Common Plants and Pollinators in JAMAICA BAY & ROCKAWAY

A FIELD GUIDE

Illustrations by Valentina Gallup Salerni

Produced by Jamaica Bay-Rockaway Parks Conservancy

NOTES

JAMAICA BAY AND ROCKAWAY PARKS

A Special Ecosystem in New York City

Jamaica Bay, an 18,000 acre urban **estuary**, and Rockaway, an 11-mile long **barrier peninsula**, are located in the southeast corner of New York City, spanning across Brooklyn, Queens and the Atlantic Ocean.

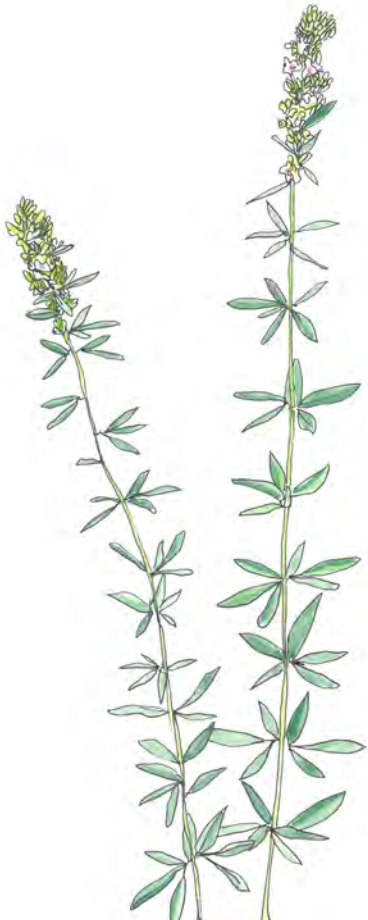
There are many parks in this corner of NYC, including city, state, and national parkland. Collectively, these parks are rich in ecological diversity and offer a meaningful and thrilling connection to the natural world. In these parks, you can find unique **ecosystems** such as salt marshes, grasslands, freshwater ponds, mudflats, barrier beaches, sand dunes, and maritime forests.

Local plants and animals rely on these vibrant ecosystems to survive, and it is our collective responsibility to learn from and protect these special places as **environmental stewards**.

NATIVE PLANTS

Native plants grow naturally in a certain region of the world. Over centuries, native plants evolved to perfectly fit their region's **climate** and soil conditions – this means they do not need water or fertilizer beyond what their environment provides to thrive!

Native plants fill important roles in their ecosystem, including feeding **pollinators**, absorbing stormwater, and providing shelter for local and **migratory** wildlife.



HOW TO IDENTIFY PLANTS

Look closely at plants and you will find there are many clues to help us identify them. Take note of a plant's stems, leaves, flowers and fruit – what colors do you see? What textures are you observing – rough, wrinkly, smooth, hairy? Are there thorns on the plant? What shape do the leaves look like to you - are the edges rough and ragged, like teeth? Or are they smooth all around? Do you see buds or seeds? Do the flowers have a distinct smell? Some plants have fragrant leaves too!

Once you collect your observations, turn to this guide and look through its detailed illustrations of Jamaica Bay and Rockaway's important native plants. This guide is divided into sections including **herbaceous** (non-woody) plants, and trees and shrubs (woody plants). Near the end of the field guide, you'll find entries for some common pollinating animals as well!


BROOKLYN
FRESH CREEK NATURE PRESERVE
SPRING CREEK PARK
SHIRLEY CHISHOLM STATE PARK
CANARSIE PIER
CANARSIE PARK
PAERDEGAT BASIN PARK
JAMAICA BAY
MARINE PARK
FLOYD BENNETT FIELD
PLUMB BEACH
MARINE PARKWAY BRIDGE
ROCKAWAY INLET
JACOB RIIS PARK
FORT TILDEN
BREEZY POINT-TIP
ATLANTIC


FRANK CHARLES MEMORIAL PARK
QUEENS
JFK INTERNATIONAL AIRPORT
IDLEWILD PARK
JAMAICA BAY WILDLIFE REFUGE
JAMAICA BAY PARK
BAYSWATER POINT STATE PARK
NASSAU
NSET COVE
ROCKAWAY COMMUNITY PARK
CROSSBAY BRIDGE
ROCKAWAY BEACH
VERNAM BARBADOS PENINSULA
DUBOS PT WILDLIFE SANCTUARY
OCEAN
THE PARKS OF JAMAICA BAY & ROCKAWAY PENINSULA
NATIONAL PARK SERVICE
NEW YORK CITY PARKS
NEW YORK STATE PARKS

COMMON MILKWEED
Asclepias syriaca

Family: *Asclepiadaceae* (Milkweed)

Size: 3-5 ft

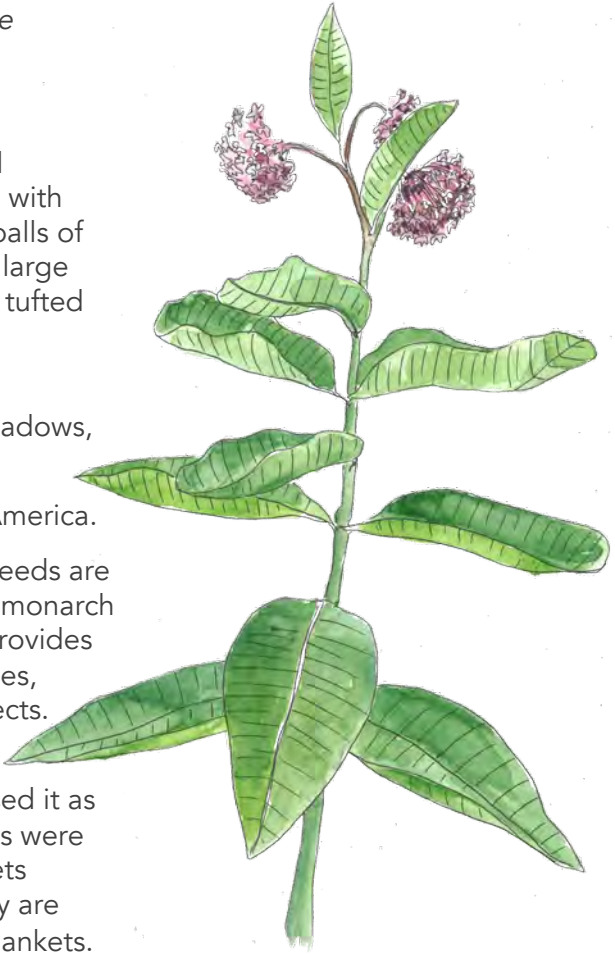
Description: Large and conspicuous milkweed with oval leaves and large balls of pinkish flowers. Forms large pods that contain silky tufted seeds.

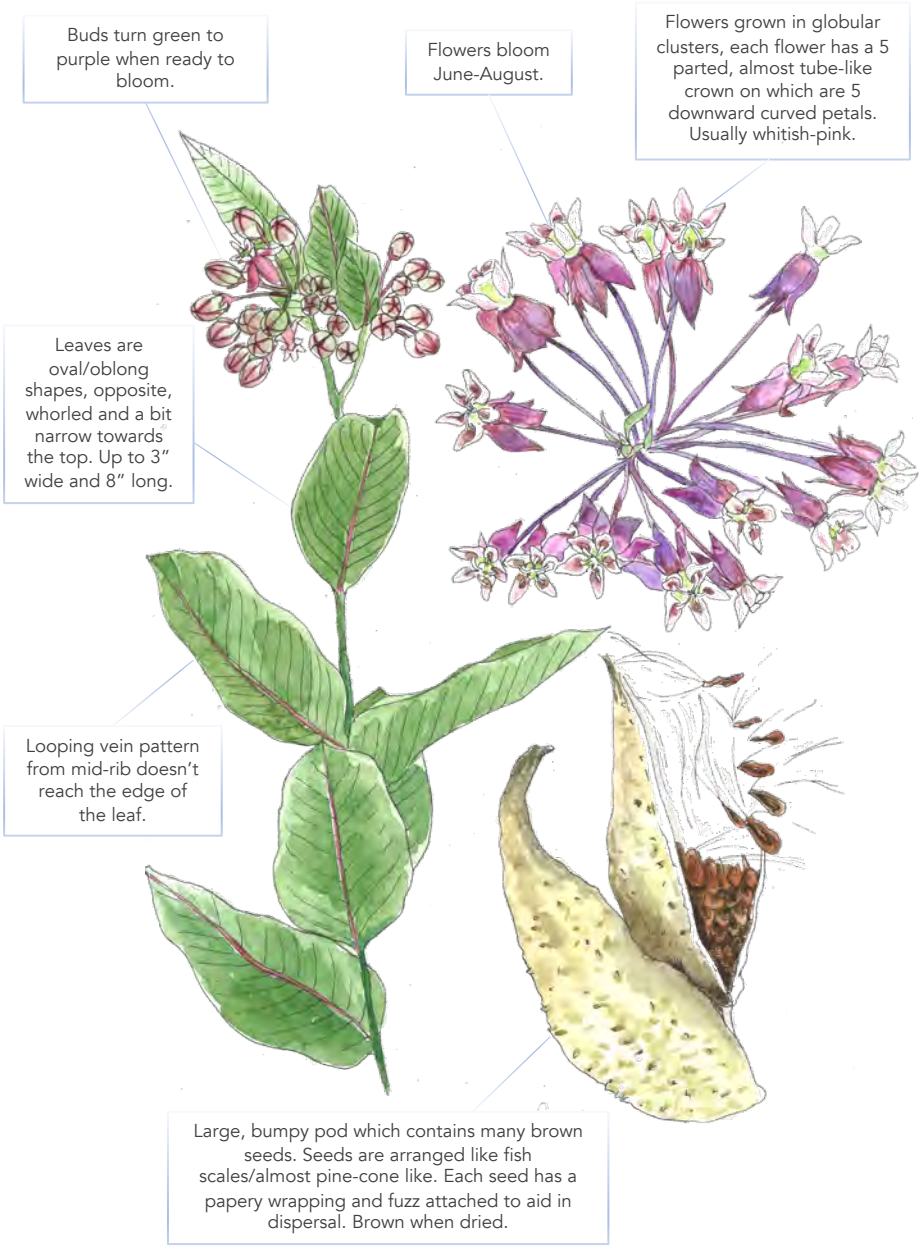
Habitat: Man-made or disturbed habitats, meadows, fields, forest-edges.

