

Cooks Creek Watershed Association Current

"To protect, preserve and improve the quality of water, land and life in the Cooks Creek Watershed"

Volume 15, Issue 4

Newsletter of the Cooks Creek Watershed

Fall 2018

2018 Events

Regular Board Meetings:

Springtown Fire House- 7:30PM

4th Thursday of the month except Nov. and Dec. which is the 3rd Thursday;

All are welcome! We appreciate your involvement

Special Events



See back for details!

We're on the web!
www.cooks creekpa.org

Cooks Current is a publication of the Cooks Creek Watershed Association.

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From Across the Board...

Our fall dinner on October 6 featured a visit from Rebecca Kennedy, the President of the Lehigh Valley Watershed Coalition. Rebecca also heads up the Master Watershed Steward program at Penn State, and she started out explaining this program and the opportunities that are available for our members to take advantage of this training. Those accepted to the program attend 40 hours of training classes (12 week-day evenings and 3 Saturdays) that focus on a broad range of water resource topics, including groundwater, stream ecology, wetlands, invasive plants, water recreation and stormwater management. The program has a one time fee of \$125 (contact me, there are scholarships available). If you are interested, there is more information available at <https://extension.psu.edu/programs/watershed-stewards>. Rebecca devoted the rest of her time to a very interesting presentation on the dangers of microplastics in the environment. Many millions of tons of plastic have been improperly disposed of over the years, and much of this ends up in our waterways. While most of us know that this plastic debris is an eyesore, and a hazard to wildlife, few un-



Annual Fall Dinner with Rebecca Kennedy from the Watershed Coalition of the Lehigh Valley.

derstand that the nature of plastic and how it decomposes makes it hazardous in a third way. As the material breaks down in the presence of ultraviolet light, the extremely small particles end up entering the food chain, and eventually can impact us. Obviously, reducing our use of plastics is the most effective thing we can do about this, but it is also important to cleanup discarded plastic to keep it from entering waterways and decomposing. By the time you read this our fall roadside cleanup will have passed, but please put the first Saturday in April on your calendar now for next year's spring cleanup.

Springfield Township celebrated its 275th year with a

special community day on September 22. The CCWA tent was there all day, with a special historical perspective illustrating the changes in the watershed over the years. We have collected maps from many different time periods, some dating back to the 18th century! We also had copies of an autobiography by Durham/Springfield resident John A. Ruth (1859-1918) for sale, which references the Creek and its importance to the region. If you'd like a copy, send me an email at info@cooks creekpa.org. They are \$10 each, just enough to cover the cost of the photocopying. In addition to the historical presentations, we also conducted

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two benthic invertebrate/water quality workshops; a simplified version of our popular mini-monster mayhem.

In an effort to reach out to a wider audience, CCWA assisted the Fry's Run Watershed Association (Williams Township) with their river festival by conducting a water quality and benthic invertebrate workshop creek side in Raubsville on September 29. Attendees were given a short water quality and watershed management talk and then were given the opportunity to search through trays of stream detritus to find caddisflies, mayflies, stoneflies and other denizens of their creek. We discussed the possibility of having a multi-watershed river festival in upcoming years where we might highlight a different watershed every year. Sound interesting? Drop me a line and let me know what you think.

Our stream gage rehabilitation project is spinning up; consulting engineers Princeton Hydro have performed an evaluation of our stream gaging stations and are preparing their recommendations. By the time you read this, we will have conducted a round of sampling and testing of the water at five locations around the watershed in Pleasant Valley, Springtown and Durham. I will be sharing the results with you via our website and Facebook, as well as upcoming newsletters.

