MARCH 15-31, 2015 NATURAL HISTORY NOTES FOR EASTVIEW
By: Dick Harlow

CRABAPPLE TREES

Dolgo Crabapple Tree, *Malus domestica*
Photo © Dick Harlow

EastView is very fortunate to have Bluebirds nesting on its campus. One of the main sources of omnivorous nutrition for Bluebirds, Robins, Catbirds, and others are berries. Their diet consists mainly of insects and berries. They don't eat berries all the time, primarily because berries have different times for ripening and they need to find the best nutrition available for their young in the spring. Insects are a very important nutritional source for these insectivores and fruit eating birds. But, one of the food sources that can carry a bird population through the winter are fruit trees with persistent berries.

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Sargent Crabapple Blossom, ***Malus sargentii***
Photo © Dick Harlow

Showy spring flowers that result in ultimate bird food for frugivore birds are crabapple trees.

If EastView is looking to increase the native bird population and the overall bird attendance on its campus, it might seriously consider planting some crabapple trees. There are specific types that are favorites for waxwings and Pine Grosbeaks, but whichever the frugivores favor so will Bluebirds, Robins and others. Just imagine waking up one morning in March and seeing hundreds of Bohemian Waxwings from northern Canada feeding on our berry trees. What a fantastic sight that would be!

Birds will be attracted to crabapple trees whose fruit is less than three-fourths of an inch in diameter. Also, if the fruit persists into winter it will attract more birds than those crabapple trees that quickly drop their fruit.

Crabapple Fruit, ***Malus*** **species**
Photo © Dick Harlow

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There are several cultivars that attract birds. "Sargent" is a cultivar that has a ¼ inch berry as well as "Sargent Tina", which is a similar slightly smaller cultivar. Other cultivars would be "Snowdrift" and "Adirondack." And, there is "Harvest Gold" which seems to have a resistance to Japanese Beetles.

The one thing we should avoid is to pick a cultivar that flowers and bears fruit only on alternate years. These cultivars produce a large amount of fruit on a particular year and then nothing the next year. There are also those trees that produce flowers, but do not produce fruit. And, then there are those trees that birds just will not feed from according to some state university extension services.

Best Bird Crabapple Cultivars

"Sargent" "Snowdrift"

"Sargent Tina" "Adirondack"

"Harvest Gold"

Cultivars to Avoid

"Bob White" "Evelyn"

"David"

Cultivars Birds Avoid Altogether

"Donald Wyman" "Red Jewel"

"Adams"

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POLLINATORS

Honeybee, *Apis mellifera* on Musk Mallow
Photo © Dick Harlow

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Fruit development is dependent on bees and other insects! Fruit is the developed ovule of a flower. All of our commercial fruit is dependent on pollen. The male part of the flower that produces pollen is the **anther** that is attached to a **filament** or stalk. These parts are called the **stamen,** the male part of the flower. The pollen's function is to fertilize the ovary. The **ovary** is attached to a long tube called the **style,** and the sticky **stigma** at the top end of the style collects pollen. The whole unit is called the **pistil**, the female part of the flower.

Notice the diagram below showing that the stigma is beyond the anthers where the pollen is produced. For fertilization to occur another agent such as an insect, hummingbird or bat is needed to pollinate this flower. Many flowers have evolved this way to accommodate fertilization.

Christmas Cactus Flower, ***Schlumbergera genera***
Photo © Dick Harlow

However, most flowers need specific pollen to fertilize the ovary. In other words, under natural conditions, the pollen of an apple will not fertilize the ovule of a pear. Or, the pollen of an aster will not pollinate the ovule of a zinnia. Each pollen grain has a specific chemical makeup that has to coincide with the same chemical makeup of the stigma. A pollen grain may start to develop a pollen tube in the style, but if it doesn't have the right chemistry further development will be stopped. Therefore, a bee that has visited an apple blossom, collects pollen, and when visiting a different apple flower will inadvertently distribute pollen to the sticky stigma of that flower. It doesn't make any difference how many other fruit species that bee has visited; if it has the right apple pollen, then the apple blossom is assured of fertilization and will produce fruit.

Some plants, such as corn and grass, use wind to primarily disperse pollen to the sticky stigma that is attached to the style. Other plants such as vegetables, flowers, blueberries and other fruit trees depend on outside help, called pollinators. There are many animals

that act as pollinators, e.g. bats and birds, but the most efficient are the insects that act either as primary pollinators or secondary pollinators.

Eastern Bumble Bee, *Bombus impatiens* on Zinnia
Photo © Dick Harlow

Bees, all kinds of bees, such as our Bumble Bee and Honey Bee, are primary pollinators; whereas a beetle or other insect might be a secondary pollinator because it is looking for a leaf meal, and walks over flower parts. The primary pollinators go directly to the flower's nectar and/or pollen source. By doing so they transfer pollen (plant sperm) from their body to the stigma of the flower, thus setting in motion the fertilization of the flower and ultimately producing fruit and seed. Without these insect pollinators, e.g. bumble bees, honeybees, flower flies, butterflies, etc., our vegetable, fruit and flower industry would be seriously jeopardized; some could be put out of business altogether.