Native Range: North America.

Ecological Role: Milkweeds are the only host plant for monarch butterfly caterpillars. Provides food for butterflies, bees, beetles, and other insects.

Cultural Significance: Indigenous Peoples used it as a source of fiber. Seeds were used to make life jackets during WWII and today are used for pillows and blankets.




Buds turn green to purple when ready to bloom.
Flowers bloom June-August.
Flowers grown in globular clusters, each flower has a 5 parted, almost tube-like crown on which are 5 downward curved petals. Usually whitish-pink.
Leaves are oval/oblong shapes, opposite, whorled and a bit narrow towards the top. Up to 3" wide and 8" long.
Looping vein pattern from mid-rib doesn't reach the edge of the leaf.
Large, bumpy pod which contains many brown seeds. Seeds are arranged like fish scales/almost pine-cone like. Each seed has a papery wrapping and fuzz attached to aid in dispersal. Brown when dried.

BUTTERFLY MILKWEED
Asclepias tuberosa

Family: *Asclepiadaceae* (Milkweed)

Size: 1-2 ft

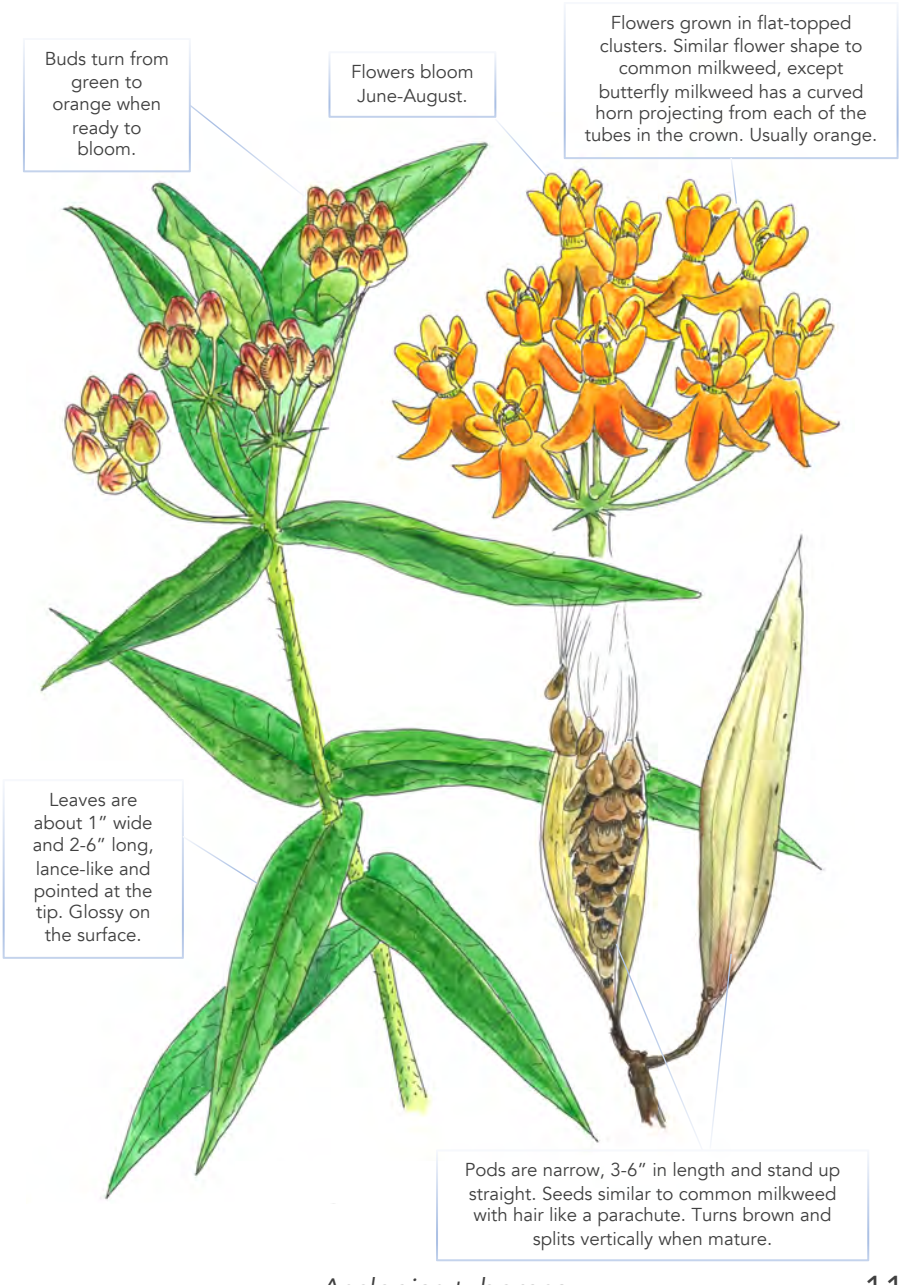
Description: A milkweed distinguished by its alternate leaves, brilliant yellow-orange flowers, and clear (rather than milky) latex in stems.

Habitat: Man-made or disturbed habitats, meadows, fields, forest-edges.

Native Range: Eastern and Central North America.

Ecological Role: Milkweeds are the only host plant for monarch butterfly caterpillars. Provides nectar for many pollinators including bees, butterflies, beetles, and moths.

Cultural Significance: Used to relieve pain and inflammation, long historical use by Indigenous Peoples as a medicinal plant for a range of ailments.



Asclepias tuberosa

QUEEN ANNE'S LACE
Daucus carota

Family: *Apiaceae/Umbelliferae (Carrot)*

Size: 1-5 ft

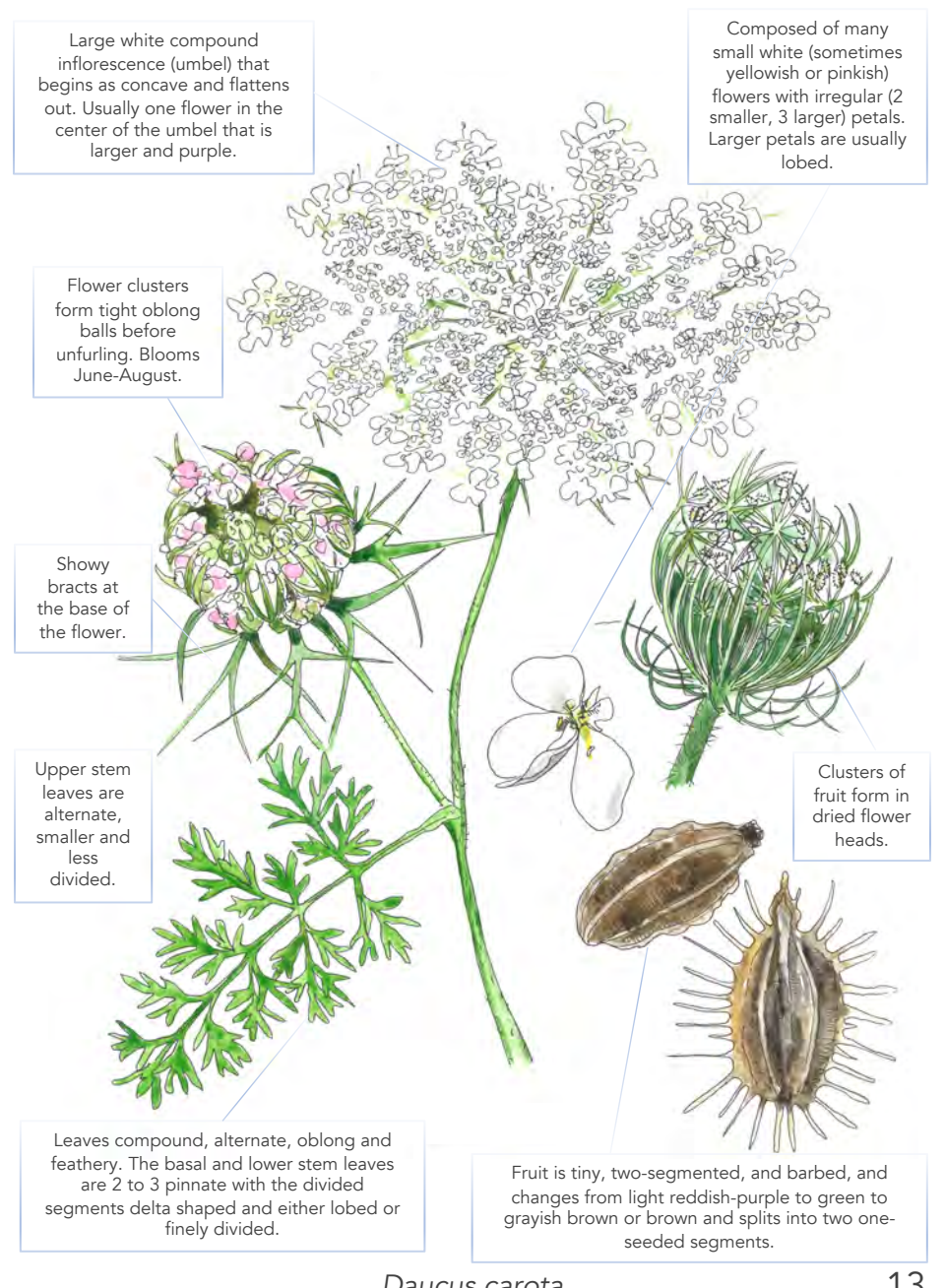
Description: An erect biennial with a large white inflorescence and hairy, hollow stems. The first year it produces a leafy rosette and the second year it produces a flower stem. Also known as wild carrot.

