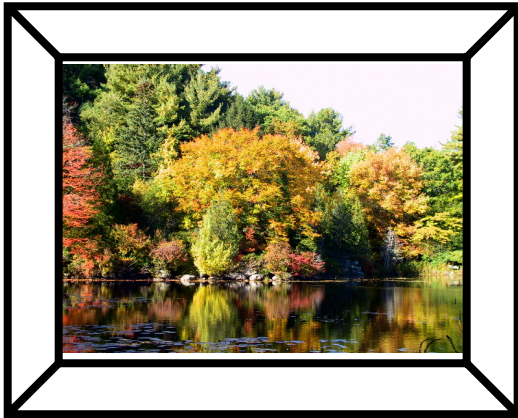


Ipswich River Wildlife Sanctuary

Self Guided Discovery Walk



12 Non-native Trees
along the Rockery Loop



Rockery Loop Trail



Waterfowl Trail

Grotto Area

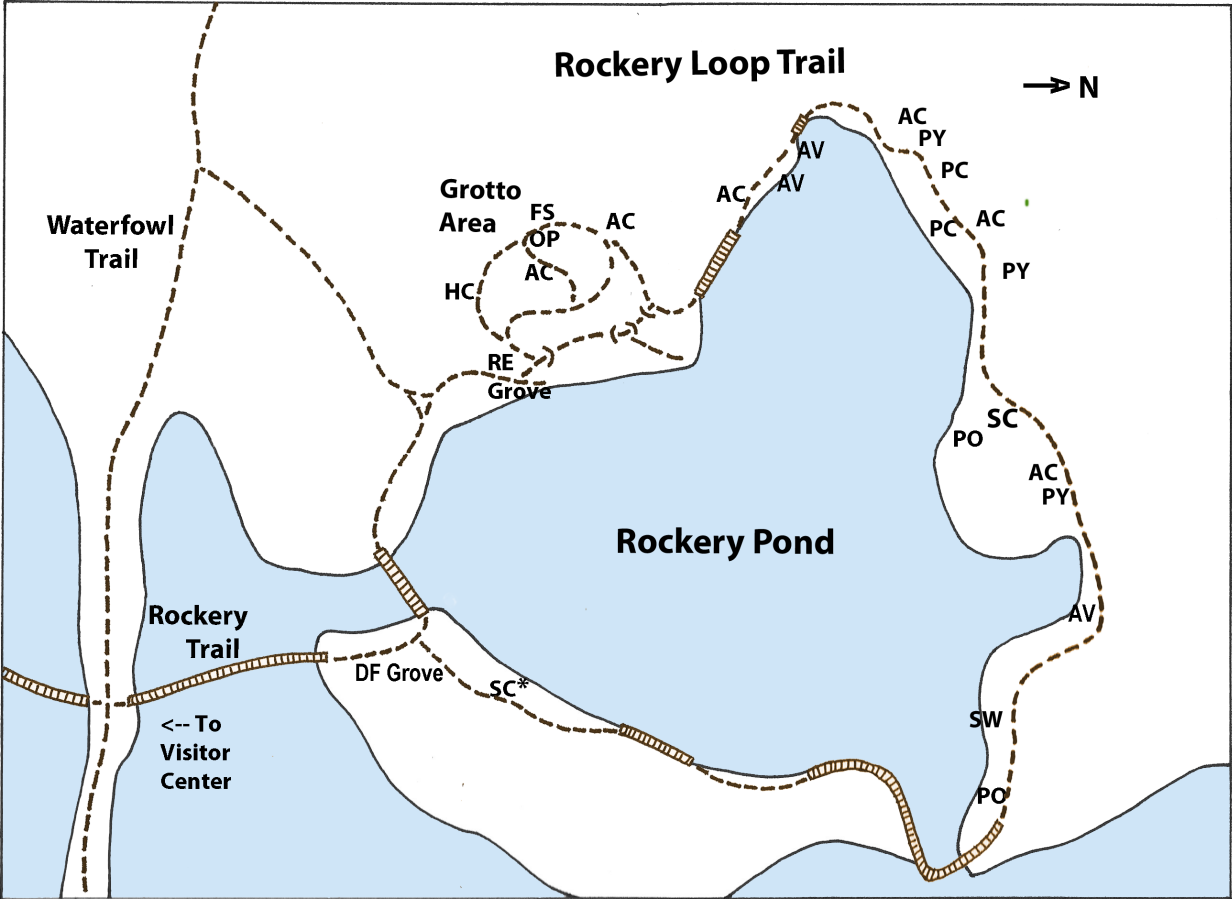
RE Grove

Rockery Pond

Rockery Trail

DF Grove

<-- To Visitor Center



Introduction

This set of Discovery Cards provides a guide to twelve notable non-native trees, which were introduced to the Rockery Loop over a century ago for a private arboretum (see **Rockery History**, back side of this card). A separate set of Discovery Cards covers ten indigenous trees. **Both sets of cards focus on trees, and exclude prominent shrubs** such as Rhododendron, Azalea, Mountain Laurel and Drooping Leucothoe (Fetterbush). Specifically, the present set of cards covers the following species:

	<u>Map Code</u>
1. Amur Cork	AC
2. Arbor Vitae	AV
3. Douglas-Fir	DF
4. Fragrant Snowbell	FS
5. Horsechestnut	HC
6. Oriental Photinia	OP
7. Pacific Yew	PY
8. Pecan	PC
9. Pin Oak	PO
10. Redvein Enkianthus	RE
11. Sawara False Cypress	SC (subsp. <i>squarrosa</i>)
Sawara False Cypress	SC* (subsp. <i>pisifera</i>)
12. Sourwood	SW

Use the Map Codes above to find tree locations on the trail map.

Rockery History

The Rockery was created by Thomas Emerson Proctor (1873-1949), who acquired a large estate in Topsfield and adjoining towns starting in the late 1890s. His properties included the land now comprising the Ipswich River Wildlife Sanctuary. As an avid and wealthy horticulturalist, Proctor collaborated with experts from Harvard University and the Arnold Arboretum to establish a private arboretum, including the special feature known as the Rockery. The arboretum housed exotic trees and shrubs from around the world. The Rockery grotto was constructed by a team of Italian immigrants over nine years beginning in 1902, under the guidance of a renowned landscape architect from Japan. The project required hauling massive boulders from Byfield and Rowley by horse and wagon. The heavy lifting and the placement of boulders was done with simple block-and-tackle technology, ramps, and sturdy scaffolding. During his life, Proctor opened the Rockery and his manicured gardens to visitors on weekends. Flowers from the estate were often featured at the annual flower show of the Boston Horticultural Society.

