2018 is the Year of the Pollinator at
Awbury Arboretum

Pollinator insects provide a great deal of service to humans and other species. They not only pollinate food crops, but play a vital role in the life cycles of many other plants and animals. Bees and butterflies, our best known pollinators, are commonly connected to spring and summer flowers. Their relationships with woody plants (trees and shrubs) are less known, but just as important. Unlike herbaceous plants, woody plants persist year round through all seasons. Because of this, trees and shrubs can provide much more for insects.

American Holly
Ilex opaca

and

Bee family
Apiaceae

2

Tulip Poplar
Liriodendron tulipifera

and

Butterflies & Moths
Lepidoptera

3

Hackberry
Celtis occidentalis

and

Butterflies & Moths
Lepidoptera

4

Northern Red Oak
Quercus rubra

and

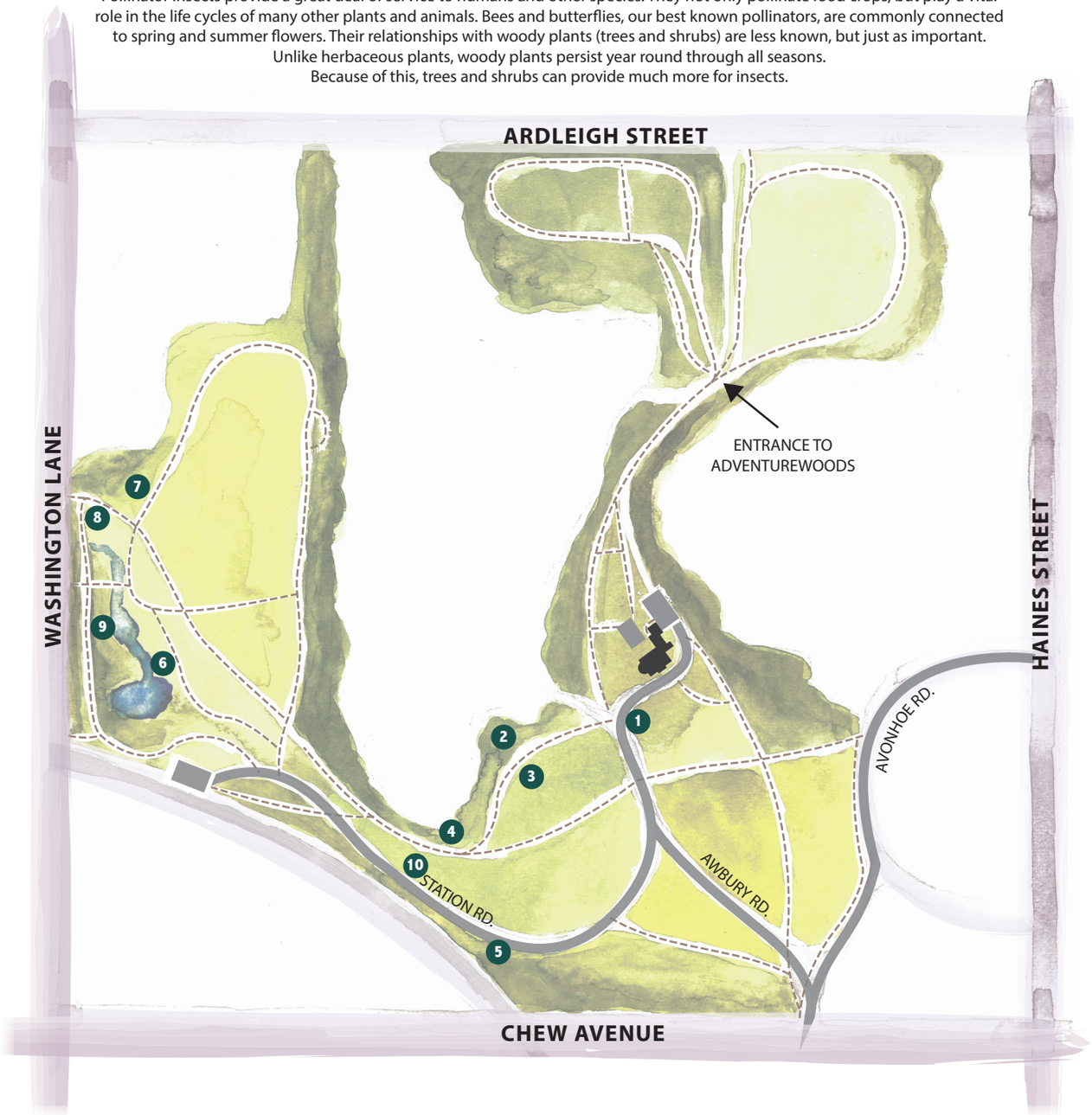
Butterflies & Moths
Lepidoptera

5

Black Maple
Acer nigrum

and

Bee family
Apiaceae



6

White Willow
Salix alba

and

Butterflies & Moths
Lepidoptera

7

Atlantic White Cedar
Chamaecyparis thyoides

and

Hessel's hairstreak Butterfly
Callophrys hesseli

8

Spicebush
Lindera benzoin

and

Spicebush Swallowtail
Papilio troilus

9

River Birch
Betula nigra

and

Butterflies & Moths
Lepidoptera

10

American linden
Tilia americana

and

Bee family
Apiaceae

Trees provide insects with:

Habitat: year round structures with protective locations for insects to create a home.

Protection: Trees have large canopies which insect can travel throughout reducing exposure in broad open spaces to predators.

Food: From leaves to pollen and nectar, trees provide a source of food for caterpillars, butterflies and bees.

Green Sweat Bee | Agapostemon sp.

Blue Orchard Mason Bee | Osmia lignaria

How to find signs of Pollinator Insects on Trees:

1 Listen for a humming sound coming from a flowering tree like a Maple in early spring or a Holly in July. Look closer and you will see the trees full of bees.