Finally, CCWA officially intervened in the Adelpia Pipeline project in the watershed. For now, this simply means that we have the ability to receive and review documents on the project. For those of you who might not know, this project involves changing an existing low pressure liquid petroleum pipeline into a high pressure natural gas pipeline. The pipeline connects refineries in Marcus Hook to power plants in Marshall's Creek and goes right through the heart of the watershed from north to south on the west side of Springtown (see map below). When this pipeline was first proposed in the early 1970s it was the impetus for the gathering of neighbors that eventually resulted in the founding of the CCWA! We are particularly concerned with the proposed increased use of a piece of forty year old infrastructure that has been prone to multiple problems over the years. I am suspicious that while no work is currently proposed to be conducted in our watershed, Adelpia will change their minds once all the other permits have been issued, making it harder for us to require the special care that should be taken to protect our precious Creek. An environmental assessment document is scheduled to be released in January of next year. We will make sure it is available to you so you can read it. To learn more, attend the information meeting at the Springtown Rod and Gun Club on November 20 from 7-9pm, or go to Facebook page of Concerned Bucks County Citizens Against the Pipelines.

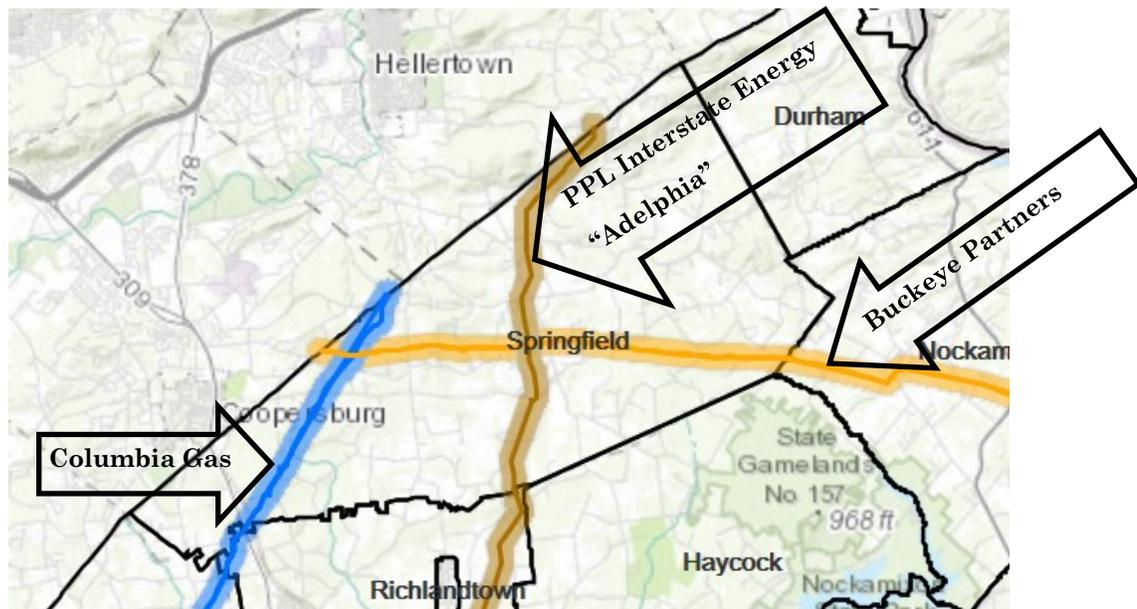


Image courtesy of Bucks County Planning Commission GIS viewer.

Yours in conservation,

W. Scott Douglas, President



Botanical Focus: Crabapple (*Malus*) By: David Oleksa

This is the 9th installment in a series of articles on the flora of the Cooks Creek Watershed.

Have you ever heard anyone described as being a real crabapple? What does that mean? Mostly, it means that they have a sour disposition. If you've ever tasted a crabapple you will surely note that it is indeed sour.

Many people are surprised to learn that the sweet apples that we love to eat and the small round sour fruit that we call a crabapple are actually the same fruit, botanically speaking. Someone made a decision that a tree producing apples no larger than 2 inches in diameter would be called a crabapple; while those cultivated varieties whose fruit was larger than two inches would be called apples.

There are many varieties of crabapples and most are grown for ornamental purposes. One reason for this is because the trees are visually spectacular with accents and attributes that will enhance every landscape for all four seasons of the year. In spring, the buds of the leaves and unopened flowers change gradually through a series of colors and very often the colors displayed during the early stages of budding are remarkably different from the flowers that actually emerge. When the flower petals fall, the rich colored foliage provides a beautiful sight throughout the summer months. As summer turns to autumn, the leaves start to change into a multitude of colors and the fruit becomes more visible with vibrant tones of red, orange, or yellow. Even in winter, this tree is able to show off since snow accents the remaining fruit and sets off the shape of the tree which can be upright, pyramidal, weeping, rounded, spreading, or vase-shaped. It is no wonder that many people insist on having a crabapple tree as part of their landscape.

