

# Delcastle Field Guide

Class of 2008

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fellow.

**Scientific name** – the recognized Latin name given to an organism,  
consisting of a genus and species, according to a taxonomy

**Simple** – leaves with only a single blade (compare to compound)

**Species** – the major subdivision of a genus or subgenus, regarded as the  
basic category of biological classification, composed of related  
individuals that resemble one another, are able to breed among  
themselves, but are not able to breed with members of another  
species

**Symbiosis** – The living together of two dissimilar organisms, as in  
mutualism, commensalism, amensalism, or parasitism.

**Tolerant** – Capable of withstanding effects

**Tooth** – a leaf with small pointed ridges around its edge

**Vascular Tissues** – containing vessels that carry or circulate fluids, such  
as blood, lymph, or sap, through the bodies four basic types of  
tissue: muscle, nerve, epidermal, and connective.

**Versatile** – capable have or adapted for turning easily from one to  
another of various tasks, fields of endeavor

**Vertebrates** – Animals that have a spinal cord enclosed in a backbone

**Wingspan** – The total distance between the tips of the forewings when  
the wings are held open with the hind margins at right angles to the  
long axis of the body.

**Woody** – made of or containing or resembling wood; “woody plants”;  
perennial herbs with woody stems

**Natural selection** – The process in nature by which, according to Darwin’s theory of evolution, only the organisms best adapted to their environment tend to survive and transmit their genetic characteristics in increasing numbers to succeeding generations while those less adapted tend to be eliminated

**Niche** – the position or function of an organism in a community of plants and animals

**Omnivorous** – eating both animal and plant foods.

**Order** – the usual major subdivision of a class or subclass in the classification of organisms, consisting of several families

**Organism** – A living thing for example is an animal or plant.

**Ovipositor** – A tubular structure, usually concealed but sometimes extending outside the abdomen, with which many female insects deposit eggs.

**Parasitism** – a relation between organisms in which one lives as a parasite on another.

**Perennials** – Lasting or active through the year or through many years.

**Pheromones** – A chemical secreted by an animal, especially an insect, that influences the behavior or development of others of the same species, often functioning as an attractant of the opposite sex.

**Pupa** – an insect in the nonfeeding, usually immobile, transformation stage between the larva and the imago.

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## OVERVIEW AND HOW TO PAGE

The Delcastle Technical High School Advanced Biology classes of Fall 2007 decided to create a field guide. The field guide was to include all the common and not so common species of plants and animals found in the back woods of the Delcastle property. This book is the culmination of the hours spent inside and outside the classroom classifying plants and animals, writing essays, creating entries, and putting it all together.

In this field guide you'll find three different sections. The first section is a collection of essays that students wrote that either explains all the information needed to understand this field guide or express our feelings as a class toward several issues. The second section contains all the information on the plants and animals found on the Delcastle campus. The information is split into the different segments and then further organized for your convenience. The Animal segment is split into invertebrates, spiders, insects, birds, mammals, fish, and reptiles. The Plant segment is split into herbaceous plants, vines, shrubs, and trees. The third section of this field guide contains all of our resources and a glossary. The glossary contains words that not all people may know but that are used in the information sections of this field guide.

To use this field guide first you'll have to know if you're specimen is an animal or plant. Then, go to that specific segment. If you know what category (fish or tree or vine, etc.) your specimen fits in then check there. If you don't then just go through and look at pictures and descriptions. Not all the animal and plants that occur at Delcastle are presented in this fieldguide. Hopefully future classes can work to make this fieldguide better and more complete.

## THE IMPORTANCE OF BIODIVERSITY

Biodiversity is a crucial factor in any environment because it helps maintain stability and sustain the natural life cycle that occurs within nature without any outside interference. As humans, we are not as connected to the environment as our ancestors were, but ignorance is not always bliss. We are blind to the fact that even though our technology enlightens us in many ways, when it comes to the environment, technology simply can not explain everything, and most times we end up

**Habitat fragmentation** – Habitat fragmentation is the separation of a landscape into various land uses (e.g., development, agriculture, etc.), resulting in numerous small, and disjunct habitat patches left for use by wildlife

**Herbaceous** – pertaining to, or characteristic of an herb

**Homeopathically** – small amount of drugs for treatment

**Insectivorous** – adapted to feeding on insects.

**Interbreeding** – the act of mixing different species or varieties of animals or plants and thus to produce hybrids

**Invasive species** – A species that is not natural to that environment and overtakes an area.

**Invertebrates** – Lacking a backbone or spinal column; not vertebrate

**Larvae** – the immature, wingless, feeding stage of an insect that undergoes complete metamorphosis

**Lobed** – divided into incompletely separated sections; often rounded

**Metamorphosis** – A profound change in form from one stage to the next in the life history of an organism, as from the caterpillar to the pupa and from the pupa to the adult butterfly.

**Mutualism** – a relationship between two species of organisms in which both benefit from the association

**Naiad** – aquatic larvae the juvenile form of the dragonfly, damselfly, or mayfly

**Native/non-native** – Existing in or belonging to one by nature

**Cultivated** – to prepare and work on (land) in order to raise crops

**Dorsal** – Pertaining to the back, or situated near to or on the back

**Ecosystem** – a system formed by the interaction of a community of organisms with their environment

**End buds** – they can be either true or false; a true end bud actually lies on the end of twig while a false end bud occurs in some species when the end bud is shed and a nearby side bud acts as the end bud (a scar mark will be present on the end of the twig in the case of the false end bud)

**Endemic/indigenous** – Native to a particular region or environment but occurring naturally in other places as well

**Environment** – the air, water, minerals, organisms, and all other external factors surrounding and affecting a given organism at any time

**Eukaryotic** – Cells with organelles

**Family** – the usual major subdivision of an order or suborder in the classification of plants, animals, fungi, etc., usually consisting of several genera

**Frugivorous** – fruit eating

**Fungi** – Microscopic plants that live in damp wood and cause mold, stain, and decay.

**Habitat** – the natural environment of an organism; place that is natural for the life and growth of an organism

creating more damage than helping. Although our surrounding species cycle off in a life circle, the only way that it can keep “the balance” is if outside interferences, such as our technology and even entertainment like hunting, are not becoming a nuisance by overpowering and exceeding the numbers that need to die off.

Biodiversity in an environment is important because having many different species in a community can be pivotal for the survival or revival of an environment after a disturbance. Biodiversity helps a larger number of species survive after different plagues or diseases because there is a larger number to wipe out in the first place. Going back to Darwin’s theory of natural selection, mutations play a very big role in the immunizations of diseases. Having larger populations with many different species within that area increases the chances of many different mutations being present, which in turn makes it more difficult for a single disturbance to wipe out the entire ecosystem.

Every single organism plays a significant role within the community of which it is a part. Having known that, even the slightest change such as wiping out a population of a certain insect can make its way up the food chain and start killing off even the biggest predators. With such imbalance everything would fall apart, and once things start dying off, such as crops, our way of life as we know it would change forever.

So many different organisms are what allow us to survive. Different organisms create economic stability, and some even provide health cures and food for us. What if the cure to cancer or AIDS lied within one single plant species? And our pollution or carelessness was the reason that the plant became extinct. Our future health could be at risk because of the ignorance of people.

However insignificant biodiversity seems, it actually plays a very big role not only in the deer or the fish or insects lives, but also in ours. With the extinction of biodiversity could result the extinction of us too.

## ADAPTATIONS & EVOLUTION

An adaptation is a trait that makes an animal better suited to its environment. There are two ways adaptation can occur either as a behavioral adaptation or a structural adaptation. A behavioral adaptation would be traveling in packs in order to be better protected from

predators. While a structural adaptation would be something like how a polar bear has white fur and black skin that protects the polar bear from the cold weather. Adaptation takes place over a long period of time and animals do not choose to adapt. The environment pressures it by survival of the fittest. For example an animal who lives in the forest is white but they're has been genetic variation where some of the animals are dark brown which makes them harder to spot so the animals with white fur die while the one's with dark brown fur stay alive and keep reproducing until all the one's with white fur die out. This is an example of Natural selection.

Natural selection is Darwin's theory that is the process by which favorable traits that are heritable become more common in successive generations of a population of reproducing organisms, and unfavorable traits that are heritable become less common. For example, if an animal because of genetic variation develops camouflage and the other animals don't, but gradually the other animals die out and the ones with camouflage become predominant. Another example of natural selection is the plants that live in the desert developed traits some as some of them grow very long roots so they can be closer to water. While some of them don't have any leaves to save water, and in some cases some stay dormant for the dry seasons they spring to life in the wet seasons. While other desert plants that didn't get these traits through genetic variation die and eventually go extinct.

## SPECIES & SCIENTIFIC NAMES

Biology is the study of life. Biologist and other scientists that work with or study any type of living organisms classify and organize them by category via species. Species is the basic unit of classifying animals, insects, plants, and other living organisms throughout the biological field. A species is often defined as a group of organisms that are able to interbreed or produce fertile offspring. Other people base species off of organisms with similar DNA or similar traits. An example of a species is a dog, which is a different species from a wolf so therefore they have different common names and different scientific classifications. However a beagle and a golden retriever are still considered the same species because they are capable of interbreeding which is why they still

## GLOSSARY

**Adaptation** – the act of getting use to change

**Alfalfa** – A plant rich in protein

**Annual** – Lasting for one year

**Arthropods** – Any of numerous invertebrate animals of the phylum Arthropoda, including the insects, crustaceans, arachnids, and myriapods, that are characterized by a chitinous exoskeleton and a segmented body to which jointed appendages are articulated in pairs

**Biodiversity** – Diversity among and within plant and animal species in an environment.

**Biology** – The scientific study of life. Examines the structure, function, growth, origin, evolution, and distribution of all living things.

