

# Ipswich River Wildlife Sanctuary

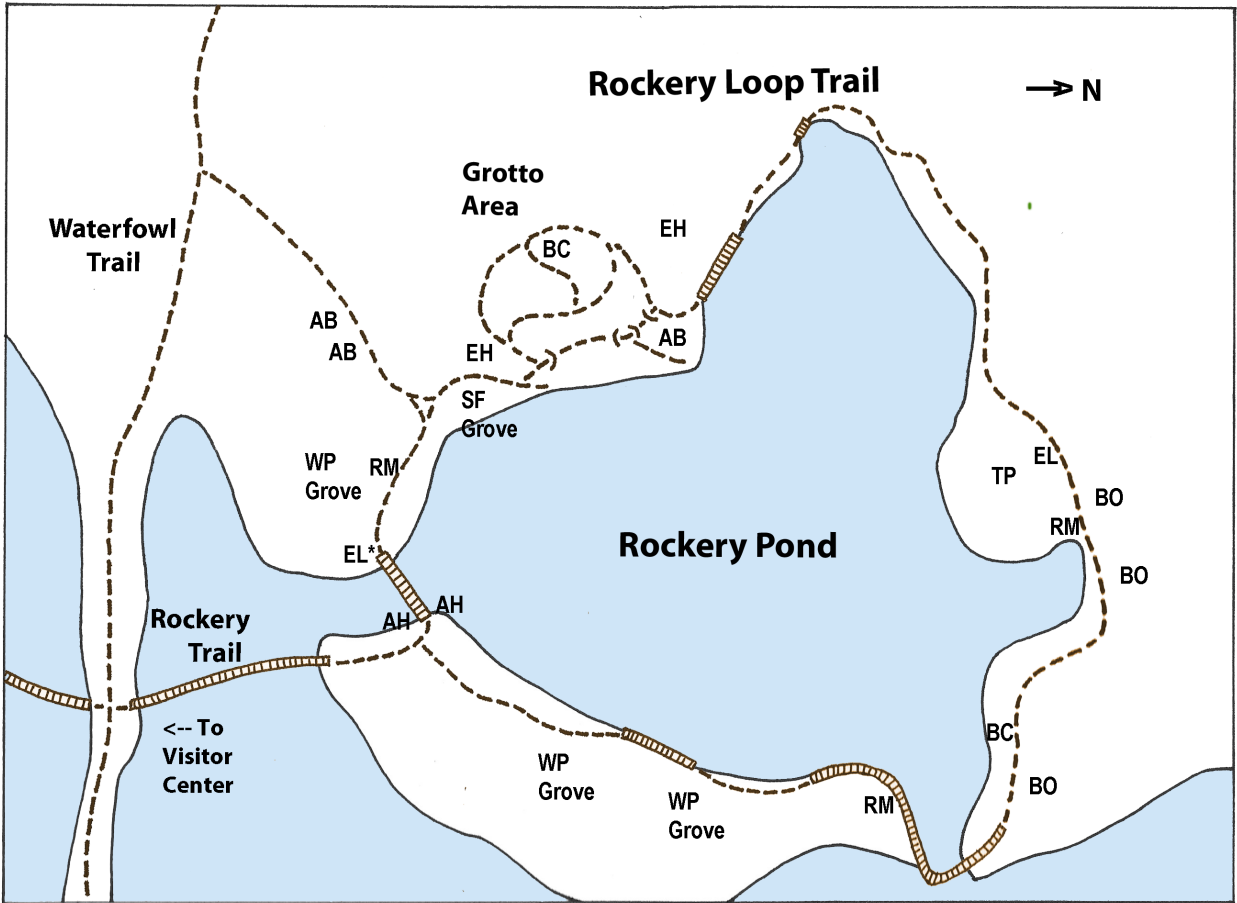
## Self Guided Discovery Walk



*10 Indigenous Trees  
along the Rockery Loop*



# Rockery Loop Trail



Waterfowl Trail

Grotto Area

Rockery Pond

Rockery Trail

<-- To Visitor Center

AB  
AB

BC

EH

EH

AB

SF Grove

WP Grove

RM

TP

EL

BO

RM

BO

EL\*

AH

AH

WP Grove

WP Grove

RM

BC

BO

## Introduction

This set of Discovery Cards provides a guide to ten notable trees along the Rockery Loop that are native to eastern Massachusetts. A separate set of Discovery Cards will cover non-indigenous trees that were introduced a century ago for a private arboretum (see **Rockery History**, on the back side of this card). **Both sets of cards focus on trees, and exclude prominent shrubs around the Loop**, such as Rhododendron, Azalea, Mountain Laurel and Drooping Leucothoe (or Fetterbush). Specifically, the following species are covered by the present set of Discovery Walk cards:

	<u>Map Code</u>
1. American Beech	AB
2. American Elm	EL
(Slippery Elm)	(EL*)
3. American Hornbeam	AH
4. Black Cherry	BC
5. Black Oak	BO
6. Black Tupelo	TP
7. Eastern Hemlock	EH
8. Eastern White Pine	WP
9. Red Maple	RM
10. Sassafras	SF

**Use the Map Codes above to find tree locations on the trail map.** (For some species there other specimens along the trail that are not shown on the 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 here a private arboretum, including the special feature known as the Rockery. The arboretum featured 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.

# American Beech (*Fagus grandifolia*)

In the Beech Family (Fagaceae)



- Leaves:** Alternate leaves, with large serrations, straight parallel veins off central vein; foliage is bright yellow in autumn.
- Flower:** Inconspicuous, emerging along with leaves in spring; males pale yellow clusters on 1" stalks; female smaller, more reddish, shorter stalks.
- Fruit:** Conspicuously burry, brown beechnut casing,  $\frac{3}{4}$ "; small nuts inside.
- Bark:** Lovely smooth grey bark when healthy. Heavily scarred when suffering from invasive beech bark blight.

**Tree Lore** – The American Beech is one of our most beautiful trees. The nuts are a favorite food for many birds and mammals. They were also an important food source for Native Americans. Because the trees favor rich well-drained soils, early settlers often saw them as markers for good farmland, and cut beech groves quickly to clear the land. The settlers used the excellent wood for heating, for carving into household items, and for burning into ash as a source of potash and lye for soap. Dried leaves often remain on the trees through most of the winter, along with long, lance-shaped brown buds.

# American Beech



## *Photo credits:*

Opposite side:

Left above:

Center above:

Right above:

Rafael Medina, Flickr Creative Commons

IRWS

Suzanne Cadwell, Flickr Creative Commons

Putneypics, Flickr Creative Commons

# American Elm (*Ulmus americana*)

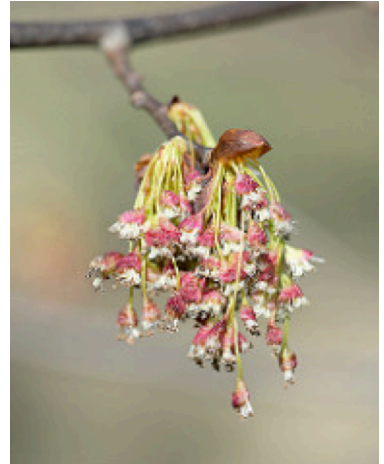
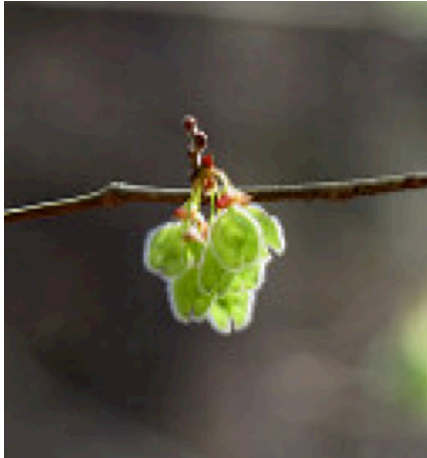
In the Elm Family (Ulmaceae)



- Leaves:** Alternate leaves, large serrations, straight parallel veins off mid-vein; short stalk; base distinctively asymmetrical.
- Flower:** Small, droopy clusters on long stems, emerging before leaves come out.
- Fruit:** Small (1/2"), oval and flattened winged fruit, with notch at tip.
- Bark:** Brownish grey, moderately furrowed, with vertical scales or strips.

**Tree Lore** – The American Elm was a favorite native shade tree throughout the region due to its elegant vase-shape and beautiful arched crown. Then Dutch Elm disease arrived on imported logs in 1928, killing nearly all the mature trees. Young trees still survive, but they rarely reach full size. Many of the elms found in the Sanctuary are **Slippery Elms**, also indigenous. The Slippery Elm has rougher leaves, short-stalked flora, fat buds and unnotched fruit. Both of these species are present on the Rockery loop (labeled on the map as EL and EL\*), though they are rather thin compared to fully mature elms.

