

SHORELINE PLANTS

Species: *Alisma triviale* Pursh (Synonym: *Alisma plantago-aquatica*), northern water plantain, American water-plantain, large water-plantain, broad-leaved water plantain

Family: Alismataceae

NATIVE

Leaf: Leaves with parallel-looking veins arise from the plant base and are stiff when growing above the water. Submerged leaves may be ribbon-like and flexible. To 45 cm long including the stalk, oval-shaped blade to 15 cm long, 10 cm wide.

Stem: What appear to be stems are actually stalks of the inflorescence (peduncle). Stem is a bulb-like fleshy corm, usually buried in sediment.

Flower: White to pinkish individual flowers to 7 mm across; each has 3 sepals and 3 petals. They occur in whorls on slender branches arranged around a central flower stalk. Whorls form a cone-shaped outline. Stalks to 1.2 m long, much longer than leaves.

Fruit: Dry, brown, flattened, oval-shaped achenes are arranged in a ring on small, flat receptacles. Edge of achene with 1 groove.

Root: Fibrous, arising from the corm. Moose and ducks will often dig up the roots for food.

Propagation: Seeds or division of corms.

Habitat: Marshy areas and along shorelines; occasionally completely submerged.



Arthur Holmes, New England Wild Flower Society

SHORELINE PLANTS

Species: *Limosella aquatica*, water mudwort, northern mudwort

Family: Scrophulariaceae

NATIVE

Leaf: Leaves arise from the plant base with transparent stipules located at the base of the leaf stalks. Spoon-shaped to oval blades are 5-30 mm long and 2-8 mm wide; leaf stalks (70 10 cm long) are generally distinct from the blade. Submersed leaves are narrower than the emergent leaves.

Stem: An upright stem is lacking. Stolons connect individual clumps of plants. Leaf stalks may look like stems to an untrained person.

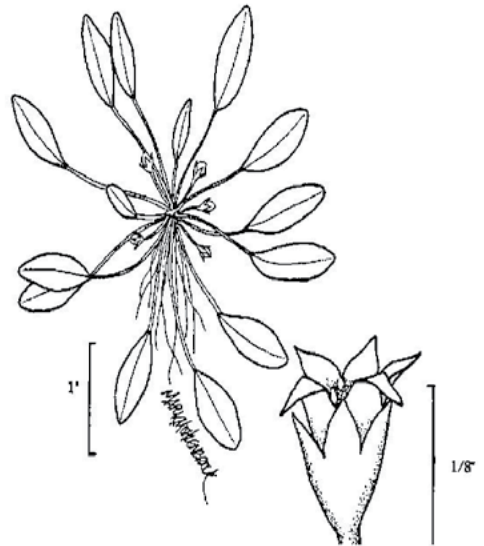
Flower: Flowers occur singly on stalks much shorter than the leaves and have 5 small sepals and petals that are fused together at the base. Dull white or purplish petals (about 2 mm long) with pointed tips.

Fruit: Ball-shaped or oval capsule is 3-5 mm long and contains many tiny seeds.

Root: Many fibrous roots emerge from the plant base and sometimes rise above the lower bases giving the plant a woven appearance.

Propagation: Seeds, stolons.

Habitat: Shallow still or slowly flowing waters. Muddy or sandy shores and areas with fluctuating water levels. Lakeshores subject to daily water-level fluctuations.



Gerald D. Carr, University of Oregon



Gerald D. Carr, University of Oregon



SHORELINE PLANTS

Species: *Butomus umbellatus*, flowering rush

Family: Butomaceae

INVASIVE

Leaf: Linear with triangular cross-section; up to 3ft long; can be twisting or spiraling.

Stem: Occurs as rhizomes beneath the soil surface.

Flower: Large umbrella shaped inflorescences, which bears numerous pink to whitish-pink flowers on round leafless stalk. Flowers 2-2.5cm wide with three petals and three similar colored sepals, which persist after flowering.

Fruit: Numerous seeds formed in rounded fruit.

Root: Extensive network of friable rhizomes.

Propagation: In Montana, plants are sterile variety that spread through fragmentation of fragile rhizomes as well as small bulblets arising from the rhizomes. Fragments can float and disperse by water currents.

Habitat: Riparian, but can occur as a submerged plant in depths up to 20 feet of water. Requires wet soil and full sun; shade intolerant.