**Carnivorous** – Flesh-eating or predatory

**Classification** – The arranging of groups of organisms into sets or divisions on the basis of their evolutionary relationships

**Coloration** – appearance with regard to color arrangement or use of colors

**Community** – an assemblage of interacting populations occupying a given area

**Compound** – leaves composed of 2 or more leaflets; to determine which structure is the leaf and which is the leaflet, check the base of the stem -- there will be remnants of buds present at the base of a leaf but not a leaflet

## RESOURCES

Want to learn more about:

### ANIMALS-

- <http://animaldiversity.ummz.umich.edu/site/index.html>
- <http://www.sciencenetlinks.com/Esheet.cfm?DocID=103>
- [http://cas.bellarmine.edu/tietjen/animal\\_diversity.htm](http://cas.bellarmine.edu/tietjen/animal_diversity.htm)

### PLANTS-

- <http://www.geocities.com/RainForest/6243/diversity.html>
- <http://www.nmnh.si.edu/botany/projects/cpd/>

### BIODIVERSITY-

- <http://www.globalissues.org/Envlssues/Biodiversity.asp>

### FUNGIS-

- [http://www.botany.hawaii.edu/faculty/wong/BOT135/Lect03\\_a.htm](http://www.botany.hawaii.edu/faculty/wong/BOT135/Lect03_a.htm)
- <http://www.perspective.com/nature/fungi/>
- <http://www.herbarium.usu.edu/fungi/FunFacts/factindx.htm>

### ECOSYSTEMS-

- <http://www.fi.edu/tfi/units/life/habitat/habitat.html>
- <http://www.nhptv.org/NatureWorks/nwepecosystems.htm>

have the same scientific classification. An example of a scientific classification would be *Canis Lupus*, Which would mean gray wolf.

Scientific classification is the way biologist and scientists in general identify and categorize species of living things. The technical term for scientific classification is scientific taxonomy. Throughout periods of time there have been several methods for scientific classification, however the most current is the use of binominal names. In this modern form of taxonomy a species is often classified by assigning a species a certain name with the use of two words. The first word is the genus name, for example *Canis* is used for the dog / canine family. Some animals in the *Canis* genus are dogs, wolves, jackals, and sometimes—in older classifications of the fox. The second name is a term to directly describe the species like *lupus* would describe wolf. Biologist give binominal names because it can be used as a universal language, So if two scientist are talking they can get an easier understanding because both scientist would understand that *Canis Lupus* is a gray wolf. Scientific classification is an important part of species study and identification. Through-out the field guide you will see the common names of the species and the scientific classification.

## INVASIVE SPECIES

Invasive species are plants, animals, and other organisms that are not native to the given area and cause harm to their new home. They have no natural enemies in the new area therefore they tend to grow rapidly. Invasive species are one of the leading threats to biodiversity and cause agriculture, forestry, fisheries, and other human enterprises, as well as to human health.

## ECOSYSTEMS & HABITATS

### Ecosystems

Ecology is the study of interactions of living organisms with one another and with their physical environment. A particular place that one organism lives is known as its habitat. A habitat that contains many different species living together is known as a community, and a community and all the physical aspects of the habitat make up an

ecosystem. Physical aspects are called abiotic factors, which means non-living features of an environment. These can consist of soil, water, weather, and so on. The living organisms in a habitat are called biotic factors. The physical boundaries of an ecosystem are not always noticeable because it all depends on how the ecosystem is being studied. Whether or not the individual is looking only at a log or the entire isolated field, forest, or lake.

## Energy Flow

Everything that organisms do in an ecosystem require energy, it's this flow of energy that determines what kinds and how many organisms an ecosystem can support. The rate of which organic material is produced by photosynthetic organisms determines the amount of energy available in an ecosystem. The organisms that capture energy are called producers; including plants, bacteria, and algae. Producers make energy-storing molecules that then get consumed by other organisms in the ecosystem. These other organisms are called consumers; they obtain the necessary energy then need to build their molecules by consuming plants or other organisms.

## Food Chain

This path of energy through the ecosystem is known as the food chain. At the bottom level of the food chain are the producers, which produce energy-rich carbohydrates. The second level contains herbivores, which are animals that eat the producers. Next come the carnivores, which then eat the herbivores to obtain the energy they need. There are also top carnivores that consume other carnivores. Also there are omnivores; they are both herbivores and carnivores. Furthermore there are detritivores, they attain their energy from organic waste and dead bodies. Lastly, decomposers break down bodies and wastes to release nutrients back into the environment.

## Niche

All of these are part of an organism's niche in an environment. A niche is the function or position of an organism or a population within an ecological community. Its often know as how an organism affects energy flow within the environment it lives in. The entire range of conditions an organism is potentially able to occupy within an ecosystem is its

## American Sycamore

### *Platanus occidentalis*

#### Habitat preference:

The Sycamore grows on bottomlands, floodplains, and on the banks of streams



#### Cool Stuff:

Sycamores have the largest leaves of any native tree in North America.

#### Description:

The sycamore grows to be height 80' - 100', its outer bark peels away to expose tans, whites, grays, greens and sometimes yellows. The leaves are very large with 3 to 5 leaf lobes and are often 7 to 8 inches long and wide; characterized as broad, flat, simple outer indentions around the leaf edges

## Royal Paulownia

### *Paulownia tomentosa*

#### Habitat preference:

Waste places, native to China. Introduced to New York, West Virginia, and Missouri to Florida.



#### Cool Stuff:

Can grow up to 30 feet in 3 years. Grows beautiful lavender blossom.

#### Description:

Medium size about 50 feet. Large heart shape leaves. Cluster of nut-like fruits.



**Cool Stuff:**

This tree is commonly found on the east coast only.

**Description:**

Tree of heaven is a rapidly growing small tree but can reach up to 80 feet in height and 6 feet in diameter. It has pinnately compound leaves that are 1-4 feet in length with 10-41 leaflets.

**Sassafras**

*Sassafras albidum*

**Habitat preference:**

The Sassafras thrives well in acidic, moist, rich, mixture of sand, clay, silt, and organic matter, and when exposed to full sun and partial shade.



**Cool Stuff:**

The tree grows four different type of leaves.

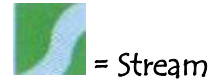
**Description:**

Sassafras grows to be 20-40'. Its bark is Bark thick, gray to brown, deeply furrowed. Twigs thin, usually greenish, and smooth. Buds rounded, greenish, covered with four scales. Leave variable, entire or with 2 or 3 lobes, elliptical in outline, 3" - 5" long and 1.6"

fundamental niche. The part of the fundamental niche that an organism actually occupies is known as its realized niche.

**Habitat**

For each species presented in this field guide, we used a picture to symbolize the habitat where the species is most likely found. Here are the pictures and what they symbolize:



## INVERTEBRATES

### Crayfish

#### *Orconectes virilis*

##### Habitat preference:

Crayfish generally stay and live in cool fresh waters. Crayfish are most likely found in streams, creeks, and small ponds. One-habitat requirements that crayfish need to survive are shelter from predators.



##### Cool Stuff:

Crayfish swim backwards to escape predators. There are over 500 different species of crayfish worldwide.

##### Description:

Crayfish have the appearance of small lobsters. They are usually brown in color and have two claws. They have four legs on each side, a small tailfan and antennae.

### Slug

#### Gastropoda: Pulmonata

##### Habitat preference:

Slugs thrive under high moisture conditions. The most effective way to reduce slug problems is to reduce humidity in a garden.



##### Cool Stuff:

Slugs are hermaphrodites: they all have male and female reproductive systems

##### Description:

Slimy, worm-like and slugs have no backbone

Speckled throughout the tree are small 1" green fruits.

### American Holly

#### *Ilex opaca*

##### Habitat preference:

The American Holly can grow in a wide range of soil conditions including: acidic, moist, rich, sandy, clay, and can tolerate mild drought conditions; hardwood forest.



##### Cool Stuff:

The American Holly is known as an ornamental tree; during the winter it is commonly used to make Christmas ornaments.

##### Description:

This tree grows to be 40-50' tall with a pyramid frame shape. The sturdy branches are covered with 2 to 4' sharply tipped leathery leaves and speckled with red berries.

### Tree Of Heaven

#### *Ailanthus altissima*

##### Habitat preference:

It is extremely tolerant of poor soil conditions and grows even in cement cracks, around meadows and forest edges. Thrives best in areas well exposed to sun disturbed forests or edges.



## Domestic Pear

*Pyrus communis*Habitat preference:

Thrives best in slightly acidic, deep, heavy, moist, but well drained soil. Other soil types can be tolerated, but a less productive crop is produced. Pear trees are sensitive to salt.

Cool Stuff:

The fruit on the tree never grow to be the size of a average pear.

Description:

The domestic pear tree is a 20-30'; small upright tree specked with 1" small green oval shaped apples, and a brown and scaled bark. Its long hairless budded branch, are covered with 1-4", white underside scard leaves, that grow zig-zag on the branch and has jagged leaf edges.