A worker spraying an insecticide in a monoculture garden.
© StockphotoPhoto/Thinkstock.jpeg

What is happening to put pollinators in jeopardy? We produce very powerful and toxic chemicals to combat insects that cause damage to our crops. This allows us to grow crops in large monocultures, producing large amounts of produce. In so doing we also kill beneficial insects and each year our chemical labs are finding newer and deadlier ways to kill insects. Therefore, the misuse, the indiscriminate use of pesticides and insecticides, rather then first trying biological controls is a big part of the problem. This is especially true

with homeowners who do not tend to read instructions on pesticide/insecticide labels carefully, or are not willing to make the effort to find a beneficial alternative. Multiply this by the millions of homes in the US and Canada, and one can see why Bumble Bees and Honey Bees are in decline, as well as various beneficial butterflies. It isn't just the loss of habitat and climate change that is causing a decline in pollinators, but also the indiscriminate use of toxic pesticides and insecticides. The one group of insects we should be trying to save, the Bumble Bee and Honey Bee, to protect for our own self-interest, we are slowly extirpating from various locales. Scientists, biologists and agriculturalists are worried. But, if there is to be a solution to the problem it must be accepted and understood by the average person.

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One of the First signs of Spring !!

Common Dandelion

The pugnacious dandelion, that weed of lawns and gardens that many gardeners look at with disgust and loathing, and will try to eradicate with herbicides; but, will exclaim how beautiful a farmer's field is whose dandelions are showy and in full bloom!

Most people would consider this plant a weed whether you are looking at a lawn where you only want grass to grow or see it along roadsides. Roadsides, maybe not so bad, but lawns are a problem. When in flower, the yellow flower heads can give a sense of beauty to a field, but when it goes to seed, that symmetrical ball, called "blowballs" has hundreds of viable seeds within the ball, that the wind will blow off the stem and send scattering to your lawn, or wet piece of soil in the garden or along the roadside and field somewhere. Wind blown seeds are an excellent dispersion method that has evolved in moving seed to new places to germinate.

The Dandelion is also one of our first wildflowers of spring. Yes, we have bulbs planted in the garden, and they flower either before of just after dandelions, but dandelions are one of our first wildflowers seen in open windswept and protected areas.

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Common Dandelion, *Taraxacum officinale*
Photo © Dick Harlow

Notice the tall flower stem in the above picture. Tall stems are a dominant characteristic of dandelions as demonstrated by this picture.

Lawns do not have tall dandelion stems because they are mowed regularly. Interesting point here! To procreate, dandelions need to flower, produce pollen and fertilize to generate seed. A dandelion plant has the ability to compensate for being cut on a regular basis and to adjust its growth so that future generations of that particular plant will grow short. Short enough so that a lawn mower will not cut the flower. Genetically some plants will adapt so that they will produce seed, representing the future of the species under good or poor situations.

Common Dandelion flower head, *Taraxacum officinale*
Photo © Dick Harlow

Thus, this characteristic becomes a problem for gardeners when a lawn mower can initially cut the flower, but can't get rid of these pesky weeds. Although many homeowners will not pay particular attention to a flowerless dandelion, the plant will continue to throw out new

buds and eventually will flower close to the ground and eventually go to seed. Because of their deep tap roots dandelions can survive difficult climatic conditions. Unfortunately, unless dandelions are dug up by hand many homeowners will revert to herbicides.

The one condition that dandelions have a hard time with is germinating in heavy turf, whether it is an athletic field or a lawn. Being crowded out of a lawn by solid turf is their nemesis. When the lawn grass is well cared for-not cut too short, is vigorous with well-developed dense grass leaving no space between plants, there will be little room for a pesky dandelion to take hold. In this way one has a natural way to develop turf with no need for herbicides.

Common Dandelion seed head, *Taraxacum officinale*
"blowball" Photo © Dick Harlow

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Our Red-tailed Hawk, *Beteo jamaicensis*
AKA (Jayco) 3/23/15 Photo © Dick Harlow

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MAMMALS OBSERVED in MARCH

- Gray Squirrel (visual, feeding below bird feeders)
- Eastern Cottontail Rabbit (visual, tracks and scat)
- Striped Skunk (odor)
- Red Fox (scat)
- Eastern Coyote (heard)

Weather Tidbits

All Measurements taken at solar noon (1130 EDT).

MARCH PRECIPITATION

MARCH 2015 Total Precipitation: 30.8 mm or 1.2 inches

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Precipitation includes rain and snow melt.

Snow Days: 6

Snowfall for MARCH 2015: 145.3 mm or 6.1 inches

MARCH Overcast Days: 11

MARCH WIND

Highest wind gust: 37 MPH, MARCH 17th Direction: North

Average Wind speed for MARCH 2015: 4.5 mph,

Dominate Wind Direction: North

Days w/wind gusts 20-30 MPH: 21 Days w/wind gusts >30 MPH: 10

MARCH TEMPERATURE

Mean Temp: -1.8 C^0 28.8 ^0F

High Temp: 13.8C^0 56.8 ^0F

Low Temp: -26.3C^0 -15.3^0F

MARCH DAY NUMBERS FOR:

Max. Temp: 0.0 C^0/32^0F: 11 days

Min. Temp: 0.0 C^0/32^0F: 26 days

Min. Temp: -18 C^0/-0.4F: 3 days