# American Elm



## *Photo credits:*

Opposite side:

Left above:

Center above:

Right above:

Matt Lavin, via Flickr Creative Commons

IRWS

Katja Schulz, via Flickr Creative Commons

Plant Image Library, via Flickr Creative Commons



## American Hornbeam (*Carpinus caroliniana*)

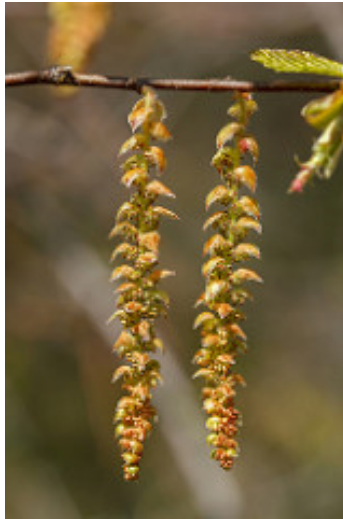
Also called Ironwood, Water Beech  
In the Birch Family (Betulaceae)

- Leaves:** Oval, 3-1/2"; distinctly toothed; pointed tip.
- Flower:** Pale yellow, dangling male catkins, 1-1/2" long; female flowers shorter, looser catkin at tip of new growth.
- Fruit:** 4" long stack of yellowish 3-lobed samaras.
- Bark:** Smooth and gray, similar to beech, but with distinctive muscle-like fluting along length of trunk.



**Tree Lore** – This relatively small but distinctive tree favors moist soils along wetlands or streams, as here along the Rockery Trail. The “horn” in hornbeam refers to toughness of the wood. This makes it largely useless as commercial timber, except for artisinal items like bowls, tool handles, and walking sticks. The leaves provide food for various caterpillars. Birds are the main distributor for the seeds. Autumn foliage turns red, orange, and yellow.

# American Hornbeam



## *Photo credits:*

Opposite side:

IRWS

Left above:

IRWS

Center above:

Tom Potterfield, Flickr Creative Commons

Right above:

"Dogtooth 77", Flickr Creative Commons

## **Black Cherry (*Prunus serotina*)**

Also called Cabinet Cherry  
In the Rose Family (Rosaceae)

- Leaves:** Alternate, simple, unlobed, oval, leathery leaves, up to 5" in length; pointed tips, finely toothed edges.
- Flower:** Attractive clusters of small white flowers bunched on long (4-6") stems, called "racemes".
- Fruit:** Bunches of small (1/3"), reddish-black berries ("drupes"), arrayed around long, dangling stems.
- Bark:** On mature trees the bark is dark gray, broken heavily into blocky scales.



**Tree Lore** – The two Black Cherry trees along the Rockery trail (see map) are mature specimens, but not especially large or impressive examples of what can be very beautiful tree. This is the largest indigenous cherry tree, which often grows to over 60' tall. The berries attract many species of birds and some forest mammals, while the gorgeously textured, reddish wood is highly prized by furniture makers – hence the nickname Cabinet Cherry. The inner bark contains an almond-scented prussic acid that was used by Native Americans for making a medicine to treat coughs and sore throats.

# Black Cherry



## *Photo credits:*

Opposite side:

Left above:

Center above:

Right above:

Rasbak, via Wikimedia Commons

IRWS

Rasbak, via Wikimedia Commons

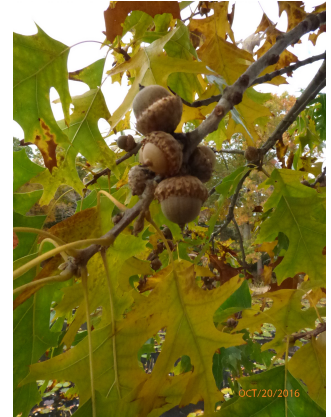
Andreas Rockstein, via Flickr Creative Commons

# **Black Oak (*Quercus velutina*)**

Also called Yellow Oak

In the Beech Family (Fagaceae)

- Leaves:** Alternate simple leaves; dark-green with large, variable lobes, pointed (bristled) tips.
- Flower:** Male flowers are clusters of long catkins; female flowers inconspicuous.
- Fruit:** Acorns small (3/4"), cup relatively deep, bowl-shaped, with fringed scales.
- Bark:** Dark, broken into blocks with vertical ridges.