## Domestic Apple

*Pyrus malus*Habitat preference:

Thrives best in slightly acidic, deep, heavy, moist, but well drained soil. Other soil types can be tolerated, but a less productive crop is produced. Pear trees are sensitive to salt.

Cool Stuff:Description:

The Domestic Apple usually grows to be between 20-50' tall, with a dark and scaly bark. Dark green leaves(1-4" long), with a white underside; crowd on short, dark, hairy, budded, thorny twigs.

## Aquatic snail

Class: Gastropoda

Habitat preference:

These snails live mostly in shallow freshwater habitats, including ponds, lakes, creeks, rivers, and vernal pools and they are less than 12.5 mm long.

Cool Stuff:

In preparation for the dry summer, the snails burrow several inches into the mud and seal themselves in mucus to prevent water loss. They can stay like this for up to three years!

Description:

Freshwater snails are not as colorful as their saltwater cousins. In general, their shells come in shades of gray, brown, and black, often with flecks of yellow or white.

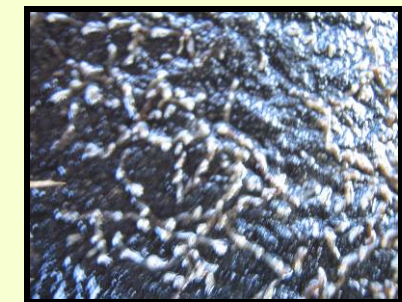
## Bryozoans

Habitat preference:

Always found by body of water. They extend on sea grass, shells, and in dark areas.

Cool Stuff:

Expand like a large colony on the bottom of the rocks.

Description:

Little beaded vine like animal that spreads to take over.

## Leech

*Hirudo medicinalis*Habitat preference:

Most leeches are freshwater animals. Land leeches are common on the ground or in wet rain forests. In dry weather, some species burrow in the soil where they can survive for many months even in a total lack of environmental water. Freshwater leeches prefer to live in still or slowly flowing waters.

Cool Stuff:

Leeches have been used in medicine for over 200 years. The leech is valuable today with surgeons when venomous congestion in the skin is a problem.

Description:

The leech has a body structure like an earthworm. Towards the head, the body gets slightly bigger. They are slimy and have a protective gel-like layer on the outside of the body. On some leeches, small, thin hairs grow from every point of the body.

## Woodlouse, Rolly Poly

*Porcellio scaber*Habitat preference:

Their preference for moist environments is due in part to their lack of a waxy cuticle covering their body. They also need moisture because they breathe through their gills.

Cool Stuff:

This tree is host to the bicolored honey locust moth and the Bisected honey locust moth.

Description:

The leaves are very large compound leaves, which can range 1 to 3 feet in length. The tree can reach to be about 80 feet and 2 feet in diameter. The tree produces 3 to 8 inch long pods that contain six or more brown seeds.

## Black Gum

*Nyssa sylvatica*Habitat preference:

Black Gum can thrive in an acidic moist soil, composed of a mixture of sand, clay, silt, and organic components. Prefers an area that goes from full sun to partial shade.

Cool Stuff:

The bark is so strong that in the colonial days it was used for water pipes. The Black gum tree is a honey plant for bees and the fruit attracts birds.

Description:

Black gum grows to be between 60-80', with a reddish brown or light gray bark. The dark glossy leaves specked with purple berry clusters, dangle from branches that grow perpendicular to its trunk. During the fall black gum leaves turn a bright red.

**Black Walnut***Juglans nigra*Habitat preference:

The Black Walnut tree only grows in small groups or by itself. They prefer to be in soils with clay, sand and loam. They also only grow in woodland prairie or meadow areas.

Cool Stuff:

Certain plants cannot grow underneath a Black Walnut because of certain chemicals the tree releases into the ground.

Description:

The leaves are compound and alternate in position. There can be 10 to 24 leaflets per leaf. The tree can easily reach 100 feet in height. The tree produces a yellow or green fruit that is 2 to 2.5 inches across and that has a citrus like fragrance. There is a large pit in the middle of the fruit.

**Kentucky Coffee Tree***Gymnocladus dioica*Habitat preference:

The tree prefers to be in floodplains, moist woods and lower sloped areas.

Cool Stuff:

Live for 3-4 years. Have 14 legs.

Description:

Rough nodules, or tubercles, on exoskeleton. The head is crown-shaped, with three lobes. There are two pairs of projections on the isopods -- inner pair are much smaller. The posterior end of the plates of the exoskeleton (pereopods and pleonites) tends to come to a sharp point rather than being rounded. Most are slate-gray in color.

## SPIDERS

### Daddy Long Legs

#### *Pholcus phalangioides*

##### Habitat preference:

Pholcids are web-weaving spiders and are distributed worldwide. They hang inverted in messy, irregular, tangled webs. These webs are constructed in dark and damp recesses, in caves, under rocks and loose bark, abandoned mammal burrows and undisturbed areas in buildings and cellars, hence the common name "cellar spiders".

##### Cool Stuff:

They are true spiders; although they hunt venomous spiders they cannot hurt a human with their bite.



##### Description:

1/8-1/4" (4-6 mm). Long thin legs. Body reddish brown. Legs dark with prominent paler coxae. Eyes on black turret; 1 eye to right, 1 to left

### Brown Daddy-Long-Leg

#### *Phalagium opilio*

##### Habitat preference:

Often found in the fields and on tree trunks and open ground.



##### Cool Stuff:

Green ash is the most popular ash of all the ashes.

##### Description:

Green Ash is usually 30-60' tall with a scaly gray bark. Oval leaves grow symmetrical on the branch: leaves grow 5-9, on a green twig, known as leaflets (2-6" long). The shiny green leaves are paler on the underside, small saw-like edges. The green ash produces a yellowish feather-like fruit, known as a key, it grows in clusters.

### White Ash

#### *Fraxinus americanus*

##### Habitat preference:

Moist soil of valleys and slopes, in forest with other hardwoods.



##### Cool Stuff:

The wood of White Ash is particularly suited for making baseball bats, tennis racquets, hockey sticks, polo mallets, oars, and playground equipment.

##### Description:

Large tree with straight trunk. Can grow up to eighty feet.

**Black Willow***Salix nigra*Habitat preference:

Wet soils of banks of streams and lakes especially floodplains.

Cool Stuff:

Also known as a Swamp willow. This is the largest and most important New World willow, with one of the most extensive ranges across the country. In pioneer times the wood of this and other willows was a source of charcoal for gunpowder.

Description:

Drooping branches, about 20 ft high located in the backwoods. Leaves are 3-5 inches long.

**Green Ash***Fraxinus pennsylvanica*Habitat preference:

This Ash thrives best when it's in an area that is moist, wet, or dry; fully exposed to sun, with soil that is composed of a mixture of sand, acidic, clay, silt, and organic matter. Green ash is commonly found along streams or in wet woods.

Cool Stuff:

One of the arachnids in which carry a deadly venom but the most harmless arachnids. The teeth of this spider are not effective against human skin so it can not be punctured.

Description:

The body is a reddish brown color and the legs are dark with standing out intense at the hip.

**Orb Weaver***Araneus sp.*Habitat preference:

They are found in most places ranging from grass to corner or homes or even a safe point under a porch. Their webs are where they stay constantly wither waiting in the middle with the head facing down or on the side with a side waiting with a signal line

Cool Stuff:Description:

Orb weavers have four pairs of small simple eyes on the cephalothorax, and on the inside of the cephalothorax, there is one small pair of appendages known as chelicerae, each of these holds a fang with venom glands.

## Funnel Weaver

### *Agelenopsis* sp.

#### Habitat preference:

Live in areas from dry inland, shrub inland, and woodlands to wet coastal forests. Are also common in suburban gardens. Common household pest in the fall when they are looking for a warm place to over winter. They are commonly found around doors, windows, houseplants, basements, garages, and in almost all terrestrial habitats.

#### Cool Stuff:

Lives for up to two years. They have eight eyes. Four small ones are located at the lower part of the face. Immediately above these there are two large eyes looking forward and farther back there are also two big eyes that look upward. In this way the spider can look in four directions and can perceive moving insect at a distance of several inches. Carry their spiderlings on their back until they are mature enough to disperse.



#### Description:

They are usually 1-8 cm across their legs. Their color is drab and has colors of yellow, brown, gray, black, and white. On some occasion they can be a salmon pink color. Often their pattern is radiating on their carapace with scroll like pattern on their abdomen. On their underside they are light grey, cream, or black and sometimes salmon. The sides of their jaws tend to have a spot of orange or "boss". They have three rows of eyes in 4,2,2 formation, with the four smaller eyes in front, and the four largest arranged in a square on top of the high and convex head.

never be eaten. This widespread species is the largest and most important native cherry. The valuable wood is used particularly for furniture, paneling, professional and scientific instruments, handles, and toys. Wild cherry syrup, a cough medicine, is obtained from the bark, and jelly and wine are prepared from the fruit

cherries. Can grow to 80 feet tall.

## White Mulberry

### *Morus alba*

#### Habitat preference:

Hardy in cities, drought-resistant, and adapted to dry, warm areas.

#### Cool Stuff:

Fruit are edible and delicious. It grows rapidly and produces abundant berries that are enjoyed by birds as well as by many people. The trees spread like weeds in cities, where the berries litter sidewalks.



#### Description:

Naturalized small tree with rounded crown of spreading branches, milky sap, and edible mulberry, can grow up to 40 feet.



