

Plant Guide

to Lois Hole Centennial Provincial Park, Alberta



Big Lake Environment Support Society



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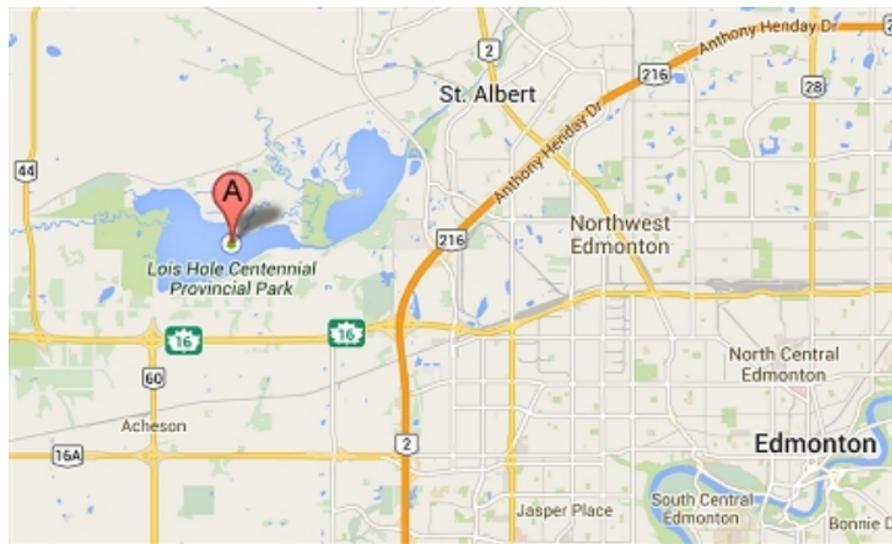
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2014

Location of Lois Hole Centennial Provincial Park, Alberta



Map courtesy of Google, Inc.

INDEX

Location of Lois Hole Centennial Provincial Park, Alberta.....	3
Trees	8
Manitoba Maple	10
Paper Birch.....	11
White Spruce.....	12
Black Spruce.....	13
Balsam Poplar.....	14
Trembling Aspen.....	15
Shrubs	16
Saskatoon	17
Red Osier Dogwood	18
Beaked Hazelnut.....	19
Wild Black Currant.....	20
Skunk Currant.....	21
Black Currant	22
Wild Gooseberry	23
Wild Red Currant	24
Beaked Willow	25
Pussy Willow.....	26
Sandbar Willow	27
Meadow Willow	28
Canadian Buffalo-berry	29

Highbush Cranberry	30
Forbs	31
Sweet Flag	32
Marsh Marigold.....	33
Spotted Water Hemlock.....	34
Canada Thistle	35
Spotted Coral-Root.....	36
Hemp Nettle	37
Spurred Gentian.....	38
Cow Parsnip	39
Touch-me-not	40
Touch-me-not	41
Common Duckweed	42
Tufted Loosestrife	43
Common Mint	44
Tall Lungwort.....	45
Bishop's Cap	46
Indian Pipe.....	47
Ledingham's Physostegia	48
Northern Green Orchid.....	49
Water Smartweed	50
Sago Pondweed	51
Slender Pondweed	52

Richardson's Pondweed	53
Common Pink Wintergreen	54
Water Parsnip	55
Common Cattail	56
Stinging Nettle.....	57
Common Bladderwort	58
Early Blue Violet.....	59
Canada Violet.....	60
Ferns	61
Ostrich Fern.....	62
Narrow Spinulose Shield Fern.....	63
Sedges.....	64
River Bulrush	65
Slough Sedge.....	66
Wheat Sedge.....	67
Hardstem Bulrush.....	68
Grasses.....	69
Blue Joint.....	70
Slough Grass.....	71
Quack Grass	72
Smooth Brome.....	73
Reed Canary Grass	74
Lichens	75

Pin Cushion Sunburst Lichen	76
Hammered Shield Lichen	77
Mosses	78
Stocking Moss	79
Big Redstem	80
Lung Liverwort.....	81

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Trees

Manitoba Maple

Acer negundo; Sapindaceae Soapberry Family



General: The leaves of this small tree do not resemble the palmate leaves of other maples, but the winged fruits (samaras) are unmistakable. Trees produce abundant seeds, and are often grown in urban gardens.

Growth habit: Deciduous tree.

Habitat: Moist forest and lakeshore.

Leaves: Divided into three sections, each section with up to three pointed lobes.

Stems: Main stem forms a branching truck.

Flowers: Male and female flowers are produced on separate trees. Flowers have no petals and are produced in dense, drooping clusters in late May just as the leaves are expanding.

Fruits: Female trees produce dry, winged fruits that are dispersed by the wind. Ripe seeds often remain on the tree throughout winter.

Paper Birch

Betula papyrifera; Betulaceae Birch Family



General: Deciduous tree with distinctive peeling white bark. The sap of this tree is delicious when prepared like maple syrup. Yellow-bellied Sapsuckers make lines of horizontal holes in the bark and prefer to lap up the sap raw, complete with any insects that might have gotten stuck in the sugary flow.

Growth habit: Deciduous tree.

Habitat: Upland forests and hillsides often intermixed with Trembling Aspen.

Leaves: Dull, with a broad heart-shaped base and tapering abruptly to a pointed tip. The undersides of leaves have white hairs where veins join together.

Stems: Main stem forms a truck with white, papery bark that peels off in strips.

Flowers: Separate male and female clusters of flowers with no petals and are produced in dense, drooping clusters in May.

Fruits: Winged nutlets produced in the axils of three lobed bracts. Seeds and bracts are often visible on top of the snow in late winter.

White Spruce

Picea glauca; Pinaceae Pine Family



1



General: White Spruce and Black Spruce are similar looking species. White Spruce (*Picea glauca*) has longer female cones (> 2.5 cm), hairless young twigs, and often forms a wider tree. Black Spruce (*Picea mariana*) has shorter female cones (< 2.5 cm), tiny brown hairs on young twigs, and forms a narrower tree often (but not always) with a club-shaped top.

Growth habit: Coniferous tree.

Habitat: Upland forests.

Stems: Unbranched main stem with drooping side branches. Like other spruces, twigs are covered in wart-like projections (the old woody base of each leaf).

Leaves: Needle-like, four-sided, with pointed tips; strong “sprucy” odour when crushed.

Flowers: Does not produce flowers. Female cones are brown with overlapping scales; male cones are small and fall off the tree in early spring.