Habitat: Man-made or disturbed habitats, meadows, and fields.

Native Range: East Asia and Europe, introduced to North America.

Ecological Role: Considered a beneficial plant in its native Asian and European habitat.

Cultural Significance: Introduced from Europe as a medicinal herb, relative of the domesticated carrot, has slender white taproot that is edible but grows woody and fibrous with age. (Resembles poison hemlock so take care when identifying).


Large white compound inflorescence (umbel) that begins as concave and flattens out. Usually one flower in the center of the umbel that is larger and purple.
Composed of many small white (sometimes yellowish or pinkish) flowers with irregular (2 smaller, 3 larger) petals. Larger petals are usually lobed.
Flower clusters form tight oblong balls before unfurling. Blooms June-August.
Showy bracts at the base of the flower.
Upper stem leaves are alternate, smaller and less divided.
Clusters of fruit form in dried flower heads.
Leaves compound, alternate, oblong and feathery. The basal and lower stem leaves are 2 to 3 pinnate with the divided segments delta shaped and either lobed or finely divided.
Fruit is tiny, two-segmented, and barbed, and changes from light reddish-purple to green to grayish brown or brown and splits into two one-seeded segments.

SPOTTED JOE-PYE WEED
Eutrochium maculatum

Family: *Asteraceae/Compositae (Aster)*

Size: 3-6 ft

Description: Tall wetland obligate with large pinkish-purple flower head containing only disk flowers and sometimes purple spotted stems.

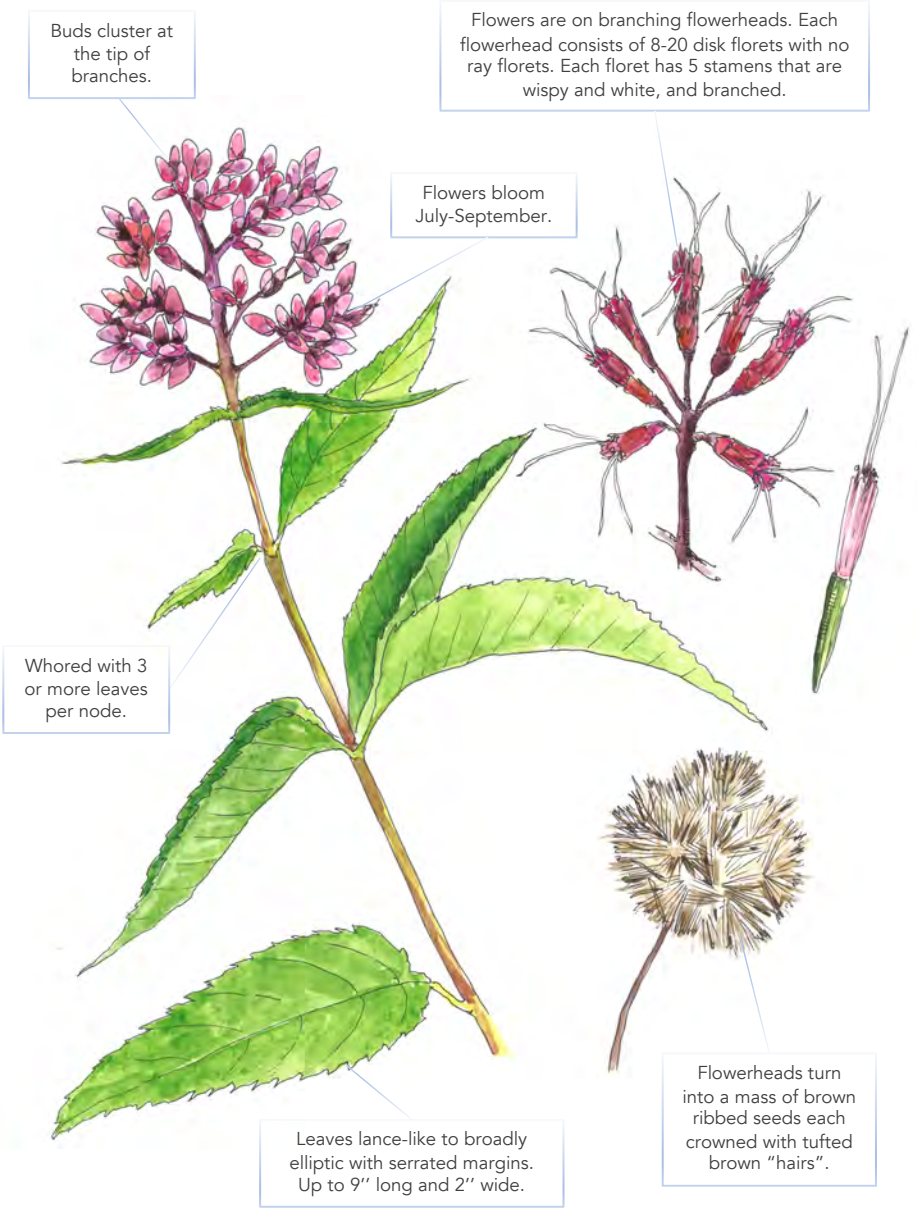
Habitat: Man-made or disturbed habitats, marshes, meadows, fields, river and lake shorelines, swamps, wetland edges.

Native Range: Central, Eastern, and parts of Western North America (more Northern distribution).

Ecological Role: Purple blooms attractive to butterflies, especially swallowtails.

Cultural Significance: Indigenous Peoples used it to break a fever and for other medical uses. Benefits are concentrated in the roots. Stems can be used as straws.

Eutrochium maculatum



Eutrochium maculatum

ROUND-HEADED BUSH CLOVER
Lespedeza capitata

Family: *Fabaceae/Leguminosae (Pea)*

Size: 2-4 ft

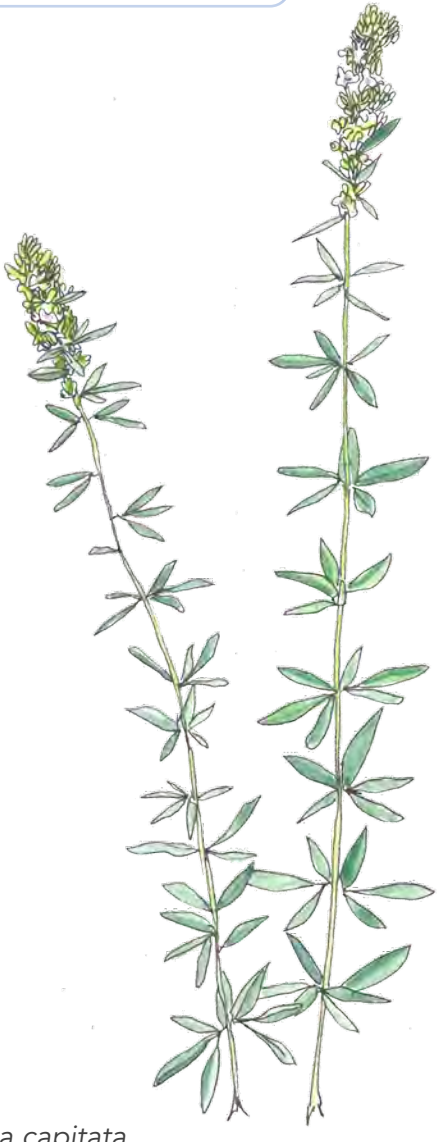
Description: Perennial with rigid stems that have fine hairs and usually do not branch below the inflorescence. Easy to spot in the fall and winter due to stature and persistent seed heads.

Habitat: Man-made or disturbed habitats, grassland, meadows, fields, and woodlands. Prefers sunny and dry locations.

Native Range: Central and Eastern North America.

Ecological Role: Seeds provide food for birds and other wildlife. Mammalian herbivores eat it in all growth stages and caterpillars of several moths feed on foliage. Flowers are mainly pollinated by bees.

Cultural Significance: Root used by Indigenous Peoples (specifically Meskwaki) as an antidote for poison.

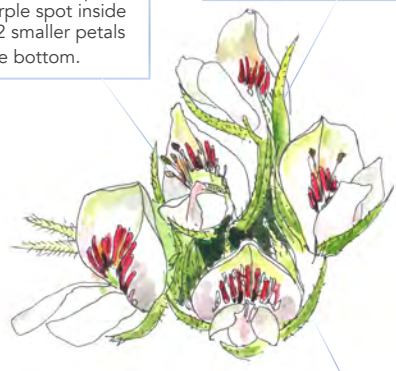


Lespedeza capitata

Densely packed clusters of green, hairy pointed buds.

Densely packed round clusters. Flowers are cup-like, have 3 petals – one larger petal at the top has a large purple spot inside of it, and 2 smaller petals at the bottom.

Calyx is hairy and has 5 lobes that come up high on the petals, usually only a few flowers per cluster are open.



Flowers bloom July-September.

Oval shaped, may be rounded on both ends, or slightly pointed at the tip. Vein through the middle. Smooth margins.