## Choke Cherry

### *Prunus virginiana*

#### Habitat preference:

The Choke Cherry cannot grow in heavily clayed soils. They like to grow near bodies of water like ponds, creeks, and lakes. They cannot live in canopied forests or any areas where there are a lot of things bigger than they are.

#### Cool Stuff:

The berries of Choke Cherry can be used for wines.



#### Description:

The leaves are oval shaped and grow alternately. They also have small teeth along the edges. The tree can get to be about 25 feet tall and 6 inches in diameter. The tree has small purple/red berries that will mature in late summer.

## Black Cherry

### *Prunus serotina*

#### Habitat preference:

On many sites except very wet or very dry soils; sometimes in pure stands.

#### Cool Stuff:

The seeds of all Prunus species, found inside the fruits, contain poisonous substances and should



#### Description:

Aromatic tree with tall trunk, oblong crown, abundant small white flowers, and small black

## INSECTS

## Caddisfly Larvae

### Order: Trichoptera

#### Habitat preference:

Caddis flies are able to live in a variety of water conditions. However, they seem to prefer shallow, cool, well-oxygen filled waters. Most obtain food from Algae, diatoms, plants and animal materials that have settled to the lake bottom. These foods are more abundant and available around weed beds than a muddy or sandy bottom.

#### Cool Stuff:

Caddis fly larvae can produce silk. Some types of caddis fly larvae use the silk to glue together small stones, twigs, shells, and other material from the stream bottom to create a protective cases around themselves. They use hooks at the end of their abdomen to hold on to their cases. Some free-living caddis fly larvae can spin webs with their silk (similar to a spider web) and filter food from the water.



#### Description:

The larva is grub-like in appearance with three pairs of well-developed legs on the first three body segments and hooks on the last one. They hide within their protective casings. Within the casing the larva pupates. Adults emerge with developed wings, long legs, and antenna. Species can range from up to 20 mm long.

*Mayfly Larvae*

Order: Ephemeroptera

Habitat preference:

Mayflies only live for a short period of time outside of water. They reproduce and lay eggs in freshwater streams, ponds, or small lakes. Once the fly matures and develops it will leave the water, usually after two years, and fly through meadows and live in trees and flowers.

Cool Stuff:

Adult mayflies do not feed. Their digestive system is filled with air, making them light enough to float. Mayflies are a favorite bait of fishermen, and many popular fishing "flies" are tied to resemble mayflies.

Description:

Mayflies, when born in water have three long arms coming from the top of the body. The thorax splits into three small sections known as the "tail." When a mayfly becomes an adult it grows wings. The wings are oval shaped.

*Mosquito*

Unknown species

Habitat preference:

During the heat of the day most mosquitoes land in a cool place and wait for the evenings.

*Norway Maple**Acer platanoides*Habitat preference:

A street tree, escaping along roadsides; in humid temperate regions.

Cool Stuff:

Native to Europe. In 1964 there was a tree that was recorded to be 75 feet tall. Has red leaves.

Description:

Rounded Crown of dense foliage and with milky sap in leafstalks. Can grow up to 60 feet.

*Box elder**Acer negundo*Habitat preference:

Wet or moist soils along stream banks and in valley with various hardwoods.

Cool Stuff:

Plains Indians made sugar from the sap. Hardy and fast-growing, it is planted for shade and shelterbelts but is short-lived and easily broken in storms.

Description:

Small to medium-sized tree with a short trunk and broad, rounded crown of light green foliage. 30-60 feet tall.

**Cool Stuff:**

Small amounts of sugar can be extracted from this tree. The wood can also be used to make clothing

**Description:**

This tree can grow to be about 60 to 90 feet tall and have a diameter of 18 to 30 inches. The leaves grow opposite of each other and they have 3 deep lobes. The leaves are known for turning a bright red in the autumn. The bark is a gray color that has deep fissures in it when it gets older.

**Silver Maple**

*Acer saccharinum*

**Habitat preference:**

Wet soils of stream banks, flood plains, and swamps.



**Cool Stuff:**

Its rapid growth makes Silver Maple a popular shade tree; however, its form is not generally pleasing, its brittle branches are easily broken in windstorms, and the abundant fruit produces litter. Sugar can be obtained from the sweetish sap, but yield is low.

**Description:**

Large tree with short, stout trunk, few large forks, spreading, open, irregular crown of long, curving branches and graceful cut-leaves. 50-80 feet tall.

**Cool Stuff:**

The females of most mosquito species suck blood from other animals. This blood sucking characteristic has made mosquitoes one of the most deadly vectors known to man, killing millions of people over thousands of years and continuing to kill millions per year by the spread of diseases

**Description:**

These insects have a pair of scaled wings, a pair of halteres, a slender body, and long legs.

**Crane Fly**

Family: Tipulidae

**Habitat preference:**

They commonly occur in moist environments such as woodlands, streams and flood plains although some species inhabit open fields, dry rangeland and even desert environments



**Cool Stuff:**

Despite their common names, crane flies do not prey on mosquitoes as adults, nor do they bite humans.

**Description:**

Crane flies are variable in size, with temperate species ranging from 2 mm up to 60 mm, while tropical species have been recorded at over 100 mm.

## House Fly

*Musca domestica*Habitat preference:Cool Stuff:

Mechanical transmitters of many diseases, especially typhoid fever.

Description:

The thorax is black with stripes of gray pile. The head and abdomen have brown markings. They have sponging mouthparts.

## Cricket

*Gryllus sp.*Habitat preference:

The cricket habitat has three chambers. One contains soil that is kept moist. This is where the females will lay eggs. A second chamber contains dry sand. Food should be placed in this area so that it will not mold. The central area is the exercise yard with structures for climbing and hiding.



## Northern Red Oak

*Quercus rubra*Habitat preference:

The Northern Red Oak likes to be in moist, sandy, rocky and/or clay soil. They are usually found in North Eastern Canada and United States. They can also be found in Georgia, Minnesota, and Oklahoma.

Cool Stuff:

It is the provincial tree of Prince Edward Island. It is the only native oak northeast of Nova Scotia

Description:

The leaves have 7 to 10 shallow lobes and are 10 to 23 centimeters long. They have dull green hair on the underneath of the leaves. The tree grows to be 18 to 27 meters tall and 0.3 to 0.8 meters in diameter. This tree produces acorns. They are 1.5 to 2.8 centimeters long.

## Red Maple

*Acer rubrum*Habitat preference:

The Red Maple tends to grow near oaks and Black Ashes. They tend to grow in wet and moist soils. You can find them near bodies of fresh water. They can also be found in high dry lands.



**Cool Stuff:**

The wood is used for weapons in martial arts such as the bokken and jo.

**Description:**

This tree can reach a height between 80 and 100 feet and a diameter of 3 to 4 feet. The leaves are 4 to 9 inches long and 2 to 3 inches wide. They have 7 to 10 deep indents and are a bright green color. The bark is an ashy gray color and is scaly with occasional smooth patches.

**Willow Oak***Quercus phellos***Habitat preference:**

Grows typically near some sort of water source. They can live in temperature from as low as -20 degrees to 115 degrees Fahrenheit. The trees like silty and loomy soil.

**Cool Stuff:**

The willow oak is not even related to willow trees.

**Description:**

These trees are between 70 and 100 feet tall and 2 to 4 feet in diameter. The leaves are 2 to 5 inches long. The leaves are very narrow and are shiny on top. They grow in an alternate pattern. They have itty bitty acorns that are shallow and 0.5 inches long and .375 and .5 inches across

**Cool Stuff:**

There are two types of cricket songs: a calling song and a courting song. The calling song attracts females and repels other males, and is fairly loud. The courting song is used when a female cricket is near, and is a very quiet song

**Description:**

Crickets have other interesting features, starting with a pair of spikes that extend out from the end of the abdomen in both sexes. The cricket has two pairs of wings, the front two of which are equipped with rasp like adaptations that, when scraped together, produce the chirp.

**Violet Tail "Violet Dancer"***Argia violacea***Habitat preference:**

It stays near the water environment like streams and rivers more than other damselflies. It can also be found near marshes and lakes.

**Cool Stuff:****Description:**

The damselfly is about 1.2 – 1.3 inches long. A thorax and abdomen of a violet color with a blue tip tail.

**Green Darner***Anax junius***Habitat preference:**

Commonly found around vegetation near bodies of water.

**Cool Stuff:**

These dragonflies are very strong fliers. They move really fast in a straight path and backing up.

**Description:**

Bulged eye dragonfly with silvery wings and is 2 to 3 inches long.

**Pyralis Firefly***Photinus pyralis***Habitat preference:**

Can be found East of the Rock Mountains mostly in the Eastern and Central part of North America. Are found in the meadows and edges of woodlands, lawns, and suburbs.

**Cool Stuff:**

At an adult stage, the pyralis firefly does not feed on anything. Both sexes have the flashing light in which the female has a smaller one and the female does not fly.

**Description:**

Head is concealed from above by rounded front of pronotum. Pronotum is pinkish with dull yellow edges and black spot in the center. The elytra are mostly blackish brown with dull yellow on sides and down the middle.

of the tree is a shiny dark green semi-cone shape, speckled with almost the perfect round acorn.

**Blackjack Oak***Quercus marilandica***Habitat preference:**

Dry sandy and clay soils in upland ridges and slopes with other oaks and with pines.