Fruits: Does not produce fruits. Seeds winged for wind dispersal and are released from the upper surface of cone scales.

Black Spruce

Picea mariana; Pinaceae Pine Family



General: Spruce trees are used as winter roosting areas for non-migratory birds and seeds are a favourite food of squirrels.

Growth habit: Coniferous tree.

Habitat: Moist, peaty soil, occasionally in upland forests; prefers more moisture than White Spruce (*Picea glauca*).

Stems: Unbranched main stem with drooping side branches. Like other spruces, twigs are covered in wart-like projections (the old woody base of each leaf).

Leaves: Needle-like, four-sided, with pointed tips; strong “sprucy” odour when crushed.

Flowers: Does not produce flowers. Small female cones (<2.5 cm) brown with overlapping scales; male cones small and fall off the tree in early spring.

Fruits: Does not produce fruits. Seeds winged for wind dispersal and are released from the upper surface of cone scales.

Balsam Poplar

Populus balsamifera; Salicaceae Willow Family



General: This deciduous tree can be confused with Trembling Aspen. However, Balsam Poplar has a round, rather than flattened leaf stalk, leaves with a shiny top surface, and the bark of older trees becomes deeply furrowed with age. The inner bark of Balsam Poplars is eaten by beavers. Large trees and snags can be used by cavity nesting bird species to rear young.

Growth habit: Deciduous tree.

Habitat: Common in upland forests, often intermixed with Trembling Aspen; tolerant of wet soil along streams and lake margins.

Leaves: Dark green, shiny, with a round stalk; buds are fragrant.

Stems: Main stem forms a truck with thick, furrowed bark.

Flowers: Separate male and female trees. Flowers have no petals and are produced in dense, drooping clusters in early spring.

Fruits: Female trees produce capsules that open to release many silky-haired seeds (the conspicuous Poplar fluff of early summer).

Trembling Aspen

Populus tremuloides; Salicaceae Willow Family



General: Flattened leaf stalks make the leaves shake and “tremble” in the wind, unlike the round leaf stalks of Balsam Poplars. Trembling Aspen has a flattened leaf stalk, leaves with a dull, rather than shiny top surface, and the bark of older trees does not become as deeply furrowed as Balsam Poplar.

Growth habit: Deciduous tree.

Habitat: Common in upland forests, often intermixed with White Spruce and Trembling Aspen.

Leaves: Dull green, with a flattened leaf stalk.

Stems: Main stem forms a truck with pale, occasionally white bark.

Flowers: Separate male and female trees. Flowers have no petals and are produced in dense, drooping clusters in early spring.

Fruits: Female trees produce capsules that open to release many silky-haired seeds (the conspicuous Poplar fluff of early summer).

Shrubs

Saskatoon

Amelanchier alnifolia; Rosaceae Rose Family



2

General: This shrub is well known for its tasty and abundant fruit. Saskatoon pie is an old prairie favorite.

Growth habit: Shrub, occasionally small tree.

Habitat: Common in understory of upland forests and hillsides.

Leaves: Oblong with a coarsely toothed margin. Leaves are hairy on both sides.

Stems: Sparsely branched; older plants with thick woody trunks.

Flowers: Flowers are produced in upright clusters in early June. Each small flower has five petals and five fused sepals.

Fruits: Edible and tasty dark purplish-blue fruits are more like tiny apples (pomes) than true berries.

Red Osier Dogwood

Cornus stolonifera; Cornaceae Dogwood Family



General: This common shrub has conspicuous red stems, making it easy to identify even in winter. The twigs are a favorite food of moose and deer. The tips of branches often have a distinctive branching pattern that reflects years of nibbling. Snipped ends reveal more recent foraging.

Growth habit: Shrub, up to 3m tall.

Habitat: Common in upland forests.

Leaves: Oval, pointed at both ends, with no teeth on the margin.

Stems: Bark conspicuously reddish, occasionally yellowish.

Flowers: Flat-topped clusters of white flowers appear in June through to July. Each tiny flower has four petals and four sepals.

Fruits: Inedible white berries are produced in late summer.

Beaked Hazelnut

Corylus cornuta; Betulaceae Birch Family



General: In the absence of flowers or fruit, this shrub can resemble Green Alder (*Alnus viridis*); however, Beaked Hazelnut has heart shaped leaf bases.

Growth habit: Shrub.

Habitat: Common in understory of upland forests, often forming dense thickets.

Leaves: Oblong with a pointed tip and a heart-shaped base; margin coarsely biserrate.

Stems: Branched at base; bark dark brown and streaked with lighter colour.

Flowers: Male and female flowers produced on the same plant. Male flowers have no petals and are produced in dense, drooping clusters in early spring; female flowers in very dense clusters and without petals; stigmas are red and conspicuous.

Fruits: Edible nuts enclosed by a fused calyx are produced in late summer.

Wild Black Currant

Ribes americanum; Grossulariaceae Gooseberry Family



General: There are several species of currants in the park. While these species can look similar when not in flower, the scent of the leaves can definitely help to identify which species is which. Leaves of *Ribes americanum* are scentless.

Growth habit: Shrub.

Habitat: Common in the understory of forests and willow thicket at the margin of Big Lake.

Leaves: Palmately compound and reminiscent of maple leaves - scentless.

Stems: Branching shrub.

Flowers: Drooping clusters of greenish yellow flowers are produced in June. Each flower has five petals, five sepals, and five stamens.

Fruits: Edible black berries are produced in late summer.

Skunk Currant

Ribes glandulosum; Grossulariaceae Gooseberry Family



General: There are several species of currants in the park. While these species can look similar when not in flower, the scent of the leaves can definitely help to identify which species is which. Leaves of *Ribes glandulosum* smell like skunk.

Growth habit: Shrub.

Habitat: Open, upland forests.

Leaves: Palmately compound and reminiscent of maple leaves. Crushed leaves smell strongly of skunk.

Stems: Low, branching shrub.

Flowers: Drooping clusters of white to pinkish flowers are produced in June. Each flower has five petals, five sepals, and five stamens.

Fruits: Edible, dark red, bristly berries are produced in late summer.

Black Currant

Ribes hudsonianum; Grossulariaceae Gooseberry Family



General: There are several species of currants in the park. While these species can look similar when not in flower, the scent of the leaves can definitely help to identify which species is which. The smell of crushed *Ribes hudsonianum* leaves is reminiscent of cat urine or crushed spruce needles.

Growth habit: Shrub.

Habitat: Common in upland forest.