After Proctor's death in 1949, Mass Audubon acquired the Sanctuary property in 1951. Today, the Rockery is a place of placid beauty. We invite you to enjoy and respect this wonderful feature of the Sanctuary, and help in preserving it for others to enjoy for many years to come.

Source: This note draws on James MacDougall, *Guide to the Trees and Shrubs of the Rockery*, IRWS and Massachusetts Audubon, no date (early 1980s); and Mark Lapin, "Brief History of the Ipswich River Wildlife Sanctuary," *Historical Collections of the Topsfield Historical Society*, XXXIV, 2009.

Amur Cork (*Phellodendron amurense*)

In the Citrus Family (Rutaceae)

Leaves: Compound leaves, with 5 to 11 yellow-green or green leaflets.

Flower: Separate male and female trees; small yellow-green flowers hang in clusters (panicles) 2-3" long.

Fruit: Female flowers bear clusters of small (1/2"), blue-black, berry-like fruits (drupes).

Bark: Thick, grey to grey-brown, heavily ridged in irregular patterns, corky to the touch.



Tree Lore – The Amur Cork is a native of Manchuria, named for the Amur River, which forms the boundary between remote parts of China and Siberia. Although the tree has distinctly corky bark, it is entirely unrelated to the European cork tree used in bottling wine. (That one is actually a type of oak, *Quercus suber*.) The Amur Cork is instead closely related to our citrus trees. An extract from the bark has been widely used in China as an herbal medicine for a variety of illnesses. It also has insecticide properties from a chemical similar to that found in pyrethrum. The tree has invaded locations throughout the northeast and is now classified as a noxious weed; see: <https://www.nps.gov/plants/alien/fact/pham1.htm>.