Montana Department of Agriculture, File Photo



SHORELINE PLANTS

Species: *Elatine rubella*, southwestern waterwort

Family: Elatinaceae

NATIVE

Leaf: Opposite, glabrous and often have a reddish tint, 2-8 mm long, the blade is linear-oblong to narrowly elliptic with blunt or notched tips.

Stem: 2-6 cm.

Flower: 1-2 mm across, 3 opposite sepals, 3 petals, 3 stamen, membranous, very pale greenish white.

Fruit: Round in shape, 3-celled capsule.
Seeds are straight or gently curved with 18-27 pits in 8-10 rows.

Propagation: Seed.

Habitat: Shallow vernal pools and pond edges, tolerant of saline and alkaline soil. This spp. maybe mistaken for *E. triandra*.



Barry Breckling



SHORELINE PLANTS

Species: *Hippuris vulgaris*, common
mare's-tail, mare's tail

Family: Hippuridaceae

NATIVE

Leaf: Arranged in whorls; 6-12 stalkless, smooth-edged leaves per whorl. Submerged leaves: soft, pale green, and measure up to 5 cm long and 3 mm wide. Emergent leaves: dark green, stiffer, and smaller. In deeper water only the submerged leaf form may be present.

Stem: Unbranched stem is hollow, up to 1 m long, and forms roots at the nodes. Stem is erect when emergent; limp when submerged; and can form creeping rhizomes.

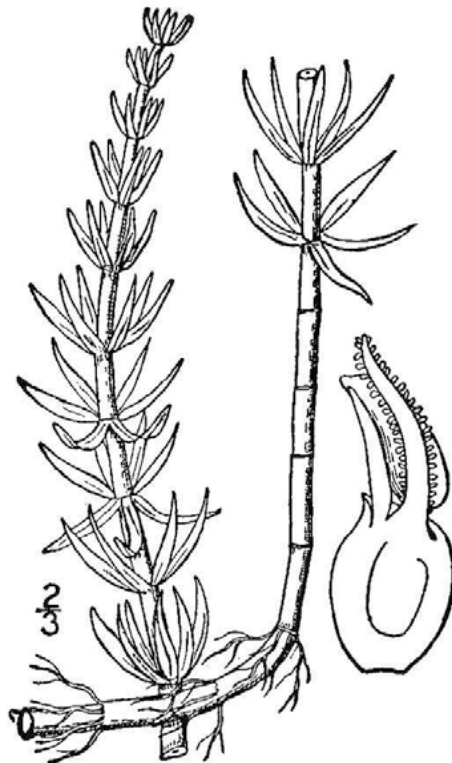
Flower: Small, inconspicuous flowers are at the leaf bases. Flowers, which lack petals and sepals, are reduced to a tiny rim.

Fruit: Tiny, 2mm long nutlike fruit (mature fruit about 2 mm long), nut-like, and located at leaf bases.

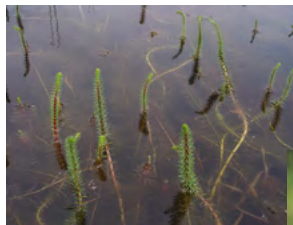
Root: Fibrous. Arising from lower portion of stems and rhizomes.

Propagation: Seeds, rhizomes. Will regrow from stem cuttings.

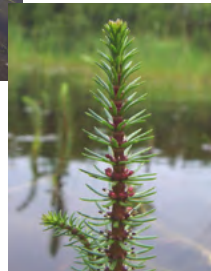
Habitat: At the edges of lakes, ponds, and streams in fresh, usually shallow water, though it will grow in water up to 2 m deep.



Donald Cameron, Maine
Natural Areas Program



Donald Cameron, Maine
Natural Areas Program



SHORELINE PLANTS

Species: *Iris pseudacorus*, yellowflag iris, yellow iris, water-flag, paleyellow iris

Family: Iridaceae

INVASIVE

Leaf: Dark green, flat leaves up to 3cm wide; sword-like 3-4 feet in height. Leaves resemble cattails but arise in a fan shape from soil.

Stem: Stem bearing flowers branches once; solid.

Flower: Bright yellow, showy flower 10-12 cm across that flower from June to August.

Fruit: Green, three-parted capsule (2.5-8 cm long); triangular-shaped. Pod splits open when dried and releases numerous round, brown seeds.