Leaves: Palmately compound and reminiscent of maple leaves. Crushed leaves smell like cat urine or crushed spruce needles.

Stems: Low, branching shrub.

Flowers: Drooping clusters of whitish flowers are produced in June. Each flower has five petals, five sepals, and five stamens.

Fruits: Edible, but not very tasty, black berries are produced in late summer.

Wild Gooseberry

Ribes oxycanthoides; Grossulariaceae Gooseberry
Family



General: The genus *Ribes* includes both gooseberries and currants. Gooseberry stems are prickly, while the stems of currants are not.

Growth habit: Shrub.

Habitat: Common in upland forests.

Leaves: Palmately compound and reminiscent of maple leaves - scentless.

Stems: Branching shrub, longer stems arching. Prickles at nodes conspicuously larger than at internodes.

Flowers: Small whitish-green flowers. Each flower has five petals, five sepals, and five stamens.

Fruits: Edible, but sour, black berries are produced in late summer. Berries are conspicuous a long time before they are ripe, and appear green and translucent.

Wild Red Currant

Ribes triste; Grossulariaceae Gooseberry Family



General: There are several species of currants in the park. When not in flower, this species resembles Lowbush Cranberry (*Viburnum edule*). However, Wild Red Currant has one leaf per node (alternate phyllotaxy), rather than two (opposite phyllotaxy) as in Lowbush Cranberry. Leaves are scentless.

Growth habit: Shrub.

Habitat: Common in upland forest.

Leaves: Palmately compound and reminiscent of maple leaves. Leaves are scentless.

Stems: Low, sparsely branched shrub.

Flowers: Drooping clusters of brownish flowers are produced before the leaves in late May and early June. Each flower has five petals, five sepals, and five stamens.

Fruits: Edible red berries are produced in late summer.

Beaked Willow

Salix bebbiana; Salicaceae Willow Family



6

General: There are several very similar species of willow within the park. Beaked willow is one of the largest species, and can be identified by its dull green leaves with impressed veins and capsules with longer stalks and tapering tips.

Growth habit: Large shrub or small tree, up to 5m tall.

Habitat: Common in upland forests and occasionally forming thickets in moist areas.

Leaves: Dull green, elliptic, with conspicuous impressed veins.

Stems: Bark reddish, plants shrubs or sparsely branched and tree-like.

Flowers: Separate male and female trees. Flowers have no petals and are produced in dense, drooping clusters in early spring.

Fruits: Female trees produce stalked capsules that open to release many silky-haired seeds in early summer.

Pussy Willow

Salix discolor; Salicaceae Willow Family



General: There are several very similar species of willows within the park. This species produces some of the most beautiful “pussy willows” (clusters of male flowers), in very early spring. Willows often form galls (caused by insect larvae) that are reminiscent of pinecones or leafy little cabbages at the end of some twigs.

Growth habit: Large shrub or small tree, up to 8m tall.

Habitat: Upland forests and moist, open areas.

Leaves: Elliptic with shallow teeth on the margin.

Stems: Bark dark brown. Plants are shrubs or sparsely branched and tree-like.

Flowers: Separate male and female trees. Flowers have no petals and are produced in dense clusters in early spring.

Fruits: Female trees produce capsules that open to release many silky-haired seeds in early summer.

Sandbar Willow

Salix exigua; Salicaceae Willow Family



7

General: There are several very similar species of willows within the park. Sandbar willow forms thickets that spread by underground stems.

Growth habit: Forms dense thickets of sparsely branched stems up to 4m tall.

Habitat: Moist, open areas; often along ditches or near lake shore.

Leaves: Long, linear leaves with sparse teeth on the margin.

Stems: Sparsely branched straight stems; bark is dark brown.

Flowers: Separate male and female trees. Flowers have no petals and are produced in dense clusters in early spring.

Fruits: Female trees produce capsules in early summer.

Meadow Willow

Salix petiolaris; Salicaceae Willow Family



General: There are several very similar species of willow within the park. Meadow willow is the most abundant species, and forms thickets in the sedge meadows near the shore of Big Lake.

Growth habit: Large shrub up to 5m tall.

Habitat: Moist shore of Big Lake.

Leaves: Elliptic, with shallowly toothed margins.

Stems: Numerous basal branches give shrubs a bushy appearance.

Flowers: Separate male and female trees. Flowers have no petals and are produced in dense clusters in early spring.

Fruits: Female trees produce hairy capsules that open to release many silky-haired seeds in early summer.

Canadian Buffalo-berry; Soapberry
Shepherdia canadensis; Elaeagnaceae Russian
Olive Family



General: The small brown scales on the leaves and branches are distinctive. Berries are edible, but contain a compound called saponin that cause them to taste horribly bitter, and also to froth as if they contain soap when agitated. The froth can be mixed with a bit of sugar and makes an interesting treat called “buffalo ice-cream”. Berries also taste better after a frost in autumn, or after cooking with a bit of sugar.

Growth habit: Shrubs 1-3m tall.

Habitat: Open forests of upland habitats, including dry hillsides.

Leaves: Small (<4 cm), ovate, opposite, with smooth margins; brown scales give plants a distinctly mealy appearance.

Stems: Woody with brown scales.

Flowers: Small (<3 cm), yellow, produced very early in spring just as the leaves are expanding. Plants are either male or female.

Fruits: Berries in short-stalked clusters, usually red, but occasionally yellowish; very bitter tasting but edible with cooking and sugar.

Highbush Cranberry
Viburnum opulus; Caprifoliaceae Honeysuckle
Family



8

General: These tall plants are a common shrub in some areas of the fern forest.

Growth habit: Shrub.

Habitat: Most common beneath the canopies of large Balsam Poplars.

Leaves: Two leaves per node, each leaf with three pointed lobes.

Stems: Branching shrub, with pale bark.

Flowers: Flat-topped flower clusters with two types of flowers: larger, sterile flowers occur at the outer edge of the flower cluster and attract pollinators, while fertile flowers that will develop into berries occur in the centre.

Fruits: Red berries are small and edible, but sour and with a large pit. These berries are often gathered by squirrels and hung in the low branches of a conifer to dry during winter.

Forbs

Sweet Flag

Acorus americanus; Acoraceae Sweetflag Family



General: The dense flower cluster (spadix) that appears to grow from the side of plant due to the long leaf-like bract at the base of the spadix (spathe) are distinctive. Plants resemble cattail, but sweetflag leaves are faintly sweet-smelling, have a raised, off-centre midrib, and are grass-green while cattail leaves are uniformly spongy across their width and the green leaves are more pale-bluish in colour.