Amur Cork



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Arbor Vitae (*Thuja occidentalis*)

Also called Northern White Cedar, Tree of Life

In the Cypress Family (Cupressaceae)



Leaves: Evergreen, tiny scale-like leaves arrayed in flattened rows along twigs

Flower: Non-flowering plant. Tiny yellowish male cones produce wind-blown pollen to fertilize female seed cones.

Fruit: Small, upright, woody seed cones (1/2"), initially green-yellow, turning red-brown and roughly bell-shaped, persisting on twigs.

Bark: Mature bark gray, with thin flaky vertical strips over reddish-brown younger bark.

Tree Lore – This tree is native to northern New England and Canada, but its range did not reach this part of Massachusetts. The name, which means Tree of Life, comes from the story that Jacques Cartier, who explored the Canadian coast in the 1530s and 1540s, learned from Native Americans to prevent scurvy using tea made from the bark. For this reason, the Arbor Vitae was the first tree imported to Europe (via Paris) from North America. Thin slabs of wood from the Northern White Cedar were used by Native Americans in making canoe frames. The durable wood is now a popular source of shingles and fences.

Arbor Vitae



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Douglas-fir (*Pseudotsuga menziesii*)

Also called Douglas Fir, Oregon Pine

In the Pine Family (Pinaceae)

- Leaves:** Soft, fir-like green needles, 1" long, spiralled along clusters of slender twigs.
- Flower:** Non-flowering tree; male cones reddish-yellow, about 1" long, at the tips of branches.
- Fruit:** Female cones grow to 3-4" long; brown, with ribbony seed bracts protruding, giving a somewhat shaggy appearance.
- Bark:** Brown bark with vertical ridges, becoming deeply furrowed in mature trees.



Tree Lore – Several large Douglas-firs (and a few dead specimens) grace the beginning of the Rockery loop, bearing foliage well above eye level. This is the dominant tree in the Pacific northwest, where it can exceed 200' in height and 6' in diameter. It is also the state tree of Oregon. The Douglas-fir is vitally important for logging in that region, as the highest-yielding timber tree in North America (especially after the old-growth Eastern White Pine got logged out). The hyphenated name reflects the fact that this is not truly a fir tree. One big difference is that a true fir has upright cones, whereas the Douglas-fir has hanging cones.

Douglas-fir



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Fragrant Snowbell (*Styrax obassia*)

In the Snowbell family (Styracaceae)

- Leaves:** Alternate simple leaves; very large (up to 8"), broadly oval to almost round, fuzzy, serrated.
- Flower:** Clusters of fragrant, cream-colored bell-shaped flowers with yellow centers, on gracefully drooping stalks, 6-8" long.
- Fruit:** Small, brown nuts ($\frac{1}{2}$ ") covered by hairy, brown outer shell.
- Bark:** Interesting smooth, grey bark with vertical streaking, usually with multiple trunks.



Tree Lore – The Fragrant Snowbell is an attractive small tree native to northern China and Japan. In Asia, an extract from the bark has been used as fragrant resin for incense or perfumes. Not commonly found in the United States, but sometimes planted as a small ornamental flowering tree. Although the Snowbell family includes about 160 species, there is just one tree-size family member in North America -- the Mountain Silverbell in woodlands of the southeast.

Fragrant Snowbell



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Horsechestnut (*Aesculus hippocastanum*)

Also called the Candle Tree
Soapberry Family (Sapindaceae)

- Leaves:** Opposite fan-compound leaves, very large (14"), on long stems; usually 7 leaflets per leaf, each leaflet broadest near the tip.
- Flower:** Large upright plumes bearing attractive clusters of small white flowers, with red spots after pollination.
- Fruit:** Very spiny casing, 2" wide, green then brown, containing 1, 2 or 3 smooth brown nuts.
- Bark:** Gray-brown, with fairly smooth longish scales.