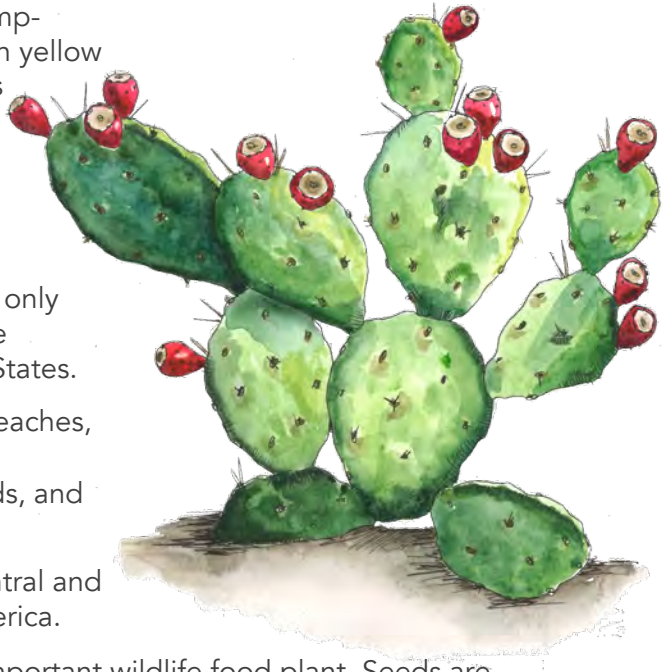
Calyx turns dark brown as fruit matures but does not split open. Fruit is a fuzzy pod which contains one seed.

Leaves are compounded in three and alternate.

EASTERN PRICKLY PEAR
Opuntia humifusa

Family: *Cactaceae (Cactus)*

Size: 8 in tall, 3 ft wide (clusters)



Description: A clump-forming cactus with yellow or red/pink flowers and flat fleshy green pads with clusters of small red/brown spines. Thrives in sandy habitats and is the only native cactus in the Northeast United States.

Habitat: Coastal beaches, dunes, grasslands, meadows and fields, and ridges.

Native Range: Central and Eastern North America.

Ecological Role: Important wildlife food plant. Seeds are dispersed when eaten by birds and several species of rodents. Highly drought tolerant.

Cultural Significance: Pads and fruit are edible. Pads must be prepared carefully for consumption, spines are toxic and irritable.

Buds develop along the upper curved margin of the cactus' pads. Buds are fleshy-scaly in appearance, green.

Flowers bloom June-July.

Radially symmetric flower. Very large, waxy yellow flowers often tinted red or pink in the middle, with multiple stamens surrounding the central pistil.

Fruits are large, fleshy and berry-like, and change from green to reddish-brown when mature. Seeds are flattened orbs 0.2" in diameter.

Pads are green, flat, fleshy and 3-4" in length and 1-3" wide with small clusters of red/brown spines. Can form longer spines.

HOARY MOUNTAIN MINT
Pycnanthemum incanum

Family: *Lamiaceae/Labiatae (Mint)*

Size: 3-6 ft

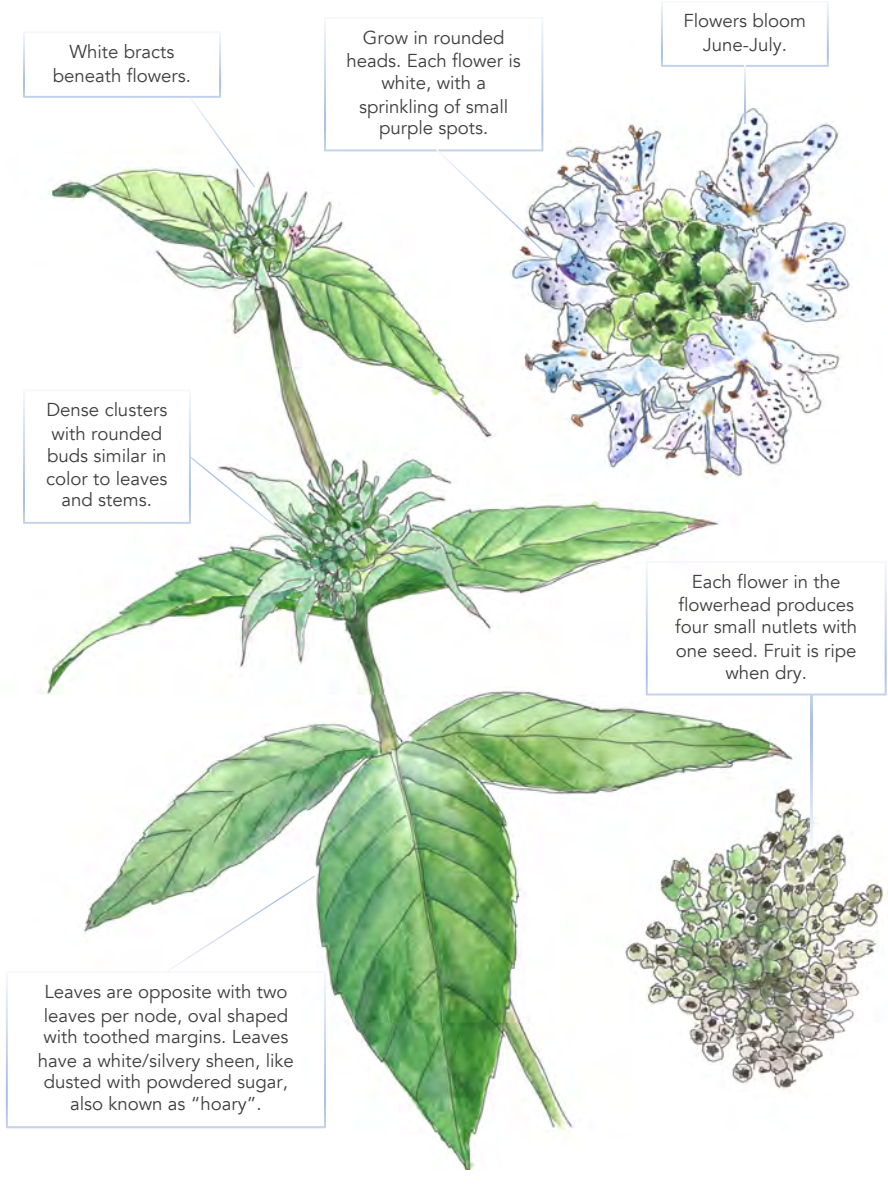
Description: A clump forming perennial mint with silver and white hairy leaves and bracts and a strong mint odor when crushed. Flowers form clumps on terminal ends of hairy square stems and branches.

Habitat: Cliffs and ledges, woodlands, forest edges.

Native Range: Eastern North America.

Ecological Role: Supports wavy-lined emerald moth (*Synchlora aerata*) larvae. Provides nectar for pollinators, especially smaller butterflies and short tongued bees and wasps that can access the small flowers.

Cultural Significance: Leaves have been widely used to flavor teas.



Pycnanthemum incanum

BLACK-EYED SUSAN
Rudbeckia hirta

Family: *Asteraceae/Compositae (Aster)*

Size: 1-3 ft

Description: Coneflower with showy yellow ray flowers and a brown central disk that can be a short lived annual, perennial, or a perennial. Thrives in a variety of habitats and conditions.

Habitat: Man-made or disturbed habitats, meadows, fields, and woodlands.

Native Range: North America (parts are introduced).

Ecological Role: Larval host plant for bordered patch (*Chlosyne lacinia*), gorgone checkerspot (*Chlosyne gorgone*), wavy-lined emerald (*Synchlora aerata*), and silvery checkerspot (*Chlosyne nycteis*). Nectar source for pollinators.

Cultural Significance: Indigenous Peoples used them for several salves and herbal mixtures. Common ornamental flower.


Buds have long hairy, pointed green bracts that surround yellow florets.
Flowers bloom June-October.
Flowers are 2-3" across with 8-20 yellow ray florets surrounding a black-brown disk composed of many small disk florets. Solitary long stalk with single flower head.
Lance shaped leaves with tiny teeth at margins, covered in coarse hairs, lighter green on the underside. Basal leaves wither away at flowering time.
Fertile disk florets form a tiny, seed-like fruit that changes from white to brown/black when ripe. Dispersed by wind shaking the seed head.

COMMON SOAPWORT
Saponaria officinalis

Family: *Caryophyllaceae (Carnation/Pink)*

Size: 1-3 ft

Description: An introduced and naturalized perennial with green hairless stems and white to pink 5 petaled flowers.

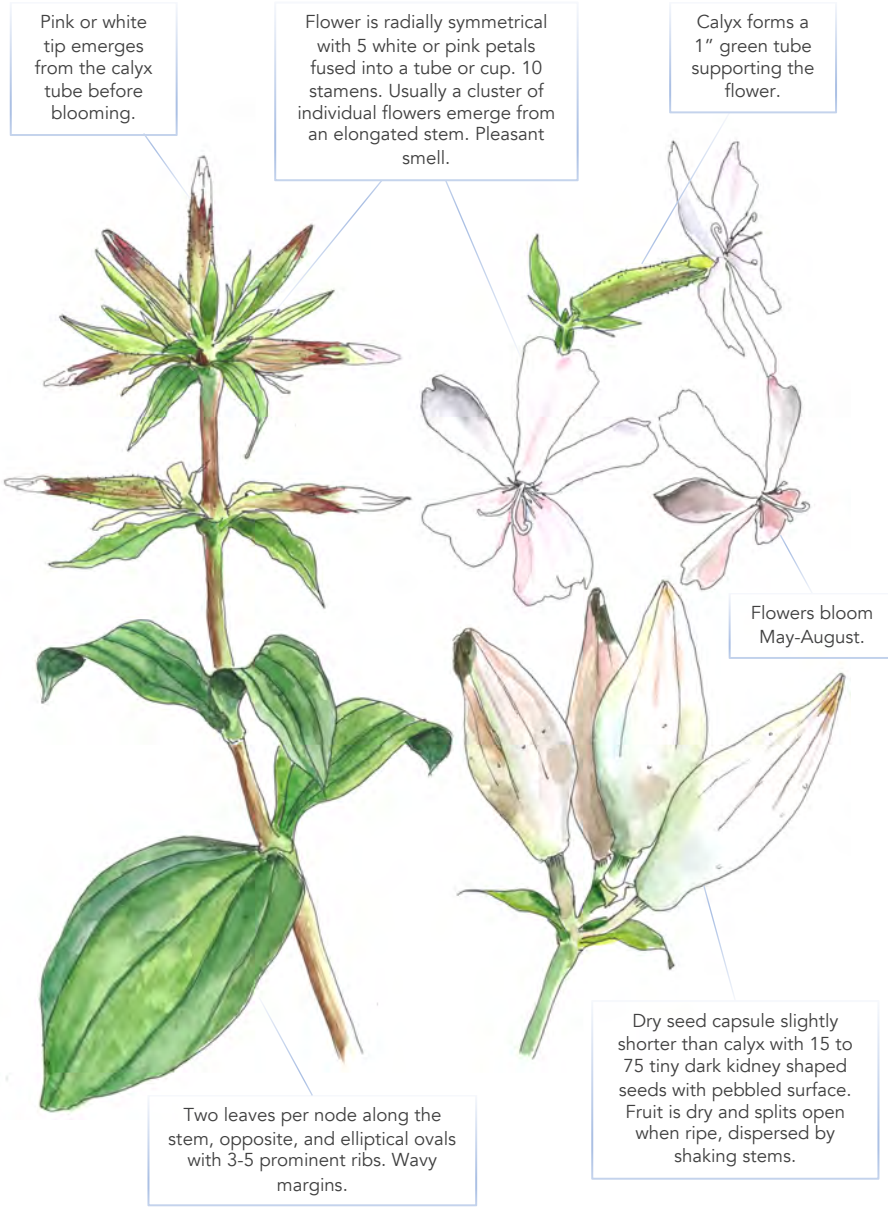
Habitat: Man-made or disturbed habitats, meadows, and fields.