The trees vary in size with some varieties rarely exceeding 8 feet in height while others can grow to 40 feet. The fruit provides food for birds and animals and is especially important since many of the crabapple trees retain the fruit well into and sometimes through the winter, providing nourishment through what otherwise would be lean times.

Humans have found a culinary use for the crabapple as well. The fruit contains an enormous amount of acid and pectin which allows it to "jell" readily. Thus, the fruit is used in making jellies sometimes alone and sometimes mixed with other fruits such as berries. Another favored jelly is made by adding a few chili peppers to the crabapple jelly resulting in a sweet but tart treat with a bit of heat that works really well with roasted meats. For those who enjoy alcoholic beverages, a special treat is made by mixing crabapples with sugar, covering with vodka and allowing the mixture to steep for three months. Strain and enjoy a golden colored liquid that is redolent with the aroma of apples.

You can see from this short article that the crabapple, despite a lot of negative publicity that it has garnered is actually a tree worth praising. The next time you are described as a crabapple, take heart; maybe you're being complimented.



Children's Backyard and Activity: Patterns in Pinecones – Fibonacci Numbers and Lucas Numbers *By: Lois Oleksa*

Have you ever picked up a pinecone and wondered if the scales have a pattern? Sometimes it is hard to see the pattern but if you take the pinecone and soak it in water, the pinecone will close up and the pattern will be seen.

Patterns can be seen all around us; in the manmade world and in the world of nature. When you come to a stop light, you can see all stop lights have the same color pattern; Red, Yellow, Green. There are patterns in numbers such as 1,2,3,4,5 which could represent the number of fingers on a hand. And then there are big number patterns. What if you saw a series of numbers such as 0, 1, 1, 2, 3, 5, 8, 13,....? Could you fill in the rest of the sequence? This number sequence seems so random; do you know where it came from and what this sequence is called?

The numbers 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987,.....and more are called **Fibonacci Numbers**. This number pattern comes from taking one number and seeing that it is the sum of the preceding two numbers. For example: $0+1=1$; $1+1=2$; $1+2=3$; $2+3=5$; etc.

Where did these numbers come from? In the year 1202, a man called Fibonacci, formally Leonardo of Pisa, worked on an experiment to see how many rabbits would be produced if he started out with a pair of rabbits. He counted the pairs of rabbits produced in each generation. Making a rabbit family tree as we make our family trees with a listing of our pairs of parents, grandparents, great grandparents, etc. He noticed a pattern; this was the Fibonacci Number Pattern.

Plants, fruits and leaves and pinecones show the Fibonacci Number Pattern. Counting petals on flowers will give you a number in the Fibonacci Number Pattern. Buttercups have 5 petals. Counting the ridges on a poppy seed plant seed head you will find 13 ridges on top. Echinacea, a member of the daisy family, has orange "petals" in its center which are arranged in spirals curving both to the left and to the right. And, so do pinecones. Pinecones have spiral patterns that can be counted; when counting the spirals to the left and to the right you'll get a number that is a Fibonacci number.

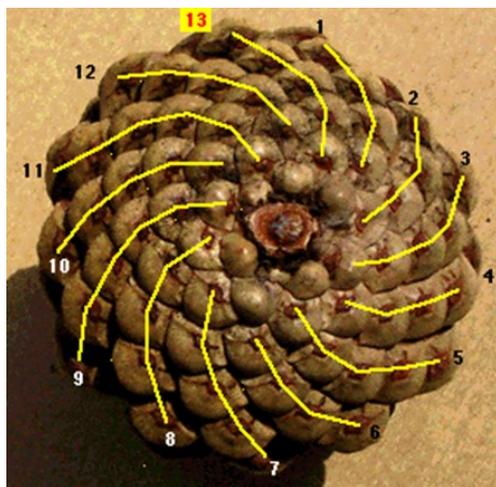
Take a look at a pinecone; look at its base where the stalk connects it to the tree. Count the spirals in both directions using the picture below as a guide. This pinecone has 13 spirals to the left and 8 spirals to the right. Both 8 and 13 are Fibonacci numbers. Try a variety of pinecones from the same tree and try other pinecones from other pines. The spiral numbers will be two Fibonacci numbers in sequence.