Tree Lore – The Common Horsechestnut has a limited native range in southeastern Europe, mainly in mountain forests of Greece, but it is widely cultivated for its beauty. The nuts are slightly poisonous, but they were collected in World War I as a solvent for producing explosives for the British military. The seeds, leaves and bark have been used as herbal medicine for a variety of purposes – there is even a Horse Chestnut page on WebMD. In winter, the Horsechestnut can be identified by its very large, sticky, shiny brown terminal buds on thick twigs.

Horsechestnut



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Oriental Photinia (*Photinia villosa*)

Also called Christmas Berry
In the Rose Family (Rosaceae)

- Leaves:** Simple alternate leaves, 2-4" long, oval to oblong, tapering to a distinct point; margins finely toothed.
- Flower:** Showy clusters of flowers with five round, white petals, blossoming in mid-spring.
- Fruit:** Small (1/3") bright-red fleshy berries, hanging on long stems, usually in clusters.
- Bark:** Fairly smooth, thin, grey bark, with verticle streaking.



Tree Lore – This small deciduous tree is native to woodlands in China, Japan and Korea. On the Rockery loop, it's the nearly horizontal tree that you need to step over (or crawl under) on the path at the back of the Grotto hill. [Note: where people have been stepping on the leaning trunk, the bark is heavily discolored.] Then branches then dangle over the steps up to the top of the rock formation. The Photinia is planted as an ornamental shrub for its lovely flowers, berries and autumn leaves. The berries are consumed by birds and, according to one source, they have been used in the past as famine food "when all else fails."

Oriental Photinia



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Pacific Yew (*Taxus brevifolia*)

Also called Western Yew
In the Yew Family (Torreyas)

- Leaves:** Evergreen, flat dark-green, lance-shaped needles, usually in flat rows along the twigs.
- Flower:** Non-flowering tree; cones small (1/4"), under leaf splays; males round to oval, abundant; females greenish, scaly, less numerous.
- Fruit:** Female cones mature to small (1/2"), red, berry-like seed cones (called arils)
- Bark:** Thin, reddish-brown bark, with vertical fissures, often with peeling strips.



Tree Lore – The Pacific Yew is native to the Pacific northwest. An older IRWS guide to the Rockery trees mentions that other species of yew were also planted here, including Japanese Yews (*Taxus cuspidata*), and some may be hybrids. However, Sibley's *Guide to the Trees* explains that it takes a specialist to distinguish one from another. One yew shrub is native to the northeast, but it never reaches tree size. The berry-like fruit is eaten and dispersed by birds. Native Americans used the tough yew wood for bows and paddles. A chemical from the Pacific Yew has been synthesized as a chemotherapy drug.

Pacific Yew

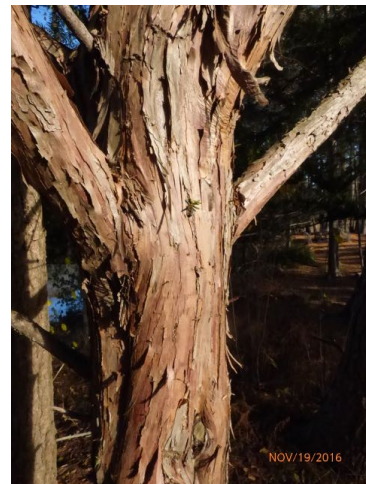


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Pecan (*Carya illinoensis*)

In the Walnut Family, with Hickories (Juglandaceae)

- Leaves:** Feathery compound leaves on long stems, each with 11 to 17 narrow, pointed leaflets about 5" long.
- Flower:** Separate male and female flowers; male flowers on long (4") green hanging catkins; females inconspicuous.
- Fruit:** Oblong, pointed, hard casing with four ridges, cover the familiar pecan nut inside; the casing is green at first, maturing to brown.
- Bark:** Light bark, with flaky scales along vertical



Tree Lore – There are several Pecan trees along the far side of the Rockery Loop. The tree is native to southeastern United States, and is the State Tree of Texas. Huge old-growth pecans, up to 30 feet in circumference, were first described in the journals of Hernando de Soto, and chronicled by other early explorers in the lower Mississippi valley. George Washington and Thomas Jefferson both planted Pecans on their Virginia plantations. A single large tree can produce up to 1,000 pounds of nuts per year, but trees in the New England climate rarely bear fruit. Leaves emerge late in the spring, and stay green on the tree late into the fall.