**Tree Lore** – Because the leaf shape can be quite variable, it's difficult to distinguish Black Oak from the more common Red Oak and other members of the Red Oak group using the leaves alone. But the bark is darker, lacking long smooth ridges. In fall, the acorns are smaller with cups less smooth, and in winter the buds are pale with hairy fuzz. All oaks produce acorns that are important source of food for many woodland animals. Squirrels also use oak leaves in building cozy water-proof nests (called dreys); in winter these nests are seen as large balls of leaves, high in the trees. Black Oak bark has been used to produce yellow dye, and as a source of tannin for tanning leather.

# Black Oak



## *Photo credits:*

Opposite side:

IRWS

Left above:

IRWS

Center above:

E.G. Denny, Flickr Creative Commons

Right above:

Tom Potterfield, Flickr Creative Commons

# **Black Tupelo (*Nyssa sylvatica*)**

Also called Black Gum, Sour Gum

In the Tupelo family (Nyssaceae)

**Leaves:** Simple, alternate leaves (5"), glossy green above, pale green under; usually untoothed, egg-shaped, on short stalks (petioles).

**Flower:** Very small greenish flowers at the tip of slender stalk; male flowers in loose clusters like pom-poms, female flowers in tighter clusters.

**Fruit:** Small (1/2") dark blue berries, grouped at end of long stalk.

**Bark:** Gray-brown to reddish-brown, deeply furrowed ridges breaking into checkered blocks on older trees.



Photo by Matthew C. Perry

**Tree Lore** – Although the Tupelo is often called a “gum” tree, the reason is obscure, as the tree does not produce any useful form of gum! The tree is usually found in moist soil and swampy woodlands. The blue berries (drupes) are a favorite food of many migrating birds, including robins. Mature trees often have cavities that are used by squirrels, raccoons and honey bees. The wood is tough and resistant and difficult to work; it has been put to uses such as bowls, wheel hubs, gun stocks, and shuttles for weaving. The autumn foliage is vivid yellowish-red.

# Black Tupelo



## *Photo credits:*

Opposite side:

Matthew C. Perry, public domain via Wikimedia Commons

Left above:

IRWS

Center above:

Jean-Pol Grandmont, via Wikimedia Commons

Right above:

Matthew C. Perry, public domain via Wikimedia Commons



## Eastern Hemlock (*Tsuga canadensis*)

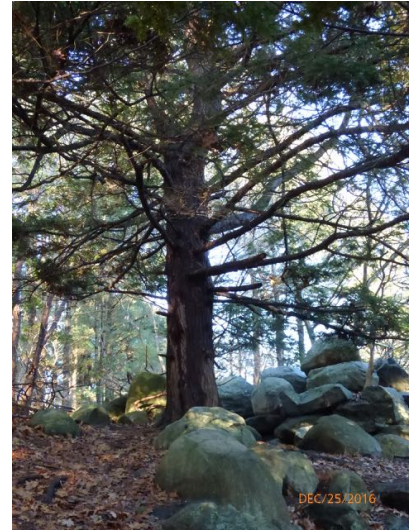
Also called Canadian Hemlock  
In the Pine Family (Pinaceae)

- Leaves:** Evergreen; short (1/2"), flat, blunt needles, in flat rows along twig; whitish lines below.
- Flower:** Non-flowering tree; tiny (1/8") yellow male cones below twig spread pollen by wind; immature female cones inconspicuous.
- Fruit:** Seed cones small (3/4"), brown, roughly egg-shaped.



**Tree Lore** – Hemlock trees are slow growing, taking 250 years or more to fully mature. They are shade tolerant, and prefer cool moist soil. In favorable conditions they can live more than 800 years. Virtually all old-growth Hemlocks in the region were cut down for the bark, which is rich in tannin-- the main chemical used for tanning leather. In fact, the Rockery itself was built with wealth from leather tanning, mainly using Eastern Hemlock bark. The hemlock is a rich food source for many animals, and the foliage provides winter shelter for small birds. Note: some hemlocks on the far side of the Loop are Carolina Hemlock (*Tsuga caroliniana*); needles and cones slightly longer, needle rows less flat.

# Eastern Hemlock



*Photo credits:*

Opposite side:	IRWS
Left above:	IRWS
Center above:	Kent McFarland, Flickr Creative Commons
Right above:	IRWS

# Eastern White Pine (*Pinus strobus*)

In the Pine Family (Pinaceae)

- Leaves:** Conifer with straight, blue-green *needles*, 4" long, in bundles of five.
- Flower:** Non-flowering plant. Small yellow male cones near growth tips produce clouds of yellow pollen to fertilize tiny reddish female cones.
- Fruit:** Fairly slender seed cone, 5" long, reddish brown.
- Bark:** On young trees, smooth grey bark; on mature trees, bark thickly scaled in irregular blocks, greyish to red-brown.