Native Range: Asia and Europe, introduced to all of North America.

Ecological Role: Widely introduced outside of its native habitat, in some parts of North America it is considered a noxious weed and thrives in roadsides or other sites near human development.

Cultural Significance: Leaves contain chemical saponin which formerly was used to make a type of liquid soap because it lathers when used for washing.

Saponaria officinalis


Pink or white tip emerges from the calyx tube before blooming.
Flower is radially symmetrical with 5 white or pink petals fused into a tube or cup. 10 stamens. Usually a cluster of individual flowers emerge from an elongated stem. Pleasant smell.
Calyx forms a 1" green tube supporting the flower.
Flowers bloom May-August.
Dry seed capsule slightly shorter than calyx with 15 to 75 tiny dark kidney shaped seeds with pebbled surface. Fruit is dry and splits open when ripe, dispersed by shaking stems.
Two leaves per node along the stem, opposite, and elliptical ovals with 3-5 prominent ribs. Wavy margins.

SEASIDE GOLDENROD
Solidago sempervirens

Family: *Asteraceae/Compositae (Aster)*

Size: 3-6 ft

Description: Prominent goldenrod with bright yellow flower heads and distinctive fleshy and waxy leaves. Often seen along beaches and dunes.

Habitat: Coastal beaches, dunes, and marshes.

Native Range: East coast of North America.

Ecological Role: Leaves are adapted to retain water amid the drying effects of sea salt spray. Roots are a minimum of 14" long. Small but potent flowers attract monarch butterflies and other insects at the end of summer

Cultural Significance: Thomas Edison created rubber with the latex from seaside goldenrod. Has several medical uses and flowers can be used to make bright yellow dye.

Solidago sempervirens

NEW ENGLAND ASTER
Symphyotrichum novae-angliae

Family: *Asteraceae/Compositae (Aster)*

Size: 3-6 ft

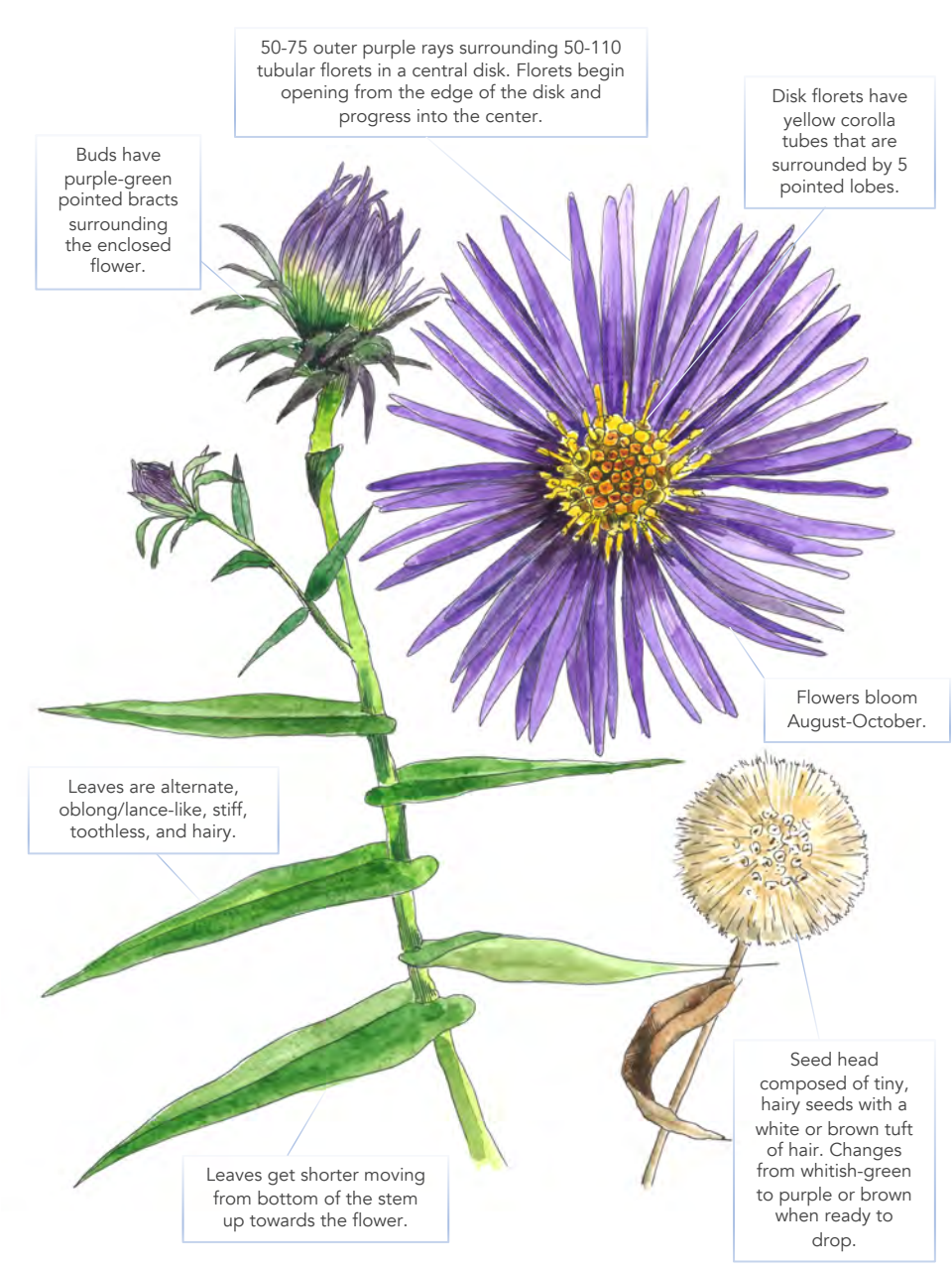
Description: A tall, showy, and perennial late-blooming aster with numerous blue-purple ray flowers. and a golden-yellow central disk flowers.

Habitat: Man-made or disturbed habitats, meadows, and fields.

Native Range: Eastern and Central North America, introduced outside native range.

Ecological Role: Important late-season food source for pollinators as it blooms through October and even through November.

Cultural Significance: Used by Indigenous Peoples to treat various ailments. Has over 50 human cultivars.


50-75 outer purple rays surrounding 50-110 tubular florets in a central disk. Florets begin opening from the edge of the disk and progress into the center.
Disk florets have yellow corolla tubes that are surrounded by 5 pointed lobes.
Buds have purple-green pointed bracts surrounding the enclosed flower.
Flowers bloom August-October.
Leaves are alternate, oblong/lance-like, stiff, toothless, and hairy.
Seed head composed of tiny, hairy seeds with a white or brown tuft of hair. Changes from whitish-green to purple or brown when ready to drop.
Leaves get shorter moving from bottom of the stem up towards the flower.

RED MAPLE
Acer rubrum

Family: *Aceraceae (Maple)*

Size: 50-90 ft

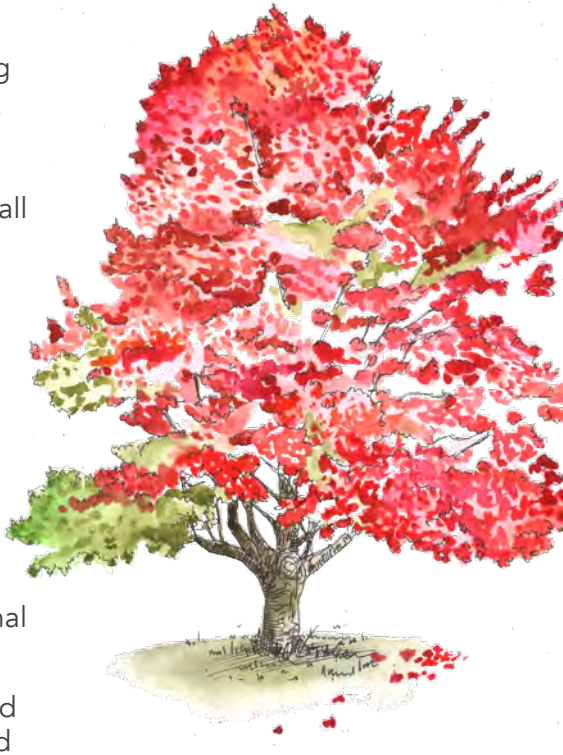
Description: Rapid growing maple that gets its name from its reddish buds in spring, red leaf petioles in summer, and brilliant red fall foliage.