Pecan



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Pin Oak (*Quercus palustris*)

Also known as Swamp Oak
In the Beech Family (Fagaceae)

- Leaves:** *Alternate* leaves; dark-green with large, deep lobes, tips pointed (bristled).
- Flower:** Male flowers are clustered on hanging catkins; female flowers inconspicuous.
- Fruit:** Acorn small (3/4"); acorn cup shallow (like saucer rather than bowls) with tight scales.
- Bark:** Grayish-brown with vertical furrows and ridges, less deep than with Red Oak or Black Oak.



Tree Lore – The Pin Oak's native range reached south-western Massachusetts, but not to Essex County. The tree's name may derive from short spur-like branchlets that often protrude from main branches. Another story is that the hard knotty wood was used for pins in boat building and in timber house frames. Compared to other trees in the Red Oak group, the leaves tend to have deeper lobes, the acorn cup is shallower, the autumn foliage tends to be brighter, and the lower branches have a characteristic drooping shape. The tree has been widely planted as an ornamental for its shapely form (due to the droopy branches) and vivid foliage.

Pin Oak



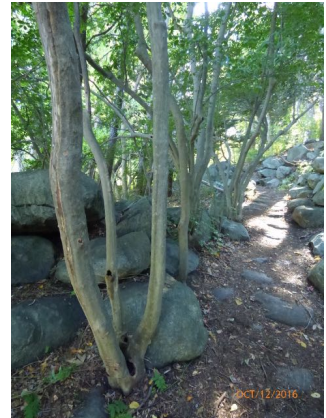
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Redveined Enkianthus (*Enkianthus campanulatus*)

In the Heath Family (Ericaceae)

- Leaves:** Green, finely-toothed, egg-shaped leaves, 3” long, clustered at the end of twigs.
- Flower:** Attractive clusters of small (1/2”) bell-shaped, cream to pink flowers with red veins, dangling on long, thin stalks.
- Fruit:** Small green to brown seed capsules, not showy.
- Bark:** Smooth, grey to grey-brown, similar to American Beech.



Tree Lore – As you approach the Rockery Grotto, you will be walking under a canopy formed by a grove of graceful Redveined Enkianthus on both sides of the trail. A native of Asia (from the Himalayas to Japan), the Enkianthus is categorized as a shrub and typically grows as such. But it has thrived along the Rockery Trail to attain the size of a small tree. With its smooth, curvy trunk, lovely flowers, and yellow-red foliage, the Enkianthus is often cultivated for landscaping in temperate climates – even winning an Award of Garden Merit from Britain’s Royal Horticultural Society.

Redveined Enkianthus



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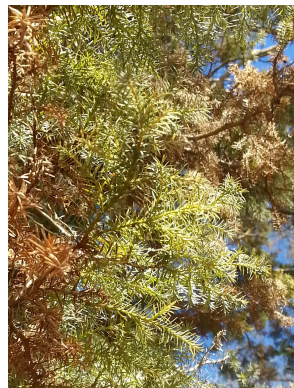
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Moss Sawara False Cypress

(*Chamaecyparis pisifera* subsp. *squarrosa*)

In the Cypress Family (Cupressaceae)

- Leaves:** Evergreen, pale-green, needle-like leaves in feathery clusters
- Flower:** Non-flowering tree. Male cones tiny (1/8"), inconspicuous; female cones slightly larger, round, light green.
- Fruit:** Tiny oval seed cones (1/3") grow at base of leaf stalks; light green in summer, maturing to woody brown in autumn.
- Bark:** Lovely reddish-brown, with vertical fissure, peeling in thin strips.