2. Look at leaves closely. Look for caterpillar damage by leaves with large sections bitten off, might only be the veins left!

3. Look on the ground for pieces of leaves if the branches are too high up. Look under leaves for eggs, most caterpillar eggs look like little yellow or white ovals hanging in clusters.

4. Look in the trees' canopy to see butterflies flying around especially in summer months.

5. Examine bark by looking closely for camouflaged insects hiding in furrows.

6. Think about the tree and what type of pollinator insect might use it for, than look for their signs. Do not forget about wasps and hornets too. They make their homes in trees which you can see as big domes with a hole at the bottom for the wasp or hornets to enter. Stay back when you see this!

Trees for Bees

1) American Holly/Bee family | Ilex opaca/Apidae

American Holly flowers are an abundant source of nectar and pollen in the summer, which are a good source for bees, wasps, butterflies and moths. These flowers are not showy to people but are very fragrant, many times you can smell them but will never know where it is coming from.

2) Tulip Poplar/Butterfly family | Liriodendron tulipifera/Lepidoptera

Tulip Poplar leaves are a popular food source for caterpillars, the larval stage of butterflies. Many of our key pollinator species of butterflies use Tulip Poplars to lay their eggs. According to entomologist Douglas Tallamy, Tulip Poplars support 368 different species. You can recognize the Tulip Poplars by their long straight trunks reaching heights of 80' and their cat-face shaped leaves.

3) Hackberry/Butterfly family | Celtis occidentalis/Lepidoptera

Hackberry trees are related to Elms, which have been devastated by disease throughout the United States for the past 100 years. Since Elms were a key species in the forests, Hackberry trees now act as a continued source for insect species which had a relationship with Elms. Specifically, caterpillars now use Hackberry leaves as key food source. You can identify the Hackberry tree by the unique bark which is covered in cork lumps.