**Cool Stuff:**

The fruit is eaten by wood ducks. Another common name is the Red Ash. Is a tree of the Old South.

**Description:**

Twenty to thirty feet tall is the average height. Thick black bark. Grows acorns.

**White Oak***Quercus alba***Habitat preference:**

They like to grow in moist, well-drained uplands and lowlands. They're very versatile and will grow anywhere as long as the soil is shallow and very dry.



## Scarlet Oak

*Quercus coccinea*Habitat preference:

This oak prefers to live in sand or clay predominant soils. They don't seem to be particular about the moisture of the soil. They tend to stay near other oaks or in mixed forests.

Cool Stuff:

The Scarlet Oak is the official tree of Washington D.C.

Description:

This is a large tree that can be 60 to 80 feet in height and 1 to 2.5 feet in diameter. The leaves are 3 to 7 inches long and typically have 7 points. The bark is a dark gray color that is usually very smooth or very rough.

## Pin Oak

*Quercus palustris*Habitat preference:

Pin Oak thrives best when it has wet and fertile deep soil, and clay-like surface soil.

Cool Stuff:

The pin oak is the only oak commonly used for landscaping. Most of the trees you see on outdoor outings are Pin Oak!

Description:

The pin oak stands between 40-90' on a dark brown or gray scaled, straight trunk. Its 2-3" glossy star shaped leaves, dangle from spreading slim, horizontal branches. The head

## Spotted Cucumber Beetle

*Diabrotica undecimpunctata*Habitat preference:

They usually live in the southern range of North America, Mexico, and Canada. They prefer living in cornfields. The beetles also like to live in the woodlands under leaves or even trash.

Cool Stuff:

Eat holes in leaves and it chews on pods.

Description:

Its yellowish green with about 12 black spots on its back. It gets to be about 1/4 long.

## Green Stink Bug

*Acrosternum hilare*Habitat preference:

They prefer North America but they have been spotted as far as Quebec. They usually prefer woodland areas, and along edges of vegetation, and they are also found in cultivated land such as farms and habitats of that nature.

Cool Stuff:

They adept to better suit their environment to they can turn brown or green. They also give off a very smelly odor hence their name. They are also not predators they usually eat just plants and crops.

Description:

They are usually large and fairly small around 15-18mm. They are bright green and shield shaped. They do have wings in their adult stage. They are almost can be mistaken for a small leaf.

**Froghopper****Family:** Cercopidae**Habitat preference:**

Common in forage crops and grain. Pacific Northwest, south to California, east to Northeastern U.S., South to South Carolina

**Cool Stuff:**

Nymphs produce a spit like substance, which it surrounds itself in. Adults are shaped almost like tiny frogs.

**Description:**

Small jumping insects; usually no more than 12mm. Pronotum does not extend back over abdomen.

**Paper Wasp*****Polistes* sp.****Habitat preference:**

Wasps can be found on flowers, particularly from goldenrod in late fall. Nests are built from wood fiber collected from posts and occasionally from live plant stems, causing some plant damage. Mature nests contain up to 200 cells.

**Cool Stuff:**

The fruit is totally edible and tastes pretty good if you don't mind some cottonmouth.

**Description:**

The Persimmon is a small tree ranging 20 to 70 feet in height and 1 to 2 feet in diameter. The tree has brown to black bark that gives the tree a scaly kind of look. The leaves are 2.5 to 6 inches long and have a long point. The fruit is .75 to 1.5 inches in diameter and is orange to purple when ripe. The fruit contains 4 to 8 seeds and has a bright orange and juicy pulp when ripe.

**Flowering Dogwood*****Cornus florida*****Habitat preference:**

These trees prefer to live in moist and sandy soils. They are only really found on the eastern coast because they cannot grow in dry soil due to their low root system.

**Cool Stuff:**

Native Americans used the bark and roots as part of a treatment against malaria. Considered the "queen" of North American forest.

**Description:**

This tree only reaches about 30 feet in height and is only 8 inches in diameter. The leaves are 2.5 to 5 inches long and 1.5 to 2.5 inches wide. The edges of leaves have very little teeth. The bark is a reddish brown that is very rough. There can be a small, quarter inch long berry that is a shiny red.



## TREES

### Tulip Poplar

#### *Liriodendron tulipifera*

##### Habitat preference:

The tulip tree prefers moist soil. It tends to be on valleys and hills with slight inclines. The tree loves places with well-drained soils but can grow in relatively dry areas.

##### Cool Stuff:

It is the state tree of Tennessee, Indiana and Kentucky. The trunks were once used to make canoes with.



##### Description:

They usually are between 80 and 120 feet tall and about 2 and 3 feet in diameter but can be larger. Has a dark gray bark with 3 to 6 inch long leaves with a tulip like look. The leaves sometimes look like the end has been cut off and they're paler underneath.

### Common Persimmon

#### *Diospyros virginiana*

##### Habitat preference:

The Persimmon is a very adaptable tree. They can grow anywhere from dry uplands to wet swampy areas.



##### Cool Stuff:

Males are incapable of stinging because the stinger on the females is a modified egg-laying structure (ovipositor) and it is not present in males

##### Description:

Paper wasps are 3/4 to 1 inch long, slender, narrow-waisted wasps with smoky black wings that are folded lengthwise when at rest. Body coloration varies with species

### Tarantula Hawk Wasp

#### *Pepsis formosa*

##### Habitat preference:

Tarantula hawks are most active in the summer, during the day, although they avoid the highest temperatures. Like all members of this genus, they require a spider to serve as host for their larvae, and in the case of the local species, tarantulas are the preferred nursery.

##### Cool Stuff:

Tarantula hawk stings are considered to be the most painful of any North American insect. Instead of killing the tarantula, the venom only causes paralysis them.



##### Description:

Tarantula hawks are up to two inches (50mm) long with a blue-black body and bright rust-colored wings. The stinger of a female tarantula hawk can be up to 1/3 inch (7 mm) long.

## Clip Wing Grasshopper

*Metaleptea brevicornis*Habitat preference:

The clip wing grasshopper prefers to be in wetlands with sedges and grasses. He can also be found in salt marshes on occasion. They are found mostly in Eastern regions and as west as Texas.

Cool Stuff:

This grasshopper comes to life at night in the end of July and early August, this is known as the period of dispersal.

Description:

Males 25mm – 38mm while females are 36mm – 53mm. They have a slant face with sword like antennas. Their color varies brown to green. The hind wing has no color. They fly, very seldom leap.

## Yellow Bear

*Spilosoma virginica*Habitat preference:

The yellow bear caterpillar is commonly found along fields, gardens, bottomlands, woodlands, and other forests along Canada and southern United States around Florida and Texas. They are seen much along the East Coast from around May to November.

Cool Stuff:Description:

## Multiflora Rose

*Rosa multiflora*Habitat preference:

Found on the Eastern Coast of North America. Multiflora rose has a wide tolerance for various soil, moisture, and light conditions. Occurs in successional fields, pastures, and roadsides. It also may occur in dense forests, particularly near disturbances such as tree fall gaps.

Cool Stuff:

Planted in highway median strips to serve as crash barriers and to reduce automobile headlight glare.

Description:

Multiflora rose is a medium height, thorny, bushy shrub with a more spreading than erect growth form. Leaves are born alternately on the stems and divided into 5-11 leaflets. Each leaflet is broadly oval and toothed along its margin. Clusters of numerous, white flowers, 3/4" – 1-1/2 inches across, blossom in late spring. The fruits are small, firm, red hips that may remain on the plant well into winter. Older rose shrubs may obtain a height of 15 feet or more.

**Arrowwood Viburnum**

*Viburnum dentatum*

Habitat preference:

Northeastern America. Likes cold weather.



Cool Stuff:

Birds love the fruit that grow on the Arrowwood.

Description:

A multi-stemmed shrub with black berries. Leaves are dark green but change to red and yellow in fall.

**Hazel Alder**

*Alnus serrulatus*

Habitat preference:

The alders species grows in open sunny areas. Alders is adaptable to any type of soil, but it grows the best in poor soil; Along streams, rivers, ponds, and swamps.



Cool Stuff:

The Alder is common plant in environments that have been disturbed, because they can adapt to a variety of soils.

Description:

The alder usually grows as a shrub (6-12"), but can grow to reach the height of a tree(15-25'). The bark and branches are gray and smooth. The leaves are wide and flat, double jagged edges, with a U-shaped base. The tree produces a 1" scaly cone-like fruit.

**Woolly Bear**

*Pyrrharctia isabella*

Habitat preference:

The woolly bear caterpillar can be found along meadows, pastures, uncultivated fields, and road edges. They can also be found along fields, bottomlands, woodlands, and other forests across Canada to southern United States by Florida and Texas and all along the east.



Cool Stuff:

Some people believe that according to "rural legend," you can determine how severe the upcoming winter will be according to the length of the orange band. The narrower the band, the colder the winter. The woolly bear caterpillar turns into the Isabella Tiger Moth.

Description:

The caterpillar can grow up to 2 1/8" (55 mm). It is covered with stiff bristles and has a broad band of reddish brown bristles around its middle with two black ends.

**Monarch Butterfly**

*Danaus plexippus*

Habitat preference:

It is a well-known North American butterfly but is also found in New Zealand, Australia, Canary Islands, Madeira, Mexico, Portugal, and Spain. It lives in meadows, roadsides, and sandy areas but mainly wherever milkweed grows.