Growth habit: Perennial aquatic forbs.

Habitat: Common in shallow water of Big Lake and adjacent wetlands.

Leaves: Long (up to 80cm), sweet-smelling, and grass-like with a raised midrib.

Stems: Short and generally hidden in the leaf-bases; thick, aromatic, horizontal stems (rhizomes) grow in soil beneath the water.

Flowers: Tiny greenish-yellow flowers are produced in a dense spike (spadix) held to one side of the stem. The bract at the base of the spadix (spathe) is leaf-like.

Fruits: Dry when mature, with a gelatinous interior.

Marsh Marigold

Caltha palustris; Ranunculaceae Buttercup Family



General: These are one of the more eye-catching species that flowers in early spring. It is worth putting on a pair of boots or getting your feet wet to find them. All parts of the plant are poisonous, and the sap causes dermatitis in some people. The flowers are visited by many species of insects for pollen and nectar.

Growth habit: Herbaceous perennial.

Habitat: Marshy soil in forests and pond margins.

Stems: Plants short, branching near the bottom, 20-60cm tall.

Leaves: Circular to kidney shaped with some wavy teeth on the margin.

Flowers: Bright yellow buttercup-like flowers produced in branching clusters. These plants have no petals. Instead, the yellow “petals” are colourful, petal-like sepals. Plants bloom in late May to early June.

Fruits: Each flower has numerous ovaries that ripen into distinctive dry fruits.

Spotted Water Hemlock

Cicuta maculata; Apiaceae Carrot Family



General: This is one of the most poisonous species in North America. Very small amounts are dangerous - avoid getting the sap on your hands to avoid accidental ingestion. The Carrot Family contains both deadly poisonous and edible species, and these species are similar in appearance. It is seldom worth the risk of harvesting the edible species.

Growth habit: Herbaceous perennial.

Habitat: Widespread in moist, open areas of lakeshore.

Stems: Hollow, with sheathing leaf bases; 60 – 150 cm tall.

Leaves: Pinnately divided into three-parted sections.

Flowers: Tiny white flowers in flat-topped flower clusters (compound umbel).

Fruits: Dry, two-parted fruits (schizocarps).

Canada Thistle

Cirsium arvense; Asteraceae Aster Family



General: This plant is designated a noxious weed under the Alberta Weed Act. It is introduced from Europe, and has become a prickly part of the flora in upland habitats. Plants spread aggressively through sprouting rootstock. Like so many other prickly or stinging plants, the leaves are very nutritious (although you have to run plants through a blender to deal with the prickles).

Growth habit: Weedy herbaceous perennial.

Habitat: Widespread in open, upland habitats.

Stems: Plants sparsely branching, 30 – 100 cm tall.

Leaves: Lance-shaped with a wavy, twisted margin armed with numerous prickles.

Flowers: Each flower-like head contains numerous tiny purple flowers (occasionally white). Plants are either male or female.

Fruits: Small dry fruits with a plume of bristles for wind dispersal, similar to dandelions.

Spotted Coral-Root

Corallorhiza maculata; Orchidaceae
Orchid Family



General: This small orchid is distinctive, producing no green leaves and small spotted flowers. Underground stems are root-like, unusually branched, and resemble coral in appearance.

Growth habit: Herbaceous perennial.

Habitat: Forests and trail edges.

Stems: Unbranched above; 20 – 50 cm tall.

Leaves: Without chlorophyll and reduced to scales at the base of flowering stems.

Flowers: Flowers whitish with purplish spots and produced in a long narrow cluster at stem tips. Each flower has three narrow petals and three sepals. One of which is modified into a lip, and one sepal is broadly oval.

Fruits: Dry capsule that splits open when ripe to release numerous, dust-like seeds.

Hemp Nettle

Galeopsis tetrahit; Lamiaceae Mint Family



General: The common weedy annual resembles mint, but is scentless. It is introduced from Europe. Yellow Hemp Nettle (*Galeopsis speciosa*) also occurs in the park.

Growth habit: Weedy herbaceous annual.

Habitat: Widespread in disturbed, moist areas.

Stems: Square in cross section, branching at the base and covered with short, stiff hairs. 30 – 80 cm tall.

Leaves: Lance-shaped with a wavy toothed margin, and impressed veins.

Flowers: Pale purple flowers with petals fused to form a two-lipped tube; produced in dense terminal clusters. Sepals are fused and tipped with a stiff bristle.

Fruits: Small hard fruits, generally in groups of four.

Spurred Gentian

Halenia deflexa; Gentianaceae Gentian Family



General: This plant is distinctive within the park, but is also easily overlooked due to its small size.

Growth habit: Herbaceous annual or biennial.

Habitat: Moist forests and trail edges.

Stems: Branching at the nodes, 10 – 50 cm tall.

Leaves: Oval in shape with smooth edges, without stalks, two per node.

Flowers: Pale purple flowers produced in clusters near leaf bases at top of plant. Petals fused into a four-lobed tube, and spurred at the base.

Fruits: Dry capsule that splits open when ripe.

Cow Parsnip

Heracleum lanatum; Apiaceae Carrot Family



General: This species is occasionally mistaken for Giant Hogweed (*Heracleum mantegazzianum*), a noxious weed that occurs in British Columbia. Cow Parsnip is edible, but resembles the poisonous species Water Hemlock. Sap from the leaves can make skin vulnerable to sun damage.

Growth habit: Herbaceous perennial.

Habitat: Widespread in moist clearings and forest margins.

Stems: Hollow, with sheathing leaf bases; 60 – 150 cm tall.

Leaves: Pinnately divided into sections; margins coarsely toothed.

Flowers: Tiny white flowers in flat-topped flower clusters (compound umbels).

Fruits: Dry, two-parted fruits (schizocarps).

Touch-me-not

Impatiens capensis; Balsaminaceae Touch-me-not Family



3



General: There are two common species of *Impatiens* that are indistinguishable without flowers. When in flower, both species grow together and can be distinguished based on flower shape: *I. capensis* has a short spur that curls abruptly to almost touch the underside of the flower, while flowers of *I. noli-tangere* are more slender and taper gradually to the spur.

Growth habit: Herbaceous annual.

Habitat: Marshy soil in forests and pond margins.

Stems: Juicy stems, branching near the bottom. 30 – 60 cm tall.

Leaves: Oval shaped with blunt wavy teeth on the margin.

Flowers: Bright yellow petals are fused into a tube and bend back to form a narrowly tapering spur. Plants bloom in late June through to the end of August.