Habitat: Forests, forest edges, meadows, fields, wetland margins.

Native Range: Central and Eastern North America.

Ecological Role: Provides browse (feeding material) for moose and other mammals. Early successional forest tree.

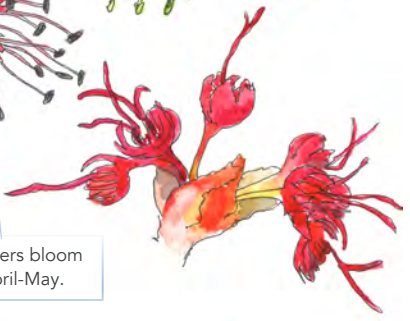
Cultural Significance: Wood can be used for veneer and small wood projects, although more difficult to work with than other types of maple.



A leaf bud is considered "breaking" once a green leaf tip is visible at the end of the bud, but before the first leaf from the bud has unfolded to expose the leaf stalk (petiole) or leaf base. Leaf tips may appear reddish.

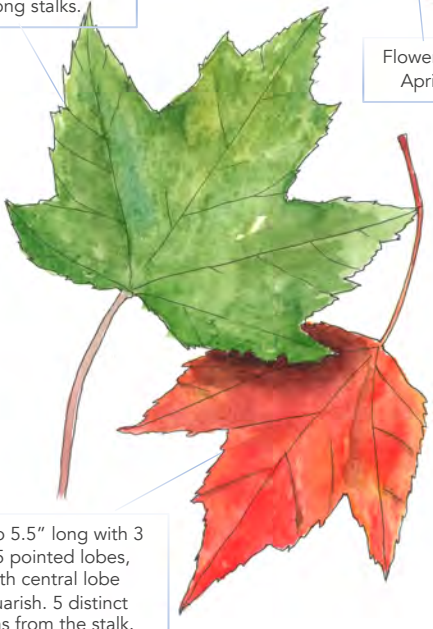
Separate male and female flowers (can be on the same tree). Flowers reddish or yellow and occur in dense clusters.

Flower buds appear before leaf buds.

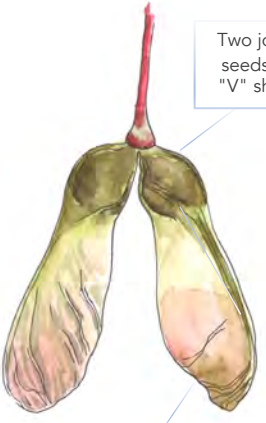


Simple, opposite, and smooth dark green leaves with long stalks.

Flowers bloom April-May.



Two joined seeds in a "V" shape.



Up to 5.5" long with 3 to 5 pointed lobes, with central lobe squarish. 5 distinct veins from the stalk. Sharply toothed. Turn red in fall.

Each seed has a wing that changes from green or red to tan or brownish and drops from the plant.

Acer rubrum

EASTERN RED CEDAR
Juniperus virginiana

Family: *Cupressaceae (Cyprus)*

Size: 10-40 ft

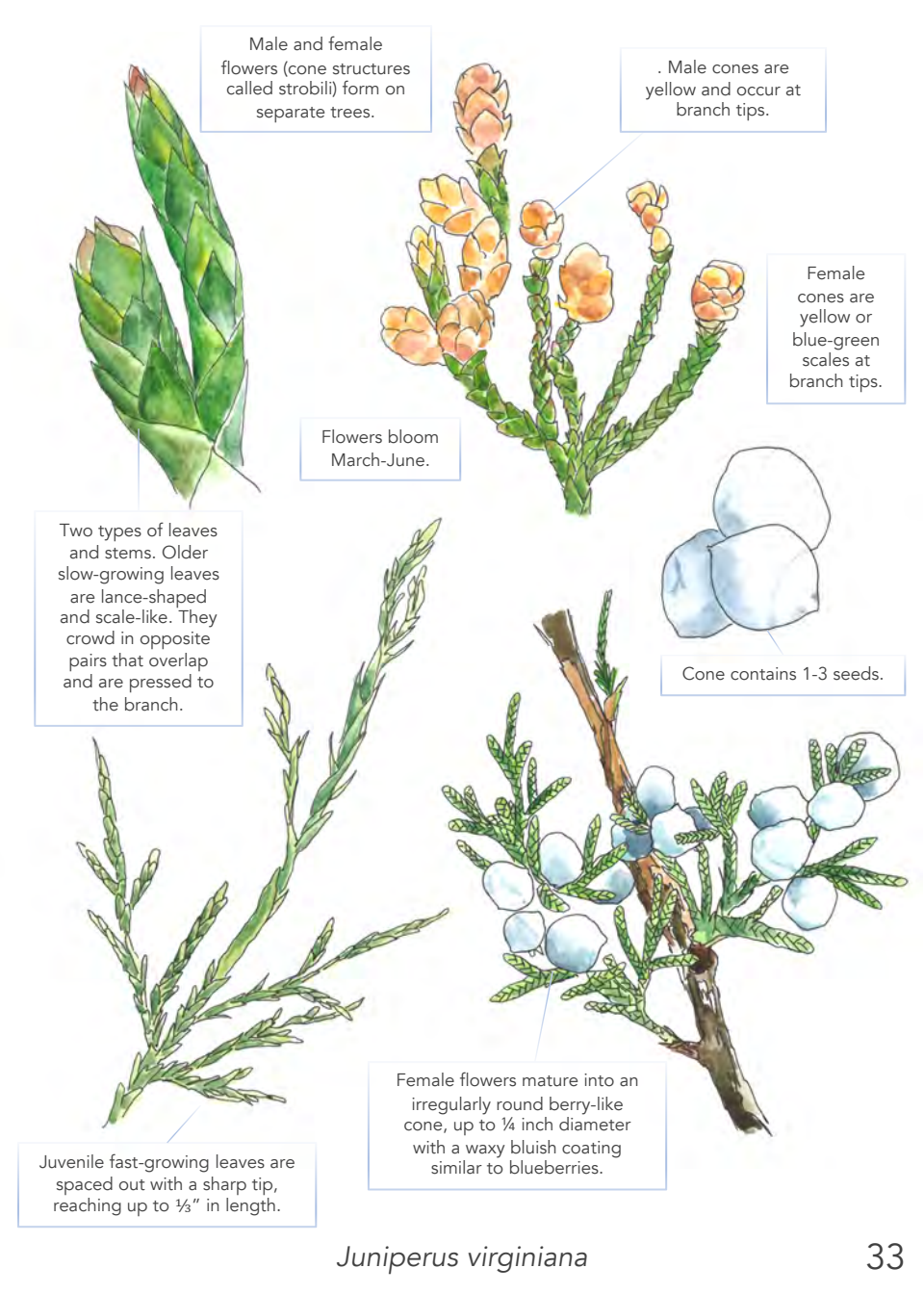
Description: A mid-sized conical evergreen tree with small scale-like needles and red-brown bark that forms long fibrous strips. Female trees produce round blue fruit in the fall.

Habitat: Terrestrial, prefers full sun.

Native Range: Central and Eastern North America.

Ecological Role: Birds, including cedar waxwing *(Bombycilla cedrorum)*, eat the blue berry-like cones. Commonly colonizes fields after agriculture is abandoned.

Cultural Significance: Hosts the apple-cedar rust, a fungus that forms galls on apples, leading to many trees to be felled to prevent transmission (favoring apple production). Used for cedar chests, fence post, and rail as it is rot resistant and repels insects.


Male and female flowers (cone structures called strobili) form on separate trees.
. Male cones are yellow and occur at branch tips.
Female cones are yellow or blue-green scales at branch tips.
Flowers bloom March-June.
Two types of leaves and stems. Older slow-growing leaves are lance-shaped and scale-like. They crowd in opposite pairs that overlap and are pressed to the branch.
Cone contains 1-3 seeds.
Female flowers mature into an irregularly round berry-like cone, up to ¼ inch diameter with a waxy bluish coating similar to blueberries.
Juvenile fast-growing leaves are spaced out with a sharp tip, reaching up to ⅓" in length.

NORTHERN BAYBERRY
Morella pensylvanica

Family: *Myricaceae (Bayberry)*

Size: 6-12 ft

Description: A small to medium sized shrub common along shorelines and dunes, its waxy blue-grey fruits are interspersed between clumps of waxy leaves.

Habitat: Man-made or disturbed habitats, dunes, woodland edges, thickets, and fields.

Native Range: East Coast and Gulf Coast of North America.

Ecological Role: Tolerates salt spray and a variety of wet-dry, hot-cold conditions. Larval host for Columbia silkmoth (*Hyalophora columbia*). Berries are eaten by many winter birds.

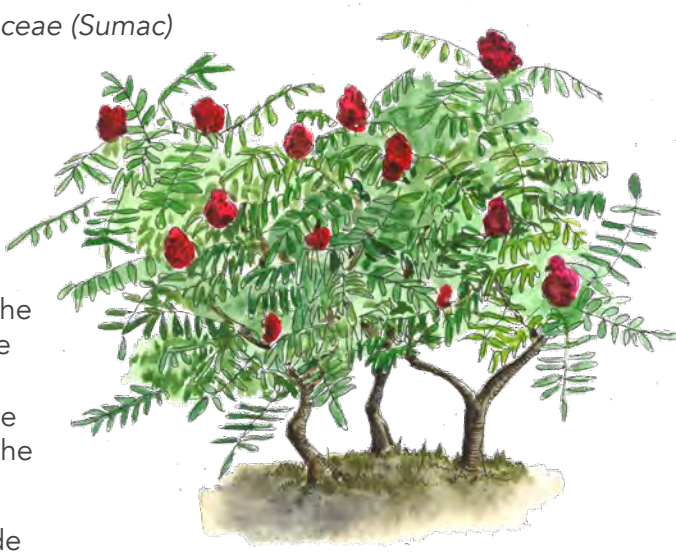
Cultural Significance: Waxy coatings on leaves can be used to make candles.