Cool Stuff:

In Australia it is also known as the

Description:

Its wings have an orange and

wanderer Butterfly. It's the state butterfly of Minnesota and West Virginia. It was also the national insect of the United States and Canada.

black pattern and a wingspan of about 3 1/2 - 4 inches. Females have darker veins on their wings, and then men have a spot in the middle of their hind wing where pheromones are released.

### Clouded Sulphur Butterfly

*Colias philodice*

Habitat preference:

Meadows and fields, and almost any open spaces such as parks and pastures. They are in North America but not a lot in Florida.



Cool Stuff:

Females can be one of two colors : they could be yellow or a greenish white.

Description:

It's a clear yellow butterfly with black edges and a wingspan of 1- 2 3/4 inches. Their flight period is from May to October.

### White Cabbage Butterfly

*Peiris rapae*

Habitat preference:

This butterfly is found in North America, central Canada, and south down the Mexico. They like gardens, cities, plains, abandoned fields, and they don't like to go to places with extreme climates.



## SHRUBS

### Euonymus

*Euonymus bungeanus*



Habitat preference:

The Euonymus lives mostly in East Asia, Europe, Australia, and Madagascar. They are found mainly in the



Cool Stuff:

The seeds are eaten by frugivorous birds, which digest the fleshy seed coat and disperse the seeds in their droppings.

Description:

The flowers are in small groups of green or yellow shades. The leaves are opposite, typically 2-15 cm long. The fruit is a pinkish reddish pod-like berry, which splits open to reveal the fleshy-coated orange seeds. All parts of the plants are poisonous to humans if eaten.

**Cool Stuff:**

Stems are used in blanket making.  
Used to lower blood pressure.

**Description:**

An evergreen shrub growing to 0.2m by 1m at a medium rate It is in leaf all year, in flower from April to May. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees.

**Cool Stuff:**

When they are caterpillars, they eat cabbage so farmers and gardeners find them a pest.

**Description:**

The body is black and the wings are white. Females have two black spots and the males only have one. It gets 1.3- 1.8 in width.

**Silvery Checkerspot***Chlosyne nycteis***Habitat preference:**

Silvery Checkerspots can be found in moist woodland openings and along streams.

**Cool Stuff:**

They eat-black eyed Susan, which is one of the most common garden plants.

**Description:**

These butterflies are orange, black, and white in color. Their forewings have wide black margins and their hind wings have black sub marginal spots that are usually surrounded by orange.

## BIRDS

### Green Heron

#### *Butorides striatus*

##### Habitat preference:

The green heron breeds in swampy thickets. The heron will swim in swamps, along creeks and streams, in marshes, ponds, lake edges, salt marshes, ponds and pastures. The bird is free to fly wherever it desires but feeds and lives along the water. In the Winter, they mostly live in coastal areas, especially mangrove swamps. The green heron will try to stay in warm areas along the coast.



##### Cool Stuff:

The Green Heron is one of the few tool-using birds. It commonly drops bait onto the surface of the water and grabs the small fish that are attracted. It uses a variety of baits and lures, including crusts of bread, insects, earthworms, twigs, or feathers.

##### Description:

The herons are 16 to 18 inches tall. The wing span of a green heron is 25-27 centimeters. Green herons are small and darn with yellow colored skinny legs. Their beak is long and come to a direct sharp point, usually dark in color.

### Virginia Creeper

#### *Parthenocissus quinquefolia*

##### Habitat preference:

These vines cling to tree bark, wooden fences, brick walls and other rough surfaces. Found mainly in woodland, around fences, and thickets.



##### Cool Stuff:

This is in the grape family. During the fall, the color can turn to a burgundy to a scarlet color. Sometimes confused with poison ivy and poison oak. Berries are highly toxic to humans and may be fatal if eaten.

##### Description:

Woody vine up to 60' long. The stems are green and hairless. They later become brown and woody. The leaves are alternate palmately compound, usually consisting of 5 leaflets. Its outer margins may taper abruptly into a short blunt tip, or they may taper gradually into a long pointed tip.

### Periwinkle

#### *Vinca minor*

##### Habitat preference:

East coast side of the United States. Hedgerows, woodlands, sunny Edges, dappled shade, shady edge, deep shade, ground cover.



## VINES

### Poison Ivy

#### *Toxicodendron radicans*

##### Habitat preference:

This is a vine species that is mainly found in woods and thickets. This vine is found in the United States and Canada. Can grow as a self-supporting woody shrub, a thin vine running along the ground, or as an aerial-rooted vine growing on shrubs, trees, power poles, and fences.



##### Cool Stuff:

Used by doctors for paralytic and liver disorder. Small dosages are used homeopathically to treat the poison-ivy rash. Poison Ivy has its own saying "if it has leaves of three let it be." When you get poison ivy the term for it is called Urushiol-induced contact dermatitis. Poison Ivy is very commonly mistaken for boxelder and Virginia creeper. This vine is also known as 3 leafed ivy and poison creeper.

##### Description:

Leaves are alternate, long, glossy to hairy stalks. 3 leaflets, top leaflet is longest. Can have flowers that are white, also there can be white berries. When the plants grow as a shrub it can be around 4ft tall.

### Great Blue Heron

#### *Ardea herodias*

##### Habitat preference:

The Great Blue Heron is found along calm freshwater and seacoasts. The heron usually nests in trees near water, but colonies can be found away from water. Great White Heron found almost exclusively in shallow marine habitats. They like the water to come up to about 3 inches on their legs, which usually places them in small rivers, lakes, and most seen, ponds.



##### Cool Stuff:

Great Blue Herons gather together at fish hatcheries, creating problems for the fish farmers. Herons ate mostly diseased fish that would have died shortly anyway. Sick fish spend more time near the surface of the water where they become more vulnerable to the herons.

##### Description:

The great blue heron is a large blue gray bird with long legs. It has an "S" shaped neck and a long thick bill. The heron has shaggy feathers on its neck and back, red brown thighs and a nearly white face. The Great Blue Heron is usually 38-54 inches high and its wingspan is 66-79 inches.

## Kingfisher

### *Garvia immer*

#### Habitat preference:

The Kingfisher breeds along streams, rivers, lakes, and estuaries with banks for nest holes. It likes shallow water and fishes mostly is shallow, rocky, lighten up waters where fish can easily be seen. In the winter they live along the coast of streams and lakes.



#### Cool Stuff:

The Belted Kingfisher is one of the few bird species in which the female is more brightly colored than the male. Among the 93 species of kingfishers, the sexes often look alike. In some species the male is more colorful, and in others the female is.

#### Description:

The Kingfisher is usually about 11-14 inches long. Its wingspan is 19-23 in long. The Kingfisher is usually a medium-sized bird. It has a large head and shaggy crest. Its beak is large and full. It has a bluish head and back with a white throat and collar.

## Gray Catbird

### *Dumetella carolinensis*

#### Habitat preference:

The Gray Catbird usually prefers low growth forests. They also stay along the edges of woods. They can be found in almost all rural, suburban, and urban areas. During the winter they migrate south.



#### Cool Stuff:

The stem of this grass starts to get sticky near the top. Also, a tuft of hairs can be found in leaf axil.

#### Description:

Drooping branches red/purple coloration to brown.

## Bristle Grass

### *Setaria pulmia*

#### Habitat preference:

Bristle grass is found in temperate areas. It usually resides around meadow areas.



#### Cool Stuff:

Bristle grass is used to make ropes for farmers to tie up cows.

#### Description:

Bristle grass is also called foxtail. It is an annual grass found in fields and waste places. Bristle grass can grow to 4" tall. The bristle on top of the spike looks like a miniature fox's tail.



**Cool Stuff:**

This self-heal flower can heal all throat sickness. Its edible to eat when lost and sick and hunger.

**Description:**

Low or creeping with ovate, slightly toothed or toothless leaves. Flowers violet, hooded, lower lip fringed; crowded among bracts in a square or oblong head.

**Morning Glory**

*Ipunoea purpurea*

**Habitat preference:**

This playful-looking flower can be found on Roadsides, cultivated ground and it's widespread.



**Cool Stuff:**

The morning glory has many colors such as Purple, pink, blue, or white. It only lives about one day.

**Description:**

A twining vine, the familiar garden morning glory with broad heart-shaped leaves. The stems are pubescent.

**Purple-top**

*Triodia flava*

**Habitat preference:**

Found in dry fields and roadsides.



**Cool Stuff:**

They are called catbirds because their call sounds like a meowing sound. They are also very aggressive they are known to attack other bird eggs and destroying them if they build their nests to close to theirs. They are also able to mimic other bird's call.

**Description:**

This is a dark gray, black legs, and black tailed bird. This bird is about 7.75 inches long, and has a slim beak.

**Fish Crow**

*Corvus ossifragus*

**Habitat preference:**

Often found near tidewater, river valleys, and lakes. These birds are also found on some farmlands, wooded edges, and in some towns and cities.



**Cool Stuff:**

This bird is identified by its call or voice. They build new nest for each breeding attempt. They are more resistant to the West Nile Virus than American crows.

**Description:**

This bird is 16-20" long, which is slightly smaller than an American Crow. Its voice is a short nasal car or ca.

**Blue Jay***Cyanocitta cristata*Habitat preference:

The Blue Jay ranges from southern Canada all the way to Florida and Texas. Even though the Blue Jay is a slow flier it prefers mixed woodlands with oaks instead of heavier forests.