Tree Lore – The magnificent eyecatcher on the back side of the Rockery loop is an ornamental subspecies (*squarrosa*) of the Sawara False Cypress, which is native to temperate islands in Japan. There are also two specimens of the principal type of Sawara on the near side of the trail (see SC* on the map); their leaves are darker green and scale-like. The Sawara False Cypress rarely reaches tree size in the United States, though cultivars are used as garden shrubs. The attractive, fragrant wood is used in Japan as building material, especially for palaces, temples and shrines.

Moss Sawara False Cypress



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IRWS (leaves of principal type Sawara rather than the *squarrosa* subspecies)

Sourwood (*Oxydendrum arboreum*)

Also called Sorrel Tree

In the Heath Family (Ericaceae)

- Leaves:** Slender, pointed green leaves, 6" long, finely toothed, drooping from twigs and branches
- Flower:** Tiny, white flowers arrayed on long, narrow spikes (raceme) at the tip of the twigs
- Fruit:** Tiny brown seed capsules on long narrow spikes, persisting on tree well into the winter.
- Bark:** Gray-brown, deeply furrowed with strong vertical ridges broken into blocks.



Tree Lore – The Sourwood's native range runs from the Atlantic coast to Texas, south of Pennsylvania. The name comes from the sour taste of the leaves, but the blossom is used to make sourwood jelly and honey derived from the flowers is highly prized. One large Sourwood bends over the far corner of the Rockery Pond. Although it's about 10' off the trail, behind a large rhododendron, the crown of the tree dominates the view from the long boardwalk at the outlet of the pond, especially in autumn when the brilliant scarlet foliage rivals the famous colors of the Sugar Maple.

Sourwood



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Guide to Tree Resources

- Peattie, Donald Culross, *A Natural History of North American Trees*, Houghton-Mifflin, 2007.
- Petrides, George A., *Peterson Field Guides: Eastern Trees*, Houghton-Mifflin, 1988.
- Sibley, David Allen, *The Sibley Guide to Trees*, Alfred A. Knopf, 2009.
- Symonds, George W.D., *The Tree Identification Book*, Quill Publications, 1958.
- Wojtech, Michael, *Bark: A Field Guide to Trees of the Northeast*, University Press of New England, 2011.
- Species entries at www.wikipedia.org; <http://www.na.fs.fed.us>; www.arborday.org; and <http://www.missouribotanicalgarden.org>.

Final ID –



Do you know this common indigenous vine, climbing up a tree trunk?

Yes! Poison Ivy grows as a hairy vine on trees, not just as a shrub! Remember: “If it’s hairy, then it’s scary!”

Mass Audubon works to protect the nature of Massachusetts for people and wildlife. Together with more than 125,000 members, we care for 36,500 acres of conservation land, provide educational programs for 200,000 children and adults annually, and advocate for sound environmental policies at the local, state, and federal levels. Mass Audubon's mission and actions have expanded since our beginning in 1896 when our founders set out to stop the slaughter of birds for use on women's fashions. Today we are the largest conservation organization in New England. Our statewide network of 56 wildlife sanctuaries welcomes visitors of all ages and serves as the base for our conservation, education, and advocacy work. To support these important efforts, call 800-AUDUBON (283-8266) or visit www.massaudubon.org.

There's More to Discover at the Ipswich River Wildlife Sanctuary

Take advantage of our membership benefits and rent a canoe for a paddle along the Ipswich River, spend a night in the Innermost House, or camp out on Perkins Island. Join us for one or all of our special events, including: Maple Sugaring in March, It's a Big Night in April (a program about vernal pools and salamanders), Audubon Nature Festival in June (with live animal presentations), Halloween Happenings in October, and the Big Woods Hike in November. Our educators offer natural history programs for children, families, and adults year-round. Children have fun in nature at our Summer Day Camp Programs along with vacation programs each February and April. Celebrate your child's birthday with a naturalist-led program and party time. Brochures are available with descriptions of all programs. Call the sanctuary, and we would be happy to mail you one, or check out our website: www.massaudubon.org/ipswichriver.