Buds are considered breaking once a green tip is visible from the bud.
Plants are either male or female. Both flowers are catkins (slim, cylindrical flower clusters with inconspicuous or no petals), ranging in color from yellow/green to red.
Flowers bloom July-October.
Male catkins are generally longer than females.
Female flowers form clusters of drupes with one seed each.
Dark green glossy leaves, sometimes slightly toothed at the tips and tapered in tear drop shape – broadly lance-like, up to 3" in length. Grow in dense bunches.
Fruits are green and covered in hairs when immature, blue-grey and waxy once mature.

WINGED SUMAC
Rhus copallinum

Family: *Anacardiaceae (Sumac)*

Size: 15-30 ft



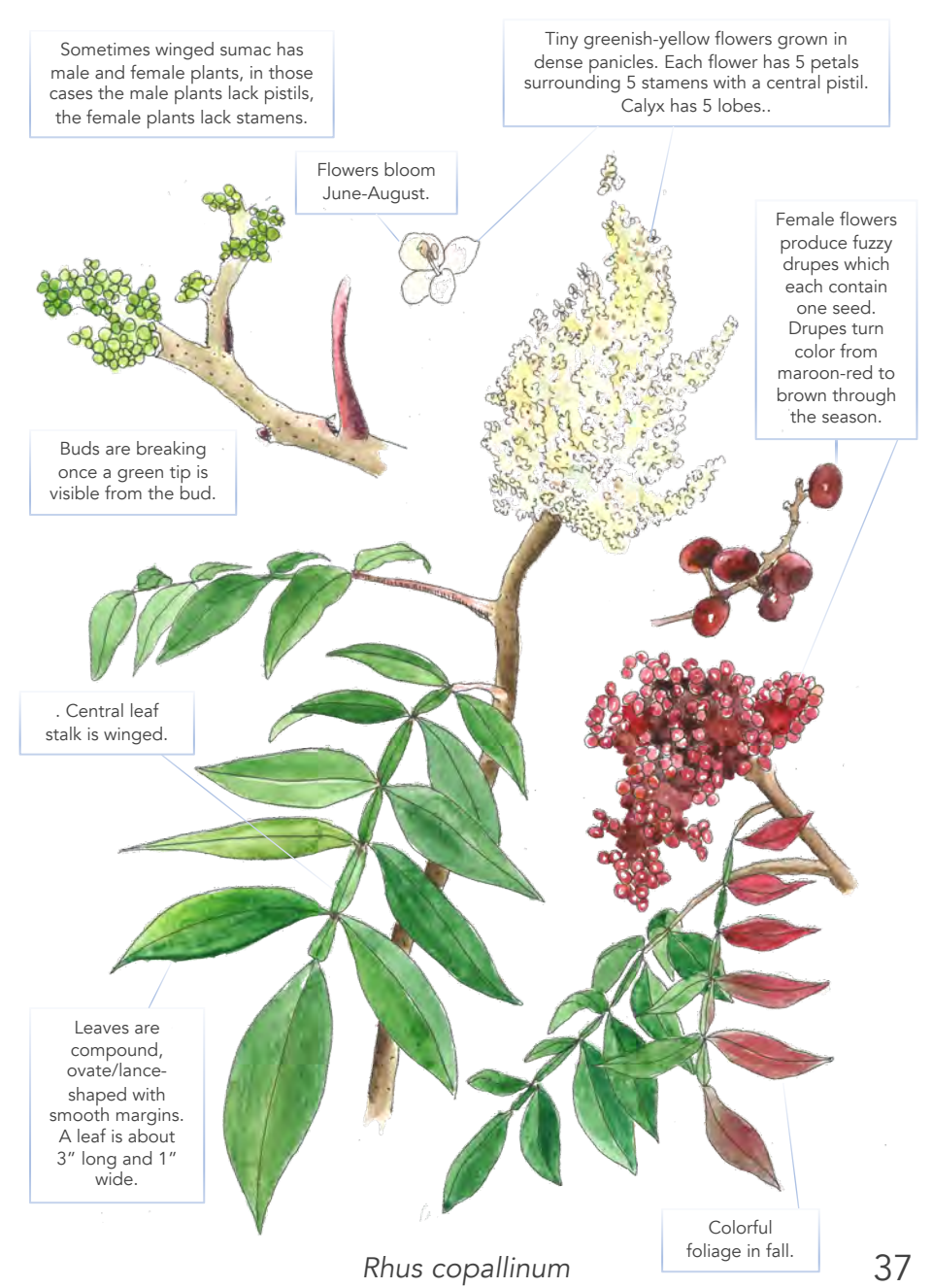
Description: A colony-forming deciduous shrub similar to *Rhus typhina*, distinguished by the central stem of the compound leaves having a distinctive "wing" between the leaflets.

Habitat: Man-made or disturbed habitats, forest edges, meadows and fields.

Native Range: Central and Eastern North America.

Ecological Role: Nectar for pollinators. Host plant for luna moth (*Actias luna*) and red-banded hairstreak (*Calycopis cecrops*). Fruits are a food source for birds and mammals.

Cultural Significance: Used for erosion control on slopes. Indigenous Peoples used it for a variety of uses including many medical purposes. Fruit can be soaked and strained to make a lemonade-like drink. Tannin-rich fruit, bark and leaves used to tan hides and create dyes. Beekeepers use seed heads as fuel for smokers.



Rhus copallinum

STAGHORN SUMAC
Rhus typhina

Family: *Anacardiaceae (Sumac)*

Size: 15-30 ft

Description: A colony-forming deciduous shrub with crooked, leaning, and branched trunks with large bright green compound leaves and velvety/hairy twigs. Forms conical clusters of fuzzy bright red berries.

Habitat: Man-made or disturbed habitats, forest edges, meadows and fields.

Native Range: Central and Eastern North America.

Ecological Role: Berries are a preferred food source for many birds and some mammals. Remains through the winter as it is a good emergency food source. Host plant for luna moth (*Actias luna*).

Cultural Significance: Indigenous Americans used it for a variety of uses including many medical purposes. Fruit can be soaked and strained to make a lemonade-like drink. Tannin-rich fruit, bark and leaves used to tan hides and create dyes. Beekeepers use seed heads as fuel for smokers.

Rhus typhina

COMMON BUMBLEBEE
Bombus impatiens

Family: *Apidae (Bee)*

Order: *Hymenoptera (Bee and Wasp)*

Size: 0.3-0.8 in

Description: One of the most often encountered bumble bees in North America, abundant from March through November. Forms large colonies and is widely used in agriculture as a pollinator.

Habitat: Very general, including intensively farmed areas, suburbs, and highly urban areas.

Native Range: Eastern North America.

Ecological Role: Considered one of the most important pollinators in North America. Social bees communicate using touch vision, pheromones, and wing vibrations. Adults chew pollen grains with saliva to produce honey (which is eaten by queen and larvae).

Cultural Significance: Used commercially as pollinators, widely used outside its native range as a greenhouse pollinator in California and Mexico.

Eggs laid in clumps all over the inside of the underground nest. Laid by a single queen, although workers have the ability to lay eggs as well.

Pupae within silk cocoons spun by then-larvae, adults emerge in 2 weeks.

Larva is a pale legless grubs 1" long. Taken care of by adult bees in the nest, rarely seen.

Adults have short pale-yellow hairs on thorax and black hair on head abdomen and legs. Male bees have yellow faces, females have black faces. Females are larger than males. Queen bees are the only female to mate. Max lifespan of 1 year.

Bombus impatiens

MONARCH BUTTERFLY
Danaus plexippus

Family: *Nymphalidae (Medium and Large Butterfly)*

Order: *Lepidoptera (Butterfly and Moth)*

Size: wingspan 3-4 in

Description: A large orange and black butterfly that migrates 1200 - 2800 miles every year across the Americas. Caterpillars are yellow-black-white striped and feed on milkweed plants.

Habitat: Open habitat, frost intolerant, dense tree cover for overwintering.

Native Range: North and South America (migrates South during colder months).

Ecological Role: Larvae require milkweed as a host plant. Poisonous to vertebrates because of the milkweed they feed on. Important pollinators and feed on nectar from a variety of flowers.

Cultural Significance: One of the most iconic insects in North America. Considered souls of ancestors by forest communities in Mexico, important in rituals and traditions for Indigenous Peoples across North America.

Adults are large and conspicuous with black veins on orange wings. Distinctive gliding "V" shaped flight.

Males have black scent-scale patches on hind wings.

Caterpillars form a hanging case, called a chrysalis, usually brown, green, or transparent in color when the caterpillar undergoes metamorphosis.

Small whitish ribbed eggs laid on milkweed plants.

Caterpillar is striped black, white, and yellow with a pair of black filaments on both ends. Typically 5 instars.

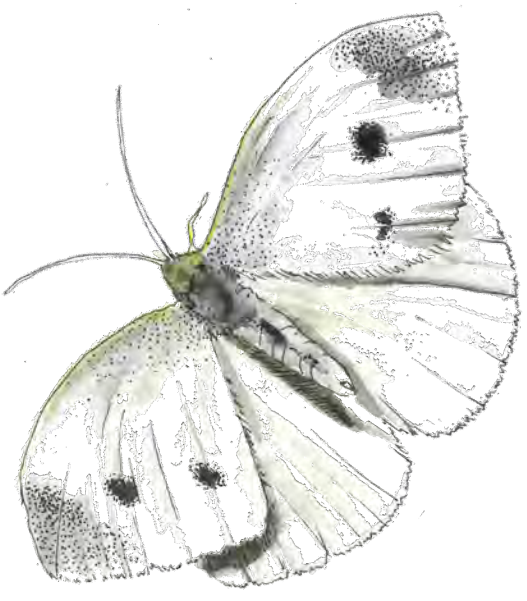
Danaus plexippus

COMMON CABBAGE WHITE
Pieris rapae

Family: *Pieridae*

Order: *Lepidoptera (Butterfly and Moth)*

Size: wingspan 1.3-1.9 in



Description: Predominantly white small butterfly, introduced to North America, with a black area near the tip of each forewing and a small black spot on the front edge of the wing.