Fruits: Fleshy capsules. Try lightly squeezing ripe capsules to see how seeds are dispersed.

Touch-me-not

Impatiens noli-tangere; Balsaminaceae Touch-me-not Family



General: The name “touch-me-not” refers to the ripe fruits. If gently squeezed, segments of the fruit curl back abruptly to disperse the seeds. This mechanism of seed dispersal is harmless, but can be startling for the observer!

Growth habit: Herbaceous annual.

Habitat: Marshy soil in forests and pond margins.

Stems: Juicy stems, branching near the bottom; 30 – 60 cm tall.

Leaves: Oval shaped with blunt wavy teeth on the margin.

Flowers: Bright yellow petals with brownish-purple spots are fused into a tube and bend back to form a narrowly tapering spur. Plants bloom in late June through to the end of August.

Fruits: Fleshy capsules. Try lightly squeezing ripe capsules to see how seeds are dispersed.

Common Duckweed

Lemna minor; Lemnaceae Duckweed Family



5



General: This is the smallest species of flowering plant found in the park. Individual plants are 2-5mm long, are not differentiated into stems and leaves, and have a single root. Colonies form thick green mats on the surface of Big Lake and are used as food by waterfowl.

Growth habit: Herbaceous perennial.

Habitat: Floating on the surface of Big Lake and adjacent wetlands.

Stems: None.

Leaves: The green, floating body of the plant is called a thallus because it is neither stem, nor leaf, even though it looks leaf-like.

Flowers: Tiny, petal-less flowers are seldom observed.

Fruits: Plants reproduce vegetatively by budding; the small fruits are seldom produced or observed.

Tufted Loosestrife

Lysimachia thrysifolia; Primulaceae Primrose
Family



General: While Tufted Loosestrife is native to this area, Purple Loosestrife (*Lythrum salicaria*) is a prohibited noxious weed. If the invasive species gets a foothold in the park, it would exclude native vegetation and would be difficult to eradicate.

Growth habit: Herbaceous perennial.

Habitat: Moist open areas of lake shore.

Stems: Sparsely branched, hairy; 20-60cm tall.

Leaves: Lance-shaped, two per node.

Flowers: Dense clusters of small yellow flowers are produced in leaf axils.

Fruits: Small dry capsules.

Common Mint

Mentha arvensis; Lamiaceae Mint Family



General: Resembles spearmint.

Growth habit: Herbaceous perennial.

Habitat: Widespread in disturbed, moist areas.

Stems: Square in cross section, erect and sparsely branched. 30-80cm tall.

Leaves: Lance-shaped with a wavy toothed margin; conspicuously mint scented when crushed.

Flowers: Pale purple flowers with four petals and four sepals produced in dense clusters in the axils of leaves.

Fruits: Small hard nutlets, generally in groups of four.

Tall Lungwort

Mertensia paniculata; Boraginaceae Borage Family



General: Common plants that are easy to overlook, except when in flower. The blue flowers are a favorite with bees.

Growth habit: Herbaceous perennial.

Habitat: Widespread in the shade of forest canopies.

Stems: Arching and hairy, up to 50cm tall.

Leaves: Short-hairy, broadly lance-shaped, and tapering to a pointed tip.

Flowers: Purple bluebell-like flowers with five fused petals; produced in loose panicles in June.

Fruits: Small hard fruits, generally in groups of four.

Bishop's Cap

Mitella nuda; Saxifragaceae Saxifrage Family



General: Small plants with intriguing flowers worth a closer look.

Growth habit: Herbaceous perennial.

Habitat: Widespread in forested areas.

Stems: Very short internodes; plants forming basal rosettes, <10 cm tall.

Leaves: Round with a wavy toothed margin, heart-shaped base, sparsely hairy.

Flowers: Small flowers with five yellowish green petals; each petal is divided into linear segments.

Fruits: Dry capsules containing shiny black seeds.

Indian Pipe

Monotropa uniflora; Monotropaceae



General: While easy to overlook because of their small size (<20cm tall), these unusual plants won't be confused with any other plant in the park. Plants are white, rather than green (they lack chlorophyll), and obtain energy from decaying material and a close relationship with soil fungi, rather than sunlight. Fruit capsules from the previous year are reasonably conspicuous when plants are not flowering.

Growth habit: Perennial forbs.

Leaves: Reduced to scales; white in colour.

Habitat: Shaded areas of upland deciduous forests.

Stems: Clustered and branched; white in colour.

Flowers: Single at the tips of unbranched stems; white and appearing waxy, with five petals. Immature flowers are nodding.

Fruits: Persistent capsules containing tiny, numerous seeds.

Ledingham's Physostegia

Physostegia ledinghamii; Lamiaceae Mint Family



General: This species has showy flowers, but is easily overlooked in the thick undergrowth of the lakeshore where it is most often found.

Growth habit: Herbaceous perennial.

Habitat: Lakeshore and willow thickets.

Stems: Square in cross section, erect and sparsely branched. 30 – 80 cm tall.

Leaves: Lance-shaped with a wavy toothed margin; two per node.

Flowers: Pinkish purple flowers with four petals and four sepals produced in dense, terminal clusters July through August.

Fruits: Small hard nutlets, generally in groups of four.

Northern Green Orchid

Platanthera aquilonis; Orchidaceae



General: Orchids are fascinating even when they are small, with tiny green flowers. This is one of two species of orchid found in the park. The other is *Corallorhiza maculata*. Several species of *Platanthera* growing in Alberta can be distinguished by the shape of the lip.

Growth habit: Herbaceous perennial.

Habitat: Wet meadows, moist forest, and trail edges.

Stems: Unbranched, 10 – 70 cm tall.

Leaves: Broad, linear leaves with smooth edges, without stalks, one per node.

Flowers: Pale green flowers produced in a spike-like cluster at stem tips. Each flower has three narrow petals and three sepals, of which one petal is modified into a lip, and one sepal is broadly oval.

Fruits: Dry capsule that splits open when ripe to release numerous, dust-like seeds.

Water Smartweed

Polygonum coccineum; Polygonaceae Knotweed
Family



General: Plants are amphibious. Plants that grow on land look distinctly different from plants that grow in water.

Growth habit: Herbaceous perennial.

Habitat: Shallow water of Big Lake and adjacent wetlands.

Stems: Aquatic form has stems that grow horizontally just beneath the water surface; emergent forms have erect stems up to 30 cm tall.