Cool Stuff:

The Blue Jay's color is not caused by pigments it's caused by the internal structure basically because of the way light reflects off the structure of the feathers kind of like a polar bear. The Blue Jay is very territorial if an owl roosts near their nest during the daytime they'll attack it until it moves.

Description:

The Blue Jay measures about 30 cm. The Blue Jay is blue in the back, wings, and tail, and its face is white. The wings and tail are strongly barred with black, sky-blue and white.

Cool Stuff:

The plant used to be used for medical reasons by tribal natives.

Description:

A low growing, foul smelling plant. Has large leaves growing from about 40-55 cm long and 30-40 cm wide.

**Seed Box***Ludwigia alternifolia*Habitat preference:

The Seed Box likes damp areas such as ditches or lake banks. Found in many areas usually few at a time.

Cool Stuff:

Its seed pod looks like a small round box with a tiny hole in the middle where the seed can shake out. The petals of the Box Seed fall off easily when touched.

Description:

The Box seed has four petals and a cube seed pod.

**Heal-All***Prunella vulgaris*Habitat preference:

These flowers can be found on roadsides, lawns, waste ground.



**Cool Stuff:**

The Queen Ann's Lace makes a fruit called a bristly which its not barbed. When crushed, it makes a carrot-odor. It can be cooked and eaten.

**Description:**

Lacy, flat-topped compound umbels of tiny, cream-white flowers, with 1 dark reddish-brown to purplish flower usually at center of each umbel.

**Bone Set*****Eupatorium perfoliatum*****Habitat preference:**

Bone Set is found in low woods and wet meadows. Found in the east but not far to the North.

**Cool Stuff:**

This plant is sometimes mistaken for the Late or False Bone Set which is found in roughly the same areas and has many of the same characteristics.

**Description:**

A hairy plant with dense, flat topped clusters of many dull white flowerheads. Its about 2-4' high and its leaves are about 4-8" long

**Skunk Cabbage*****Symplocarpus foetidus*****Habitat preference:**

Prefers wetlands. Can be found all over the world, mainly in eastern United States.

**American Crow*****Corvus brachyrhynchos*****Habitat preference:**

Found Neartic regions in North America. In the open areas with nearby trees. Grasslands are a ideal habitat for the crows. Also, they can be found in nearby woodlots and forest edges.

**Cool Stuff:**

A flock of crows is known as "a murder of crows." American Crows are taught to mimic human voices.

**Description:**

An average adult crow weighs to about 450g and is all black. The feathers are glossy looking and their legs and toes are very strong.

**Red-winged Black Bird*****Agelaius phoeniceus*****Habitat preference:**

These birds are mainly breed in many different types of wetland areas.

**Cool Stuff:**

Males and females do not look similar in color. Males have black with red shoulders, while females have brown with striped all over.

**Description:**

This bird has black with red and white wings. They have a short beak with short legs. The average size is 17-23cm. Its wingspan is 31-40cm. Their average weight is 32-77g.

**Great Egret***Ardea alba***Habitat preference:**

This bird is found along streams, ponds, lakes, and swamps. They build their nests in trees near water and on islands

**Cool Stuff:**

Their long legs allow them to stand in water for long periods of time. These birds fly with their neck in an "S" shape. They also make a deep croak when it is disturbed.

**Description:**

These birds have white feathers, with a long yellow bill with a black tip and glossy long black legs. Its wingspan is 131-135cm, and its average size is 94-104cm tall.

**American Robin***Turdus migratorius***Habitat preference:**

The American robin can be found throughout most of North America. Usually during the summer months it can be found in the northern part of the U.S. but during the winter months they migrate south towards Mexico. The robin's habitat varies greatly they can stay in woodland areas, open farmland, and urban areas. They can also stay in swamps and dense vegetation.

**Crown Vetch***Securigera varia***Habitat preference:**

It is native to Africa, Asia and Europe and is commonly used throughout the United States and Canada for erosion control, roadside planting and soil rehabilitation. It has become an invasive species in many states of the US. Crown Vetch is most commonly found on a sunny stream side.

**Cool Stuff:**

The Crown Vetch is the state beautification plant of Pennsylvania.

**Description:**

Crown Vetch grows 1 to 2 feet tall and bears small clusters of 1/2-inch pink and white flowers from early summer to late fall. The variety 'Penngift' produces mounds of pink flowers.

**Queen Ann's Lace***Daucus carota***Habitat preference:**

The Queen Ann's Lace is located at Dry Fields and waste places. Its spread throughout the East except Arctic; also in much of West.



## Red Clover

*Trifolium pratense*Habitat preference:

The Red Clover is usually found in meadows and roadsides. They originated in Europe, western Asia, and northwest Africa but are planted and naturalized in various other areas.

Cool Stuff:

The Red Clover can be used for therapeutic purposes as well for such things as coughs, bronchitis, and eczema. It is also gargled to help sooth sore throats mouth ulcers.

Description:

The Red Clover varies in height from 20-80 cm tall. The leaves grow alternately with three leaflets. Each leaflet is 15-30 mm long and 8-15 mm wide. A pale crescent on the outer side of the leaf is a definite characteristic of the clover. The flowers are 2-3 cm and are a dark pink but grow paler towards the base.

## Marsh Bedstraw

*Galium palustre*Habitat preference:

Marsh Bedstraw prefers wet swamps or marshes with temperate climate. Blooms through the summer.

Cool Stuff:Description:Cool Stuff:

In the breeding season the adult males grow distinctive black feathers on their heads but when the breeding season is over they lose them. In the winter hundreds of thousand of robins gather in a single roost. An on average only about 40 percent of robin's nests successfully produce young.

Description: The American Robin is 10-11in long with a brown back and a yellowish-orange back. It's also white underneath its belly and tail feathers. It's throat white with black streaks and the males are usually brighter than the females.

## Black-Capped Chickadee

*Poecile atricapillus*Habitat preference:

Black-capped Chickadees are most likely to be found in deciduous or mixed woodlands. They are common in forest edges, parks, yards, wetlands, willow thickets, cottonwood groves, and disturbed areas.

Cool Stuff:

Named after the Chick- a-dee-dee sound that they make, Black-Capped Chickadee is one of the most complex vocalizations in the animal kingdom.

Description:

the forehead, crown, nape, and upper mantle are sooty black. Black-capped Chickadees are white from their cheeks to the side of their nape. A sooty black bib extends from the chin and throat to the lower sides of the cheeks and upper breast.

## Sharp-Shinned Hawk

### *Accipiter striatus*

#### Habitat preference:

They live in a variety of places such as woodlands and forest with lot of land. If they cant find suitable land they will also be found in urban areas.



#### Cool Stuff:

The adults pass their food to their young mid-air. The way they determine which of the young get the food its whichever one who gets to the adult first. They stay close to bird feeders so they can feast on the bird who come to eat.

#### Description:

The Sharp-shinned hawk can be anywhere from 24-37cm long and the females are usually bigger. They have short broad wings and a long square-ended tail banded in blackish and grey and a black and yellow tipped hooked beak.

## Cattail

### *Typha latifolia*

#### Habitat preference:

Cattail usually grows in streams along rivers, lakes or ponds, or even where there is shallow, slow moving or standing water.



#### Cool Stuff:

Cattail prevents other plants from growing and invades their wild life territories. Animals feed on the edible rootstocks, in order to survive. The leaves are valuable for matting, thatching and other practical purposes.

#### Description:

Cattail is known as a wetland plant. It is very tall and grows up to nine feet. The leaves are long; spear like and broad with parallel veins. Cattail also has seed heads that stood up the long stout stalks that is white, dense, furry, cigar-shaped and had a brown over coat.

## Sedge

### Unknown Species

#### Habitat preference:

With over 4,000 different species in the sedge family, the habitat preferences consist of a wide variety, but are most commonly found in or around wetlands in subartic and temperate zones.



#### Cool Stuff:

Although any member of the sedge family can be referred to as "sedge" it usually only refers to the genus "*Carex*".

#### Description:

Sedges appear in nature in various ways, but all the members of the sedge family develop as shrub like plants, and usually very ample in large groups.

**Cool Stuff:**

Bulrush will resprout after fire. Burning will increase the production and protein content. It will reproduce from seeds and rhizomes. It will spread more than 45 cm in one growing season.

**Description:**

Bulrush is upright and has gray-green round stems. The stems are about 1-2 cm thick, 1-3m high. It contains few leaves that are short and found at the base. Also, it produces fruits that are called lenticular achenes, which are dark brown and are 2.5mm long.

**Milk weed**

*Asclepias syriaca*

**Habitat preference:**

It grows in dry/sandy soils and where there is a lot of sunlight such as Roadsides and fields. They grow from June to August..



**Cool Stuff:**

This species contains over 140 different species. It got its name from its milky sap, which is poisonous. Monarch butterflies lay eggs on the underside of the seed, and the caterpillars feed on its leaves.

**Description:**

Milkweed is a stout, downy plant. The doomed, often somewhat drooping flower clusters are mostly in the leaf axils and vary in subtle shades of dusty rose, lavender, and dull brownish purple. The pointed gray-green seedpods can be told from those of our other milkweeds by their warty aspect..

**MAMMALS**

**Gray Squirrel**

*Sciurus carolinensis*

**Habitat preference:**

Habitat: Hardwood forests with nut trees, glades, parks, and lawns. Nests in holes in trees or builds leaf nests in tree branches.