Root: Stout rhizomes, 1-4 cm in diameter; roots 10-30 cm long.

Propagation: Rhizomes; seeds.

Habitat: Thrives in full sun with moist to saturated soils; can survive submersion in water and periods of dry conditions. Found along shorelines, ditches, banks, and wetlands.



Arthur Haines, New England Wild Flower Society



Center for Aquatic Invasive Plants,
Institute of Food & Agricultural
Sciences University of Florida



SHORELINE PLANTS

Species: *Lythrum salicaria*, purple loosestrife, lythrum

Family: Lythraceae

INVASIVE

Leaf: Narrow leaves are stalkless, lance-shaped, 3-14 cm long, heart-shaped at the base, and sometimes covered with fine white hairs. They are opposite or whorled, and sometimes alternate on the upper portion of the stem.

Stem: Erect stem is usually square in cross-section, 0.5-2 m tall, and often branched. May be covered with fine whitish hairs.

Flower: Showy purple-pink flowers occur in erect spikes at the stem tops. Stalkless flowers have 5 sepals and 5-7 delicate wrinkled petals (7-14 mm Long).

Fruit: Egg-shaped capsule (3-4 mm) has many tiny seeds. A single plant may produce up to 2.7 million seeds a year.

Root: Strong rhizomes.

Propagation: Tiny, lightweight seeds are readily spread by waterfowl and other animals. Vegetative reproduction by shoots and rhizomes.

Habitat: Marshes, lake shores, ponds, stream banks, and ditches. Occasionally grows in upland areas.



Center for Aquatic Invasive Plants, Institute of Food & Agricultural Sciences University of Florida



Arthur Haines, New England Wild Flower Society



SHORELINE PLANTS

Species: *Megalodonta beckii*. (Synonym: *Bidens beckii*), water marigold, Beck water marigold, Beck's water-marigold

Family: Asteraceae

NATIVE

Leaf: Oppositely arranged and of two types.

Submerged leaves: finely dissected, on short stalks, have a fan-like shape, and appear to be whorled around the stem. Emergent leaves: if present, are simple, toothed leaves that measure 2-4 cm in length and are sometimes seen floating on or rising above the water surface.

Stem: Mostly submerged stem is up to 7 m long; 8-10 cm usually extends above the water when mature.

Flower: Yellow and sunflower-like. As with all members of the sunflower family, each flower head actually consists of numerous tiny flowers, with the disk flowers forming the center of the head, and each "petal" actually representing an individual ray flower. Disk flowers are clustered in a head about 1 cm wide. Bordering ray flowers are each 1-2 cm long. This plant rarely flowers in Montana, and when it does, it only flowers in the northwest counties of the state.

Fruit: Long (to 12 mm) and narrow, round to oval in cross section. Dark brown achenes have 3-6 needle-like bristles at the base.

Numerous achenes form on each flower head.

Root: Thin and fibrous, emerging in clusters from the lower nodes of the stem.

Propagation: Seeds dispersed by water or animals.

Habitat: Lakeshores, ponds, and slow-flowing streams.



Donald Cameron, Maine Natural Areas Program

SHORELINE PLANTS

Species: *Nasturtium officinale* (Synonym: *Rorippa nasturtium-aquaticum*), common watercress, water cress

Family: Brassicaceae

NATIVE

Leaf: Older leaves are compound, with each leaf consisting of 3-11 smooth or wavy-edged, oval of lance-shaped leaflets growing from a central stalk. Entire leaf measures 4-12 cm long, with the end leaflet usually larger than the others. Young leaves are simple, not compound.

Stem: Trailing, fleshy stem is 10-60 cm long, breaks easily, and is upright at the ends. It forms roots at the lower nodes.

Flower: White flowers appear above the water from March through October. Flowers are clustered at the ends of the stems on short stalks. The 3-5 mm long flowers have 4 white petals.

Fruit: Thin, slightly curved, cylindrical pods are 10-25 mm long and about 2 mm wide, on stalks 8-12 mm long. Seeds are small (1 mm), round, and arranged in four rows inside the pods.

Root: Thin and fibrous. Roots often grow from the nodes of trailing stems.

Propagation: Rooting stem fragments and seeds.

Habitat: Flowing streams and other shallow freshwater; prefers cold slow-moving water; common in highway ditches. Almost always associated with springs or spring-fed streams.