Leaves: The aquatic form has leaves that float on the water surface or emerge slightly above, and resemble leaves of broad-leaved *Potamogeton* species; emergent forms have lance-shaped leaves. Both types have a leafy collar, or ocrea, at the nodes.

Flowers: Pink flowers with four petals and four sepals are produced in dense clusters at stem tips from June-August.

Fruits: Small, inflated fruits (urticles) release black, shiny seeds.

Sago Pondweed

Potamogeton pectinatus; Potamogetonaceae

Pondweed Family



General: These plants often grow together with Slender Pondweed to form impressive stands in the water of Big Lake. By late summer, these stands are so thick that they can be difficult to paddle a canoe through. They are excellent habitat for aquatic invertebrates.

Growth habit: Submerged, aquatic perennial.

Habitat: Abundant in water of Big Lake.

Stems: Narrow, flimsy stems grow from the lake-bottom to the water surface.

Leaves: Alternate, narrow (< 4mm wide), with a sheathing base and a long, tapering tip.

Flowers: Petal-less, small greenish flowers are produced in whorls at the water surface in July-August.

Fruits: Flowers mature into single seeded fruits at the water surface.

Slender Pondweed

Potamogeton pusillus; Potamogetonaceae

Pondweed Family



General: This plant often grows with, and is similar in appearance to Sago Pondweed. The leaves of Slender Pondweed are broader, and taper abruptly to the pointed leaf tip.

Growth habit: Submerged, aquatic perennial.

Habitat: Abundant in water of Big Lake.

Stems: Narrow, flimsy stems grow from the lake-bottom to the water surface.

Leaves: Alternate, narrow (< 4mm wide), with a sheathing base.

Flowers: Petal-less, small greenish flowers are produced in whorls at the water surface in July-August.

Fruits: Flowers mature into single seeded fruits at the water surface.

Richardson's Pondweed

Potamogeton richardsonii; Potamogetonaceae
Pondweed Family



General: This pondweed has much broader leaves than Sago or Slender Pondweed.

Growth habit: Submerged, aquatic perennial.

Habitat: Deep water of Big Lake.

Stems: Narrow, flimsy stems grow from the lake-bottom to the water surface.

Leaves: Alternate, up to 1.5 cm wide, with a clasping base.

Flowers: Petal-less, small greenish flowers are produced in whorls at the water surface in July-August.

Fruits: Flowers mature into single seeded fruits at the water surface.

Common Pink Wintergreen

Pyrola asarifolia; Pyrolaceae Wintergreen Family



General: Small plants with shiny leaves that stay green even beneath the snow.

Growth habit: Herbaceous perennial.

Habitat: Widespread in the shade of forest canopies.

Stems: Plants form basal rosettes and appear stem-less. Flowering stalks to 20 cm tall.

Leaves: Evergreen and shiny; elliptic in shape with a heart-shaped base and a shallow, wavy-toothed margin.

Flowers: Pale pink flowers with five petals, five sepals, and a conspicuous style that curves upward; produced in showy racemes in June.

Fruits: Dry fruits that split from the base upward to release seeds.

Water Parsnip

Sium suave; Apiaceae Carrot Family



General: The leaves and stems of this species were once harvested for food. However, this species is similar in appearance to and often grows with the poisonous species, Spotted Water Hemlock. Plants are most easily distinguished by the once divided leaves of Water Parsnip, and twice divided leaves in Spotted Water Hemlock. . It is not worth the risk of harvesting the edible species.

Growth habit: Herbaceous perennial.

Habitat: Widespread in moist, open areas of lakeshore.

Stems: Hollow, with sheathing leaf bases; 60 – 150 cm tall.

Leaves: Pinnately divided into linear sections; margins coarsely toothed.

Flowers: Tiny white flowers in flat-topped flower clusters (compound umbels).

Fruits: Dry, two-parted fruits (schizocarps).

Common Cattail

Typha latifolia; Typhaceae



General: The dense flower spike, produced at the tip of sturdy flower stalks, are distinctive. When not in flower, plants superficially resemble Sweetflag. These two plants are often found growing together.

Growth habit: Perennial aquatic forbs with long, grass-like leaves.

Habitat: Grows in shallow water of Big Lake and adjacent wetlands.

Leaves: Long and narrow; spongy and grass-like.

Stems: Short and generally hidden in the sheathing leaf-bases; horizontal stems (rhizomes) modified for starch storage grow in soil beneath the water.

Flowers: Tiny, petal-less, and produced in conspicuous, dense spikes at the tips of sturdy flower stalks. Male flowers are produced at the tip, while female and sterile flowers are produced below.

Fruits: Individual fruits tiny with numerous hairs; en mass forming fluffy clumps.

Stinging Nettle

Urtica dioica; Urticaceae Nettle Family



General: This herb is easily overlooked until you brush up against it! The young plants are very nutritious (for deer and people), and the plant discourages foraging by protecting itself with hairs filled with formic acid. The plant superficially resembles members of the mint family. The stinging hairs are best avoided, so it is worth learning to recognize the plant without touching it.

Growth habit: Herbaceous perennial.

Habitat: Common in moist forests and along trail edges.

Leaves: Dark green, with conspicuous veins and stinging hairs; ovate with a heart-shaped base, margins sharply toothed.

Stems: Covered with stinging hairs. Main stem generally unbranched, square in cross section, and up to 2m tall.

Flowers: Tiny green flowers in clusters in axils of leaves; no petals, four sepals.

Fruits: Small dry fruits.

Common Bladderwort

Utricularia vulgaris; Lentibulariaceae



General: The finely dissected leaves bearing small bladders and snapdragon-like, tubular yellow flowers are distinctive. Plant is carnivorous. Bladders have trigger hairs that cause a rapid intake of water through a small opening, effectively trapping small, swimming invertebrates that come too close.

Growth habit: Perennial aquatic forbs floating just beneath the surface of shallow water.

Habitat: Shallow water of Big Lake and adjacent wetlands. Common in ditches.

Leaves: Finely divided into narrow segments and bearing numerous bladders (3-5mm long).

Stems: Floating stems form loose mats near the water surface.

Flowers: Yellow snapdragon-like flowers are produced in loose clusters; flowering stems rise well above the water surface.

Fruits: Produced on flowering stalks that bend down beneath the water; but seldom produce viable seeds.

Early Blue Violet

Viola adunca; **Violaceae**; **Violet Family**



General: Small herbaceous plants with showy violet flowers.

Growth habit: Herbaceous perennial.

Habitat: Moist forests and trail edges.