**Cool Stuff:**

Unlike rabbits or deer, squirrels cannot digest cellulose and must rely on foods rich in protein, carbohydrates, and fat.

**Description:**

Body gray, 8-10". In winter, gray squirrels have white fur behind their ears; in summer, the gray fur is more tawny and the tail is whiter. Tail bushy, gray, bordered with white-tipped hairs, 7-10".

## FISH

### Shiner

*Notropis* sp.

Habitat preference:



Cool Stuff:

Description:

### Black-nosed Dace

*Rhinichthys atratulus*

Habitat preference:

Black nose dace prefers small minnow of rivers and streams.



Cool Stuff:

The Black nose dace sometimes use as baits. It feeds on large aquatic insects and larvae, worms and algae.

Description:

The Black nose dace is 2-4 inches in length. Its colors are olive – green, brownish to black above dark spots on the side giving a mottled appearance. It has 62-71 scales. Also, it has a back and pelvic fins of 8 rays. The anal fins have 7 rays and the pectoral fins have 13-16 rays. Its barbel is behind the tip of the jaw.

## Algae

### Unknown Species

Habitat preference:

Algae can grow a number of places as long as there is a water source with sufficient nutrients and a light source. There's many different species of algae and each has their own characteristics. Algae plants aren't just eukaryotic organisms that sometimes become "plaque"-like, but they also provide the fish in that environment with food.

Cool Stuff:

Some aquarists think that algae is necessary to provide the fish with nutrients, but others feel that it is an invasive species. Algae can also determine the water quality just by which type is growing in that water. The Thread Algae is especially unique because when it is growing in a water source, it is letting the observer know that the water has high levels of iron.



Description:

Because of algae's many different types, it has a variety of appearances. It can appear from shades of brown to bright green. Sometimes its long and string like, or it can grow closer to the surface with a fuzzier look. The most common form has a furry moss like appearance.

## Bulrush

*Scirpus acutus*

Habitat preference:

Bulrush generally grow along lakes, reservoir and pond shoreline. Also, it is found in areas of standing water ranging from 10cm to more than 2.5m in depth.





**Cool Stuff:**

Jewelweed is best known for skin healing. The leaves and the juice from the stem are used to cure poison ivy, stinging nettle, and other plant rashes that irritate the skin. Also, its poultices and salves are remedy for bruises, cuts, eczema, insect bites, sores, sprains, warts and ringworm. Also, when water falls on the leaves it does not stick it easily runs off the leaves.

**Description:**

Jewelweed is about 2-5 feet tall. The stems are pale green to pale reddish green. They are fragile and break easily. The leaves have broad teeth along their margins. The stems are shiny and the leaves have a dull surface. It has yellow flowers spotted touch-me-nots have orange flowers with dark red dots. The seeds will pop when they are touched. That is where the name touch-me-not came from.

**Yellow Hawkweed*****Hieracium fendleri*****Habitat preference:**

They are common perennials and they occur worldwide. They are usually small and weedy and known to be a troublesome plant.

**Cool Stuff:**

The name comes from folklore saying that hawks used to chew on them to improve their eyesight's.

**Description:**

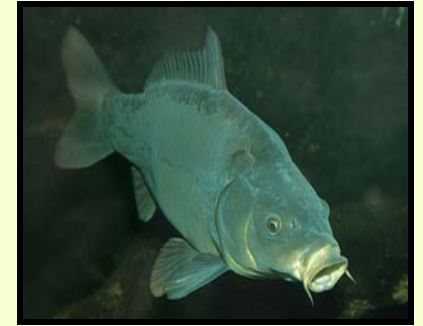
They grow from about 5-100 cm tall and they feature clusters of yellow, orange, or red flower heads. They are also similar to dandelions because they both grow on a long fuzzy stalk.

**Carp*****Cyprinus carpio*****Habitat preference:**

Generally thought of as a Stillwater species, the carp is now seen in rivers and canal systems. The number of gravel pits has increased all over the country and have proved to be an ideal carp habitat. Rich, nutritious plants and well-constructed gravel pits allow the carp to grow to its full size.

**Cool Stuff:**

One species of carp, called the mud carp will hover over the bottom of rivers, lakes, ponds, and streams and create a suction to the bottom surface. Certain carps can reach up to 5 times the weight they were born.

**Description:**

The carp has a brassy green topside shifting to gold on it's side and yellowed white underside. Fins may be golden, yellow, or orange in color. The carp lives a very long life and can reach up to 40-45 pounds.

## REPTILES

### Common Snapping Turtle

#### *Chelydra serpentina*

##### Habitat preference:

The Snapping turtle live in almost any body of water. The water must be shallow, mud-bottomed backwater and ponds with lush aquatic vegetation.



##### Cool Stuff:

The Snapping turtle will become aggressive, when approach land, but remains calm when in the water. Also they eat invertebrates, vertebrates and plants.

Description: The Snapping turtle is in cryptic shape of brown, olive, gray or black. The head is very large, has a hooked beak and has two chin barbells. It also has a liberal that covers the neck and the back, which is use for protection.

### Eastern Garter snake

#### *Thamnophis sirtalis*

##### Habitat preference:

The Garter snake lives in marshes, woods and also in wet areas such as rivers, lakes, streams and ponds.



### Purple Loosestrife

#### *Lythrum salicaria*

##### Habitat preference:

This species of plant is actually an invasive species that started growing in North America in the 19<sup>th</sup> century. Found only in wetlands, this plant is herbaceous, and a perennial.



##### Cool Stuff:

Purple loosestrife is also known as "purple plaque". Purple Loosestrife was first introduced in Wisconsin from which it invaded wetlands all over the United States. The U.S spends 45 million dollars a year to keep the growing under control. A single stalk can produce from 100,000 to 300,000 seeds per year. This herb disrupts wildlife habitat and takes control over other vegetations' growth.

##### Description:

Purple loosestrife is an herb that is 3-7 feet tall This flower appears in a dark magenta/violet color, and the plant is erect. The flowers have 5 to 7 petals and sprout in clusters, and blooms from July to September. A mature plant can have anywhere from 30 to 50 flower clusters. Leaves are opposite, nearly linear, and attached to four-sided stems without stalks

### Jewelweed

#### *Impatiens capensis*

##### Habitat preference:

The jewelweed live in openings of moist woodlands, partially or lightly shaded floodplains along rivers, edges of woodland paths, swamps, seeps, fens, and roadside ditches. Blooms in May through October in eastern North America.



**Cool Stuff:**

Wool grass often forms colonies of plants. The blooming of the wool grass occurs during the late summer to early fall. Also the wool grass prefers to have full or partial sun and moist conditions, in order to reproduce new plants and make them survive.

**Description:**

Wool grass consists of a clump of low vegetative shoot that branch off flowering stalks that is about 3-5 inches tall. The leaves are medium green, glabrous and closed. The leaves are 12mm across and 2inches long. The florets are pale brown and are pointed at both ends, which are surrounded by long bristles that are reddish brown, curly and persistent.

**Common Reed*****Phragmites australis*****Habitat preference:**

Most commonly found neared drained wetland over thousands of acres of land.

**Cool Stuff:**

Has no seeds in the summer or fall.

**Description:**

Common reed is a cane-like perennial grass that commonly grows from 12 to 16 feet tall, forming dense stands. Stems are round and hollow with flat leaves along its length.

**Cool Stuff:**

The Garter snake begins to reproduce as soon as it emerges from hibernation. Garter Snakes do not lay eggs. They have live young. The eggs remain in side the mother and when ready to hatch, the eggs hatch inside the mother. Also, it eats almost anything such as other snakes, rodents and all sorts of invertebrates, reptiles, frogs, and toads.

**Description:**

The Garter snake has longitudinal red yellow and white stripes on its back. The average length is, 2 to 3.5 feet.

## HERBACEOUS PLANTS

### Chicory

#### *Cichorium intybus*

##### Habitat preference:

It originated in Europe but was naturalized in North America where it has become a roadside plant. Often found in the fields and open ground.



##### Cool Stuff:

The roots are baked, ground, and used as a coffee substitute. It's also known as coffee weed, succory, and blue sailors.

##### Description:

Blue or lavender flowers. Green stems and roots are hardy and thick.

### Daisy

#### *Bellis simplex*

##### Habitat preference:

Daisies can be found almost anywhere in meadows, pastures, roadsides, and wastelands.



##### Cool Stuff:

Though the daisy is widely known by people everywhere, it is actually a weed and not a flower.

##### Description:

These commonly found flowers are noticeably white with yellow centers. They consist of many small petals.

### Pokeweed

#### *Phytolacca americana*

##### Habitat preference:

It grows in rich pasture lands, in recently cleared areas, along fencerows, in waste places and open spots in woodland.



##### Cool Stuff:

Animals do not voluntarily eat this plant unless there is no other forage available. Poisonous plant, the roots are the most poisonous. The Declaration of Independence was written in fermented pokeberry ink.

##### Description:

Can grow from 1 to 10 feet tall. Stems are often pink or red. The flowers that are greenish white will develop into black berries. This shrub is poisonous.

### Wool Grass

#### *Scirpus cyperinus*

##### Habitat preference:

Wool grass is commonly located in both sandy and non-sandy wetlands, including marshes, swamps, slough, sedge meadows, gravelly seeps and border of ponds.