When you count the pinecone scale spirals you may find the secret hiding behind the scales. The scales are protecting the seeds of the pine. When the pinecone first drops from the tree it tightly encloses the seeds. As the pinecone dries out the scales open up and the seeds can fall out. Why do the seeds and scales form in a Fibonacci Number Pattern spiral? Have you ever tried packing a box? What is the most efficient way to get the most into a box? Seeds in seed heads (boxes) are always equally spaced but the rows are slightly adjusted so one row fits tightly next to the following row – just as you would pack a box. This causes a spiral pattern to form.

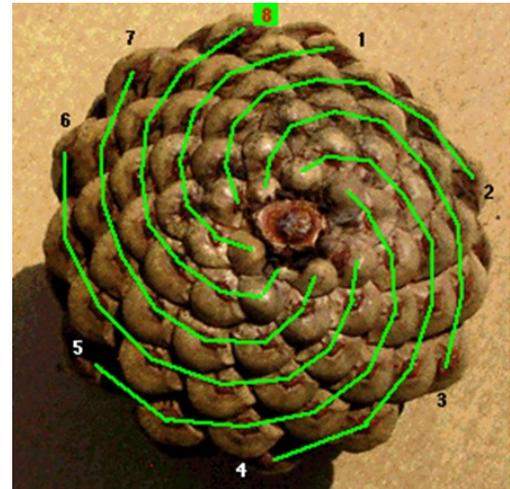
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Pinecone – 13 spirals to the left.

Pinecone – 8 spirals to the right.



Patterns that develop in plants as they grow are usually the same. Plants have a growing tip called a meristem from which the new plant part develops. Sometimes this growing tip is damaged and a whole new sequence of a patterns develops. The injury at the tip causes a new number sequence to develop, but it develops in an orderly fashion thereafter. You may have looked for the 4-leaf clover which is a 3-leaf clover mutated in its development. Something happened at the growing tip.

Have fun looking at all kinds of plants, leaves, flowers and fruits. Count the spirals in a cauliflower or the spirals of leaves attached to a stem. Count the petals on flowers. Look at a pineapple and see the spirals; a magnolia seed pod and its spirals. Take apart a head of lettuce starting at the outermost leaves. Cut open a banana or apple horizontally. Look at a bell pepper. You should be able to find some Fibonacci number connections.

But is it always the Fibonacci numbers that appear in plants? Remember the 4-leaf clover? Yes, some plants and flowers are different and are not part of the Fibonacci number pattern. Some flowers have 4 petals – fuschia; and look at some succulents and cactus – 4 and 7 spirals, 11 and 18 spirals. Not all plants show the Fibonacci numbers!

Another common series of numbers in plants are the **Lucas Numbers**. These start with 2 and 1 and then, just like the Fibonacci numbers, have the rule that the next is the sum of the two previous numbers. And the Lucas Numbers go like this:

2, 1, 3, 4, 7, 11, 18, 29, 47, 76, 123, 199, 322, 521, 843, ...more.

A really interesting and entertaining YouTube video can be found at:

[Doodling in Math: Spirals, Fibonacci, and Being a Plant](https://www.youtube.com/watch?v=ahXIMUkSXX0)
<https://www.youtube.com/watch?v=ahXIMUkSXX0>