Arthur Haines, New England Wild Flower Society

SHORELINE PLANTS

Species: *Polygonum amphibium* (Synonym: *Persicaria amphibia*, *Polygonum coccineum*), water smartweed

Family: Polygonaceae

NATIVE

Leaf: Floating or upright with papery sheaths (stipules) at the base. Alternately arranged. Large, up to 35 mm long, 6 cm wide with a rounded or pointed tip. Leaf stalk is up to 5 cm long.

Stem: Jointed, to 2 m long, with an underground rhizome and an aboveground stem that sometimes sprawls on or just below the water surface. Stout (to 1 cm across), usually lying flat, but sometimes erect.

Flower: Small, each flower 4-5 mm long. Clustered to form oblong spikes at the tips of flower stalks. Pink flowers form dense clusters, 1-15 cm long.

Fruit: Dry, hard, shiny brown achene contains one seed, 2.5-3 mm, round and flattened.

Root: Fibrous, arising from rhizomes and stem joints in contact with ground water.

Propagation: Seeds; roots from trailing stems.

Habitat: Shallow water along the margins of lakes, ponds, and streams; water smartweed may also form extensive mats well offshore in deep water.



Donella Cameron, Maine Natural Areas Program



Donella Cameron, Maine Natural Areas Program



SHORELINE PLANTS

Species: *Sagittaria cuneata*, Northern arrowhead, wapato, duck potato, arum-leaf arrowhead

Sagittaria latifolia, common arrowhead, wapato, duck potato, broadleaf arrowhead

Family: Alismataceae

NATIVE

Leaf: *S. cuneata*: emergent arrowhead-shaped leaves, 5-15 cm long; may also have long, narrow, oval-to-heart-shaped floating leaves, and long, narrow submerged leaves. Stalks usually triangular in cross section. *S. latifolia*: variable leaf shapes, but usually has emergent 5-30 cm long arrowhead-shaped leaves when mature. Leaf stalks usually angular in cross section.

Stem: Short, at plant base (stem-like leaf stalks arise from plant base).

Flower: Usually in whorls of 3, each with 3 white petals and 3 green sepals (1-2 cm long). *S. cuneata*: flowers to 2.5 cm across. *S. latifolia*: flowers to 4 cm across. When in fruit the stalks spread outwards.

Fruit: Achenes approximately 2 mm long, crowded on globe-shaped heads. *S. cuneata*: beak at achene tip >0.5 mm. *S. latifolia*: beak to 1-2 mm, horizontal.

Root: Rhizomes with thick, round, white or bluish tubers that may grow as large as chicken eggs.

Moose and ducks dig the roots for food.

Propagation: Tubers, rhizomes, seeds.

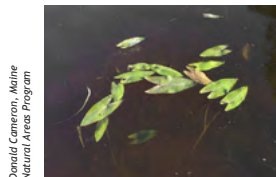
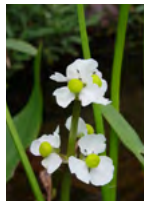
Habitat: Shorelines and marshy areas up to 1.5 m deep.



Arthur Hallett, New England Wild Flower Society



Donald Cameron, Maine Natural Areas Program



Donald Cameron, Maine Natural Areas Program

LATIFOLIA



Donald Cameron, Maine Natural Areas Program



SHORELINE PLANTS

Species: *Tamarix ramosissima*, salt cedar, tamarisk

Family: Tamaricaceae

INVASIVE

Leaf: Slender branches covered with small scale-like green leaves (1-2 mm long) that overlap each other.

Stem: Smooth reddish brown bark in main branches; forming ridges or furrows with age. Smaller branches covered in scale-like leaves

Flower: Dense inflorescences containing many white to pink flowers in 2 inch spikes. Flowers 1.5mm across with 5 petals.

Fruit: Capsules containing many seeds. Mature plant can produce up to 500,000 seeds annually

Root: Deep-penetrating taproot and lateral rhizomes. Mature plants can absorb and transpire over 200 gallons of water per day.

Propagation: Seeds with a tuft of hair on one end aids in dispersal by wind and water.

Habitat: Along streams, waterways, banks, & drainage washes. Any moist areas where seeds are exposed to extended periods of saturation periods. This spp. needs wet, disturbed soils to establish.



Peter Lesica