4) Northern Red Oak/Butterfly familly | Quercus rubra/Lepidoptera

Oaks contain two categories, Red Oaks and White Oaks. There are many differences between the two categories but the clearest way to identify which group an Oak tree is in is by the leaves. Red Oaks have points while White Oaks have rounded edges. This is a Red Oak. Oaks are one of the top trees for wildlife. According to Douglas Tallamy, Oak trees provide for over 534 Butterfly and moth species. This is more than any other woody plant or herbaceous flower.

5) Black Maple/Bee family | Acer nigrum/Apidae

Maple trees are very popular landscape shade tree. Sugar and Red Maples are very showy in the fall with brightly colored leaves. In the summer, Maple trees provide cool shade. Early in the spring Maple trees are one of the first to bloom; providing bees and pollinator insects an early source of food while most other trees still have bare stems. Their blooms are one of the first signs of spring but you may not know they are blooms at all. Maple flowers look like a light bright green or red tint to the trees branches. This Black Maple has the classic Maple leaf shape but the tips of the leaves will always droop.

6) American Linden/Bee family | Tilia americana/Apidae

American Lindens are a great source of pollen and nectar for bees. The clusters of flowers hang in the early summer from a slender oval bract, or a modified leaf that acts as a petal. The bracts make the tree appear to have two very different types of leaves, until the flower clusters turn to seeds and both the bract and nuts fall to the ground making a crunchy coating under your feet. Many people feel that honey made from Lindens is the best tasting honey.

7) White Willow/Butterfly familly | Salix alba/Lepidoptera

Willow trees are surprisingly pollinated by the wind and do not rely on insects to spread their pollen to other trees. On the other hand they do still provide a great source of habitat for butterflies by providing a preferred leaf as food. Willows are found to provide for 455 butterfly and moth caterpillars. Most noticeable is the Viceroy butterfly which looks just like the distinct orange and black Monarch butterfly. This White Willow is native to Europe but has grown on the North American continent for so long it is considered naturalized. White Willows provide the classic image of weeping branches swaying by a pond.

8) Atlantic White Cedar/Hessel's hairstreak Butterfly | Chamaecyparis thyoides/Callophrys hesseli

Atlantic White Cedars commonly occur in groupings in swampy areas along the east coast of North America, like the Pine Barrens. While most trees associated with butterflies are broadleaf and flowering, the Atlantic White Cedar is an evergreen conifer. This means it has needles for leaves that stay on the branches all year and it produces cones instead of flowers. The Hessels Hairstreak butterfly is losing habitat from the loss of Atlantic White Cedar stands in the wild. These butterflies will only lay their eggs on the tips of the Cedar needles. The caterpillar looks surprisingly like the clusters of needles which they eat. Adults are key pollinators of common wetland plants like blueberries, swamp milkweed, and buttonbush.

9) Spicebush/Spicebush Swallowtail Butterfly | Lindera benzoin/Papilio troilus

Spicebushes are a familiar understory shrub growing in our shady parks, yards, and forests. They are much loved by birds for their bright red berries in the early fall. They are more recognizable by people for their scent when their smooth oval leaves are brushed against. The Spicebush Swallowtail butterfly has evolved with this shrub. Butterflies lay their eggs mainly on Spicebush leaves so the caterpillar will eat the leaves and take on the leaves strong flavor making them unpalatable to birds and thus giving the butterfly its name, Spicebush Swallowtail.

10) River Birch/Butterfly family | Betula nigra/Lepidoptera

Birch trees do not rely on insect pollination but they still are a key source of habitat for the insects. Birch trees provide a food source with their leaves for an estimated 413 species of butterflies and moths. In addition, Birch trees have deep furrowed and peeling bark which creates opportunity for insects like vulnerable caterpillars to hide from predators. This River Birch is much older and larger than most River Birches. If you look high up in the tree you will see the familiar white and orange peeling bark on the younger branches.

Trees for Bees

A self-guided map of key trees & shrubs for pollinators at Awbury Arboretum

Spicebush Swallowtail | Papilio troilus