**Tree Lore** – Soon after early colonists arrived in New England, timber became a primary export product, along with furs and fish. The White Pine trees – many towering more than 180' in height, with a diameter exceeding 4' – were especially valued as a source of masts for the British naval fleet. A royal claim on these majestic trees (known as the “King’s Pines”) was a major source of resentment against the crown, as it conflicted with the colonists own demand for pine wood as a principle material for buildings and furniture. This grievance helped to fuel support in New England for Independence from the British.

# Eastern White Pine



## *Photo credits:*

Opposite side:	IRWS
Left above:	IRWS
Center above:	DigbyDalton, via Wikimedia Commons
Right above:	Greg Wagoner, Flickr Creative Commons

## **Red Maple (*Acer rubrum*)**

Also called Swamp Maple, Soft Maple

In the Maple Family (Aceraceae)



**Leaves:** Opposite leaves, usually three main lobes; edges are strongly toothed

**Flower:** Tiny flower clusters hugging twigs before leaves come out; female flowers red, males red-yellow.

**Fruit:** Tiny clusters on long scarlet stems as leaves emerge; maturing to 1" double-winged "helicopter" seed (samaras).

**Bark:** On mature trees, bark is grey-brown with vertical strips often flaking at edges.

**Tree Lore** – The Red Maple grows in a wide range of habitats. It's especially fond of wetland margins, so it is common in the Sanctuary. The Red Maple can be tapped for tasty syrup, like it's cousin the Sugar Maple, but it's not economical due to lower sugar content of the sap and a shorter sap-flow season. The wood, though, has many uses including for furniture, utensils, and fuel. Red Maples have a touch of red in every season: on buds, twigs, flowers, fresh samaras, leafstalks (petioles), and, of course, vivid red foliage in the autumn! When growing alongside wetlands, Red Maple often have cavities that are attractive to nesting Wood Ducks.

# Red Maple



*Photo credits:*

Opposite side:

Left above:

Center above:

Right above:

IRWS

IRWS

Janet Tarbox (Flickr Creative Commons)

Doug McAbee (Flickr Creative Commons)

## **Sassafras (*Sassafras albidum*)**

Also called Mittenleaf, Cinnamon Wood

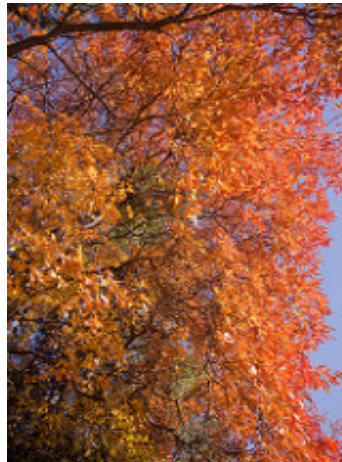
In the Laurel Family (Lauraceae)

- Leaves:** Alternate, smooth-edged leaves (5") with three primary veins; can have 3 lobes, 2 lobes (like a mitten), or no lobes.
- Flower:** Tiny loose clusters of greenish-yellow flowers, 5 petals; abundant on female trees, sparser on male trees.
- Fruit:** Loose clusters of small dark-blue berries ("drupes") on long red stalks.
- Bark:** Reddish-brown with distinctive deep furrows.



**Tree Lore** – Fragrant oil from the bark and roots has been used in tea, soaps, perfumes, candies, herbal medicines – and, since the late 19<sup>th</sup> century, as the original base for making root beer (hence the “root” in the name of the drink). Earlier, colonists regarded the anise-scented wood as a repellent for bed-bugs, and often used it for their beds. The Sassafras sports beautiful autumn foliage, from yellow to bright red. The fruit is consumed by many species of birds and mammals. Groves of Sassafras, as we have near the Rockery Grotto, are likely to be clones of the first individual tree, developed from suckers.

# Sassafras



*Photo credits:*

Opposite side:

Left above:

Center above:

Right above:

Kerry Wixted, via Flickr Creative Commons

IRWS

Suzanne Cadwell, via Flickr Creative Commons

Suzanne Cadwell, via Flickr Creative Commons



## 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.wikipedia.org); <http://www.na.fs.fed.us>;  
<http://www.missouribotanicalgarden.org>; [www.arborday.org](http://www.arborday.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](http://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](http://www.massaudubon.org/ipswichriver).