Stems: Thin and branching at the nodes, up to 10 cm tall.

Leaves: Oval in shape with smooth edges and a heart-shaped base; stalked, one per node.

Flowers: Pale purple pansy-like flowers with five petals, the lowest bearded and spurred at the base. Blooms May - June.

Fruits: Dry capsule that splits open when ripe.

Canada Violet

Viola canadensis; Violaceae; Violet Family



General: Small herbaceous plants with white flowers.

Growth habit: Herbaceous perennial.

Habitat: Moist forests and trail edges.

Stems: Thin and branching at the nodes, 30 cm tall.

Leaves: Oval in shape with a pointed tip and heart-shaped base; long-stalked, one per node.

Flowers: Pale purple pansy-like flowers with five petals, the lowest bearded and spurred at the base. Blooms May - June.

Fruits: Dry capsule that splits open when ripe.

Ferns

Ostrich Fern

Matteuccia struthiopteris; Polypodiaceae Fern Family



General: Ostrich Ferns are similar in appearance to Shield Fern (*Dryopteris carthusiana*). Vegetative fronds of Ostrich Fern taper at both ends (diamond-shaped) and spores are produced on specialized leaves called sporophylls, whereas in Shield Fern, fronds taper only at the tip and have a broad base (triangle-shaped) and do not have specialized spore-producing leaves.

Growth habit: Fern with whorled leaves from a short, thick stem that is hidden in the leaf bases.

Habitat: Moist forests.

Stems: Very short, usually unbranched main stem with underground stolons.

Leaves: Produces two types of leaves: sterile leaves are whorled, have short stalks, and twice-divided blades; fertile ones are rigid, shorter (20 – 60 cm), held vertically, and numerous spores give blades a brownish colour. Young leaves are curled in bud and are called croziers.

Flowers: None.

Fruits: Spores produced in fertile fronds called sporophylls.

Narrow Spinulose Shield Fern

Dryopteris carthusiana; Polypodiaceae Fern
Family



General: This fern is similar in appearance and often grows with Ostrich Fern (*Matteuccia struthiopteris*, pg 62).

Growth habit: Fern with whorled leaves from a short, thick stem that is hidden in the leaf bases.

Habitat: Moist forests.

Stems: Very short, usually unbranched main stem.

Leaves: Long leaves are up to 1m long and once or twice divided into sections. The base is broad, such that the outline of the frond is largely triangular. Young leaves are curled in bud and are called croziers.

Flowers: Does not produce flowers. Spores are produced in clusters called sori on the underside of leaves (see picture above).

Fruits: Does not produce fruits or seeds. Sori are light brown at maturity

Sedges

River Bulrush

Bolboschoenus fluviatilis; Cyperaceae Sedge
Family



General: This distinctive sedge grows in large patches in the shallow water of Big Lake and is uncommon outside of the park. Plants are most easily observed by boat.

Growth habit: Perennial aquatic forbs with grass-like leaves.

Habitat: Shallow water of Big Lake.

Leaves: Long and narrow; grass-like.

Stems: Unbranched and triangular in cross-section; horizontal stems (rhizomes) have swollen nodes and grow in soil beneath the water.

Flowers: Tiny, petal-less, and produced in spikelets at the tips of flower stalks.

Fruits: Small hard fruits (achenes) are produced in late summer.

Slough Sedge

Carex aquatilis; Cyperaceae Sedge Family



4



General: There are three abundant and very similar looking sedges on the shore and shallow waters of Big Lake: Bottle Sedge, Water Sedge, and Slough Sedge. Water sedge is the second most common of these species and can be distinguished by the bluish-green in colour of the leaves and female flower spikes that have scales with a dark margin.

Growth habit: Perennial aquatic forbs with grass-like leaves, up to 80 cm tall.

Habitat: Grows on the shores and shallow water of Big Lake and adjacent wetlands.

Leaves: Long and narrow; feel rough to touch, and are bluish-green in colour.

Stems: Short and generally hidden in the sheathing leaf-bases; horizontal stems (rhizomes) grow in soil beneath the water.

Flowers: Tiny, petal-less, and produced in spikes at the tips of flower stalks. Male flowers are produced in spikes at the tip of the flower stalk, while female flowers are produced in the lower spikes. June through to early July.

Fruits: Small hard fruits (achenes) are produced in late summer.

Wheat Sedge

Carex atherodes; Cyperaceae Sedge Family



General: Of the sedges in the Park, Slough Sedge is the most abundant. The sheathing leaf bases of this species are often hairy. Flower spikes are similar to Bottle Sedge.

Growth habit: Perennial aquatic forbs with grass-like leaves.

Habitat: Grows on the shores and shallow water of Big Lake and adjacent wetlands.

Leaves: Long and narrow, with hairy, sheathing leaf bases. Blades feel rough to touch and can generate small cuts through skin if handled with force.

Stems: Short and generally hidden in the sheathing leaf-bases; horizontal stems (rhizomes) grow in soil beneath the water.

Flowers: Tiny, petal-less, and produced in spikes at the tips of flower stalks. Male flowers are produced in spikes at the tip of the flower stalk, while female flowers are produced in the lower spikes.

Fruits: Small hard fruits (achenes) are produced in late summer.

Hardstem Bulrush

Schoenoplectus acutus; Cyperaceae Sedge Family



9

General: It forms conspicuous dark strips of vegetation along the shore and island-like stands in deeper water of Big Lake, providing an important habitat for nesting waterfowl. The young sprouts and shoots can be eaten raw and the rhizomes and unripe flower heads can be boiled as vegetables. Dyed and woven, it is used to make baskets, bowls, mats, hats, and other items by Native American groups

Growth habit: Perennial aquatic forbs with stiff, dark green stems that are round in cross-section.

Habitat: Shallow water of Big Lake and adjacent wetlands.

Leaves: Stems appear leaf-like; true leaves are much reduced in size and are seldom observed.

Stems: Thick and spongy; round in cross section. Horizontal stems (rhizomes) grow in soil beneath the water.

Flowers: Tiny, petal-less, and produced in small, dense clusters (spikelets) at the tips of flower stalks.

Fruits: Small hard fruits (achenes) are produced in late summer.

Grasses

Blue Joint

Calamogrostis canadensis; Poaceae Grass Family



General: This is a common grass.

Growth habit: Perennial with long, grass-like leaves.

Habitat: Open forests and upland clearings.

Leaves: Long and narrow, with sheathing bases. Leaf blades of many grasses have membranous extensions, the ligule, where the blade joins the stem. In this species, the ligule is long, up to 6 mm long.