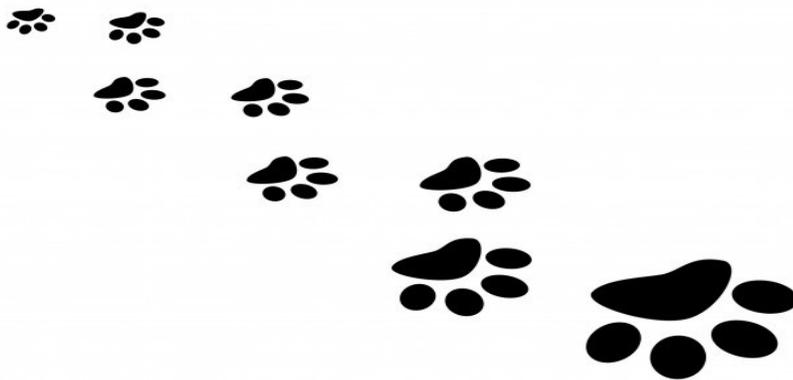
Green Tip #44: Making Pet Ownership Environmentally Friendly; Getting Fido Doesn't Mean Trashing Your Green Ideals

Emily Folk is the editor of Conservation Folks. She writes on topics of sustainability, conservation and green technology.



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The Twenty First Century, Age of Plastic

By: Jim Orben

In the 1967 movie "The Graduate" when Ben Braddock was told the one word that could be his future in the modern world I laughed along with the rest of the audience. How could "plastic" hold such promise? I was soon to graduate from high school and start college. I too needed some direction and "plastic" just seemed so, so plastic! Well, as we have seen, plastic has become our world, or better said, our world has become plastic. With so many things made of plastic in so many places and in so many ways there must be a way to close the loop on the resources that are used to create this ubiquitous substance. There must be a way to not waste this resource, a way to remove plastics from the waste stream, the roadsides, the oceans, and our bodies.



Plastic is a very multifaceted material. In 1967, there were only a few types of plastic in use. Now when I put a plastic bottle in a recycling bin there are seven choices. There are thousands of compounds that fit into these seven categories; thousands of compounds that don't necessarily mix together in reuse as easily as they do in a single-stream recycling container. This mixture calls for a very labor intensive sorting out at one end of the recycling process or the other.

Plastic is very durable. Since the age of plastic began in the early 1950's 8.3 billion metric tons of plastic have been created. Of that total 996 million metric tons have been incinerated and 747 million metric tons have been recycled. That leaves 6.6 billion metric tons of plastic somewhere on the surface of the earth. This huge amount of material is accumulating in landfills or sloughing off in the natural environment as litter. The final resting place for litter is the ocean, where this plastic interferes with sea life at all levels. The oceans wear down the land to make sand. Oceans also wear down plastic litter to make plastic sand and plastic bits that float in the water column to be eaten by creatures that are in turn eaten by humans. So it seems that what goes around comes around, and what we thought was discarded has actually come back to us in unexpected ways.

What are we to do? Plastic is here to stay, both literally and figuratively. Plastic has become hugely important to the living of our modern lives. The convenience of using something once and then tossing it away must be recognized as a false economy as there is no "away" to toss it to. The European Parliament backed a ban on plastic cutlery and plates, cotton swabs, straws, drink-stirrers and balloon sticks. This small step will go into effect by 2021. One MEP said, if no action was taken, "by 2050 there will be more plastic than fish in the oceans". But it is just a small step. So many more much larger steps must be taken. Recycling must increase to reuse a meaningful percentage of all our plastic. Norway has been able to recycle 92% of its plastic drink bottles back into plastic drink bottles, over and over again. Less than 1% of Norway's plastic bottles end up in the natural environment. Why is this not happening in the United States of America? Plastic should be made from plastic just as paper should be made from paper allowing us to save valuable raw materials for more durable items with more meaningful uses.

Creature Feature: Monarch Butterfly (*Danaus plexippus*) By: W. Scott Douglas

This is the 46th installment in a series of articles on the fauna of the Cooks Creek Watershed.

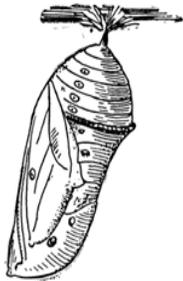
Every month or so I receive a memo from the Fish and Wildlife Service outlining the actions the agency is considering under the Endangered Species Act. Most folks think of the Endangered Species Act as a law and program that protects the iconic or unusual, like bald eagles and wolves, or snail darters. Obviously it does much more than that, but many of the animals and plants listed are so localized in their range that most people have never even heard of them, much less seen them. So I was shocked when I read in this month's memo that the Monarch Butterfly was being considered for listing as Endangered. The Monarch Butterfly? Perhaps the most widely recognized insect in the US is endangered? How could that be?



