferentiated tissue of some organisms including algae, fungi liverworts and more

- *Trichomes*
  Fine appendages or outgrowths on plants, algae and more

- *Triplostichous*
  Two rows of cortical cells

- *Truncate*
  Leaf with a squared-off end

- *Tylacanthous*
  Term for when spine cells appear to sit on ridges. Often used when describing charophytes

- *Umbel*
  A flower cluster where the flower stalks arises from a common point

- *Unilocular*
  Having a single locule in the ovary

- *Uniseriate*
  Arranged in a single row or series

- *Zygomorphic*
  Inequality in the size or form of similar parts

Interreg
Nord
European Regional Development Fund

EUROPEAN UNION

Swedish Agency
for Marine and
Water Management

LAPIN LIITTO

SYKE

GTK

Centre for Economic Development,
Transport and the Environment

SGU
Sveriges geologiska undersökning
Geological Survey of Sweden

METSÄHALLITUS

County Administrative
Board of Norrbotten