Stems: Up to 100 cm tall, round, and hollow with swollen nodes.

Flowers: Tiny, petal-less, and produced in dense panicles at the tips of stems in July and early August. Short, white hairs can be observed in open flowers.

Fruits: Small, dry fruits (caryopsis) are produced in late summer.

Slough Grass

Beckmannia syzigachne; Poaceae Grass Family



General: This distinctive looking grass grows in shallow water. Unlike many common grasses in the park, this species does not form an extensive network of underground stems.

Growth habit: Annual to short-lived perennial with long, grass-like leaves. Forms loose clumps.

Habitat: Grows in shallow water at the margin of ponds and ditches.

Leaves: Long and narrow, with sheathing bases.

Stems: Up to 100 cm tall, round, and hollow with swollen nodes.

Flowers: Tiny, petal-less, and produced in dense panicles at the tips stems in July and early August.

Fruits: Small, dry fruits (caryopsis) are produced in late summer.

Quack Grass

Elymus repens; Poaceae Grass Family



General: This grass is widespread throughout open areas of the park. Like many other forage grasses, this species was introduced as a food for grazing livestock.

Growth habit: Perennial forbs with long, grass-like leaves and tall stems.

Habitat: Grows in almost any open area. Spreads rapidly by underground rhizomes.

Leaves: Long and narrow, with sheathing bases and two very small, finger-like projections called auricles where the leaf blade is attached to the stem.

Stems: Up to 80 cm tall, round, and hollow with swollen nodes; horizontal stems (rhizomes) grow beneath the soil.

Flowers: Tiny, petal-less, and produced in spikes at the tips stems in July.

Fruits: Small, dry fruits (caryopsis) are produced in late summer.

Smooth Brome

Bromus inermis; Poaceae Grass Family



General: This abundant grass forms dense stands in open areas, including roadsides. It is one of several introduced forage species, and often grows intermixed with Quack Grass (*Elymus repens*).

Growth habit: Perennial forbs with long, grass-like leaves and tall stems.

Habitat: Open, upland areas including clearings and roadsides.

Leaves: Long and narrow, with sheathing bases. Leaf blades have a subtle “W” shaped imprint.

Stems: Tall (up to 1 m), round, and hollow with swollen nodes; horizontal stems (rhizomes) grow beneath the soil.

Flowers: Tiny, petal-less, and produced in spikes at the tips stems in July.

Fruits: Small, dry fruits (caryopsis) are produced in late summer.

Reed Canary Grass

Phalaris arundinacea; Poaceae



General: This tall, abundant grass forms dense stands along the shore of Big Lake, and often grows intermixed with Quack Grass. The base of leaves (collar) is yellowish.

Growth habit: Perennial forbs with long, grass-like leaves and tall stems.

Habitat: Grows on the shores of Big Lake and adjacent wetlands.

Leaves: Long and narrow, with sheathing bases and a yellow collar.

Stems: Tall (up to 1.5m), round, and hollow with swollen nodes; horizontal stems (rhizomes) grow beneath the soil.

Flowers: Tiny, petal-less, and produced in spikes at the tips stems in July.

Fruits: Small, dry fruits (caryopsis) are produced in late summer.

Lichens

Pin Cushion Sunburst Lichen
Xanthoria polycarpa; Teloschistaceae



General: Lichens are composed of algae and fungi growing together in a symbiotic union. They are not vascular plants. This lichen forms conspicuous orange colonies often growing on the sides of Trembling Aspen and Balsam Poplar

Growth habit: Perennial, slow-growing circular colonies.

Habitat: Grows on the bark of deciduous trees.

Leaves: The thallus is flattened and leaf-like, but is not a true leaf.

Stems: None

Flowers: None. Instead of flowers, this lichen produces cup-shaped structures called apothecia, that release numerous spores.

Fruits: None

Hammered Shield Lichen

Parmelia sulcata; Parmeliaceae



General: Lichens are composed of algae and fungi growing together in a symbiotic union. They are not vascular plants. This lichen often grows with *Xanthoria polycarpa* on the bark of deciduous trees. The texture of the pale grey surface of the thallus looks like it has been pounded out flat, like thin metal beaten with a mallet.

Growth habit: Perennial, slow-growing circular colonies.

Habitat: Grows on the bark and branches of deciduous trees.

Leaves: The thallus is flattened and leaf-like, but is not a true leaf.

Stems: None

Flowers: None. Instead of flowers, this lichen produces cup-shaped structures called apothecia, that release numerous spores.

Fruits: None.

Mosses

Stocking Moss

Pylaisiella polyantha; Hypnaceae



General: Mosses are not vascular plants. This moss grows at the base of deciduous trees, forming “stockings” on Trembling Aspen and Balsam Poplar trunks. Growth is limited by moisture availability, and the most luxurious growth is often on the north side of trees where there is less sun exposure.

Growth habit: Compact, branching moss with tips of stems upturned.

Habitat: Grows on most deciduous trees.

Leaves: Very small, unlobed leaves are held close to the stems.

Stems: Branching, with upturned tips.

Flowers: None. Mosses have an interesting life cycle. One stage, the sporophyte, produces conspicuous capsules that release spores.

Fruits: None.

Big Redstem

Pleurozium schreberi; Entodontaceae



General: This moss grows at the base of deciduous trees, forming “stockings” on Trembling Aspen and Balsam Poplar trunks. Growth is limited by moisture availability, and the most luxuriant growth is often on the north side of trees where there is less sun exposure.

Growth habit: Compact, branching moss with tips of stems upturned.

Habitat: Grows on most deciduous trees.

Leaves: Very small, unlobed leaves are held close to the stems.

Stems: Branching, with upturned tips.

Flowers: None. Capsules are occasionally produced.

Fruits: None.

Lung Liverwort

Marchantia polymorpha; Marchantiaceae Family



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General: This unusual plant is affiliated with mosses, but has enough differences to belong to a separate group: the liverworts. Plants in this group tend to be flattened, and can be either leafy or ribbon-like.

Growth habit: Single plants are ribbon-like; colonies form mats.

Habitat: Moist soil, often in disturbed areas and along trails.

Leaves: Flattened leaf-like thallus, up to 1 cm wide, and regularly branching into two equal branches.

Stems: None.

Flowers: None. Produces separate male and female structures that resemble small umbrellas. Small cup-like structures contain small green bits of tissue, called gemmae, that can regenerate into new plants.

Fruits: None.

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