Habitat: All habitats, prefers open spaces.

Native Range: Europe, introduced to all areas of the world.

Ecological Role: Pollinators and nectar feeders. Caterpillars feed on plants in the Brassica genus (including their namesake, cabbage). Predated on by several species of insect including wasps, shield bugs, and hoverflies.

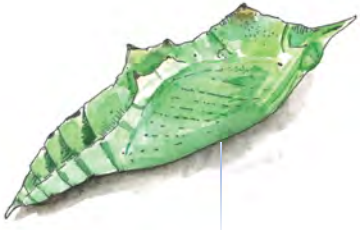
Cultural Significance: Introduced to North America, in Montreal, in the 1860s. Caterpillars are crop pests and are damaging to their hosts, eating them down to the stems.

Tiny, ribbed, bullet-shaped eggs are initially white, becoming yellow as they develop, and are typically found on the underside of leaves of plants in the mustard family.

The female has two black spots on each forewing while the male has only one.

Adults live for roughly 3 weeks.

Caterpillars are green and covered with short, white hairs. Older caterpillars have a narrow, yellow stripe down their back and a broken yellow stripe along each side.



Pupa hang from plants or other outdoor surfaces.

Pupa is green, yellow, mottled gray or brown in color with pale-edged, black-tipped, ridged projections on one side.

APPLE SPHINX MOTH
Sphinx gordius

Family: *Sphingidae (Sphinx/Hawk Moth)*

Order: *Lepidoptera (Butterfly and Moth)*

Size: wingspan 2.5-4 in

Description: Large brown and gray sphinx moth with variable color and markings present mainly from May-September. Fast flying with heavy bodies and narrow wings.

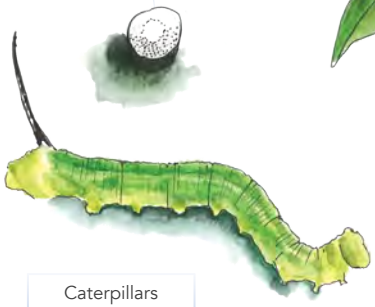
Habitat: Coastal areas and deciduous forests.

Native Range: Central and Eastern North America.

Ecological Role: Caterpillar host and a variety of trees including apple and white spruce. Adults feed on nectar from flowers including common soapwort.

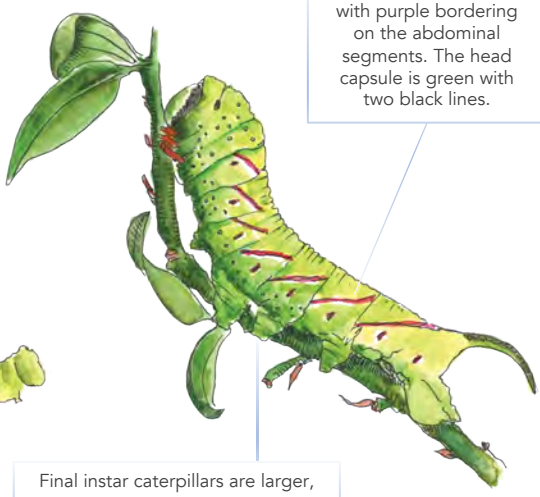
Cultural Significance: Most common sphinx moth encountered in New York can be spotted flying around lamp posts and outside light due to its nocturnal behavior.

Eggs laid on the leaves of host plants, usually on the underside.



Caterpillars can be green or brown/black in color.

There are 7 white lines with purple bordering on the abdominal segments. The head capsule is green with two black lines.



Final instar caterpillars are larger, full-looking, and sometimes do not have horns or reduced horns.

Caterpillars pupate in burrows in soft soil. Dark brown color.

Forewing ranges from brown with black borders through brownish gray with paler borders to pale gray with no borders. Hindwing is gray to yellow-gray with a black border and a black median line which ranges from distinct to diffuse.

Adult color and markings are highly variable. Fringes on the forewing are mostly black with some white, those on the hindwing are mostly white with a few black patches.

Sphinx gordius

EASTERN CALLIGRAPHER FLY
Toxomerus geminatus

Family: *Syrphidae (Hoverfly)*

Order: *Diptera (Fly)*

Size: 0.25-0.75 in

Description: A common hoverfly with distinctive black and yellow abdomen and large reddish brown eyes present April-November. Hoverflies are a large genus with over 100 species found in North America that resemble a miniature wasp or bee. They do not sting and can be observed hovering around flowers they drink nectar from.

Habitat: Forests, meadows, fields, savannas, marshes, bogs, and fens.

Native Range: North America.

Ecological Role: Larvae feed on a variety of aphids and mites, and therefore an important predator for some plants.

Cultural Significance: Hoverflies resemble small wasps or bees although they are only harmless mimics and do not bite or sting humans.

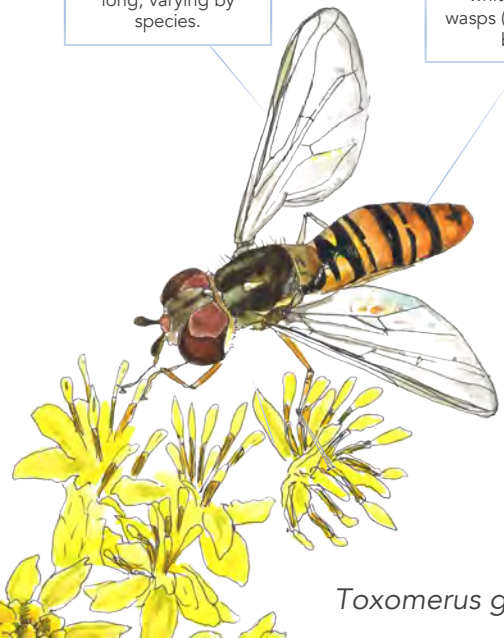
Eggs commonly occur singly near food for the emerging larvae.

Eggs are oblong, slightly curved, gray to white, and about 1/25 inch or less in length. The underside is flattened and the top and sides are convex.

Larvae of most species are maggot-like without true legs and taper towards the head. Coloration is commonly brown, greenish, pink, or whiteish.

In general, hoverflies are robust to slender flies 1/8 to 1 inch long, varying by species.

The body of many adults is black with bands or stripes of orange, yellow, or white, resembling stinging bees or wasps (flies have one pair of wings while bees and wasps have two).



Pupation occurs within the integument of the last instar, which hardens and becomes teardrop-shaped in most species.

Toxomerus geminatus

GLOSSARY

adaptation: The process of change where an organism (plant, animal, or other) becomes better suited to its environment.

alternate (leaves): Only one leaf per node along the stem.

biennial: A plant with a two-year lifespan. Typically the first year the plant is immature and the second year the plant matures and produces flowers and seeds.

bract: a modified leaf, usually associated with a reproductive structure such as at the base of a flower.

calyx: a collection of sepals of a flower that form a cup like structure surrounding the petals and enclosing the bud.

catkin: a slim, cylindrical flower cluster or spike with inconspicuous or no petals, usually wind pollinated.

climate (climatic): the weather conditions present in an area over a long period of time.

composite (flower): a flowerhead that is made up of a number of smaller individual flowers or florets.

compound (leaf): a leaf with more than one leaflet above the stem. Compound leaves are typically pinnate or bipinnate.

corolla: also known as the petal.

disk floret: a tube floret in the center of a composite flowerhead.

drupe: a fleshy fruit with a central stone containing the seed.

floret: one of the small flowers making up a composite flowerhead.

fruit: a mature ripened ovary with the contents of the ovary.

inflorescence: the complete flowerhead of a plant including stems, stalks, bracts, and flowers.

instar: stage in insect larva development between two periods of molting.

larva (pl. larvae): the immature form of an insect, forms the stage between the egg and the adult.

lobed: A leaf having large protrusions, spiked or rounded.

migration: The seasonal movement of animals to and from different regions.

opposite: Two leaves per node along the stem.

outcompete: To surpass or displace another species for access or use of resources such as space and food.

panicle: A loose branching cluster of flowers.

perennial: A plant that occurs each year, or simply a plant that lives longer than two years.

petiole: A stalk that joins a leaf to a stem.

pinnate (of compound leaf): Having leaflets arranged on either side of the stem.

pollinate: To bring pollen to, or deposit pollen on a plant (flower) to allow for fertilization.

pollinator: An organism that brings pollen from one part of the flower to another that aids in fertilization or pollination.

pupa (pl. pupae): An insect in its static immature phase between pupa and adult.

ray floret: A strap shaped, and typically sterile, floret that makes up the rays of a composite flowerhead.

sepal: The parts of a calyx that enclose the petals of a flower.

tannin: A group of naturally occurring molecular compounds that are found in wood, bark, leaves, and roots of many plants. Used in tanning leather, dying fabric, flavoring beverages, and in the medical field.

thorax (in insects): The midsection of an insect's body, central between the head and abdomen. The six legs and wings (if present) attach here.

toothed (leaves): A type of leave margin that has small points along it, a serrated or spiky edge.

SKETCHES

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Common Plants and Pollinators in

JAMAICA BAY & ROCKAWAY

A FIELD GUIDE

Common Plants and Pollinators in Jamaica Bay and Rockaway: A Field Guide is a guide to some of the plants, native and non-native, and pollinators that can be found in Jamaica Bay and Rockaway in New York City.

The plants in this guide are currently being monitored by National Park Service and Jamaica Bay-Rockaway Parks Conservancy educators at the Jamaica Bay Wildlife Refuge.

Jamaica Bay – Rockaway Parks Conservancy

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