When I looked into it further I found out that overwintering Monarch populations east of the Rocky Mountains have dropped 90% since 1995. It is estimated that there are more than a billion fewer Monarchs in North America since 1990. That's a lot of butterflies. What's going on? As usual, the reasons are complex, but the greatest pressure is loss of habitat. The vast expanses of fallow farm fields that typified much of the rural US has either grown over to shrubs or reforested, or been developed for residences. The farms that are left apply modern pesticides like glyphosate to control or eliminate the only source of food that Monarch caterpillars can use, the equally iconic Milkweed.

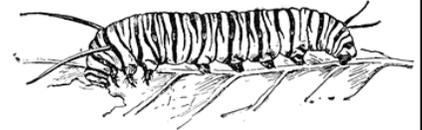
As I tell my Scouts, understanding conservation starts with understanding natural history. While I, like most of us, learned about metamorphosis by studying the Monarch's life cycle, it is important that we are all on the same page. The Monarch's habitat ranges from southern Canada to northern South America, with most of the population being in the US and Mexico. Monarchs have multiple generations, sometimes as many as four every year. They are marathon migrants too, with some adults traveling thousands of miles in their lifetime.

Every Monarch starts out as a 1-mm long conical cream-green egg laid singly on the underside of a milkweed leaf. After 3-8 days it hatches into a caterpillar that immediately starts to eat the leaf it is born on.



Monarch caterpillars are only able to survive on milkweed leaves.

There are many species of milkweed, but there needs to be enough in close proximity to the hatch site to sustain the caterpillar through 5 instars, or molts. After its last molt it will be 25-45 mm long and 5-8 mm wide, with white, yellow and black transverse stripes and two sets of long thin tentacles. When it is ready to pupate it will climb under the milkweed and hang upside down and molt one more time into a pale green and gold chrysalis. After 8-15 days as a pupae, the adult emerges and flies away. The whole process takes 1-2 months at most. The adult feeds on nectar from milkweeds and a variety of other plants including Joe Pye Weed, asters, black-eyed Susans and goldenrods.



Planting these will help Monarchs and other native pollinators.

Unlike many endangered species, there is actually a lot that an individual can do to help. And it's not that hard. Planting native species, like the milkweed, in your garden or on the edge of your yard is a good way to fight invasive plants and encourage birds, bees and butterflies at the same time. In time, you may be privileged to host some adults during their fall migration, or some caterpillars during the summer. Some folks feel that raising and releasing Monarchs is an easy way to help the species, but this is actually not true. Keeping many butterflies in close contact encourages parasites and other health problems, so best thing to do is to open up your garden as a butterfly B&B. One other cautionary note is that the very popular (and invasive) butterfly bush can actually harm Monarchs. The butterfly bush has been cultivated to contain nectar that is too high in glucose and too low in other essential nutrients. It's butterfly junk food!

Most of us can recognize the common milkweed with its wide fuzzy pale green leaves, milky sap and pendulous pink flower clusters (pictured). Not to mention the fall seed pods full of silky white parachutes. There are many different species of *Asclepias* milkweeds and there is probably one native to every habitat in the US. The most common in our area are common milkweed, swamp milkweed and butterfly weed (orange flowers, not pink). All three are native to our Watershed, but the swamp milkweed can only grow in wetland soils. While milkweeds can be transplanted, most nurseries carry milkweed varieties, especially if they cater to rain gardens or native plants. For more information on how to build a butterfly garden, or a rain garden containing milkweeds, check out **Project Milkweed at xerces.org**.



Some Thoughts on Apples By: Stephen H. Smith

Introduction

If one closely observes the shape of a leaf from an apple tree the resemblance to the leaf of a rose bush is striking, and in fact the blossoms of apple trees remind me of the dog rose, the single *Rosa canina*. Apples are in fact members of the rose family. There are at least six-thousand known apple cultivars. Hundreds of varieties are available from various sources, although perhaps only a dozen apple types are commonly found in the produce section of the neighborhood supermarket.

I will share a few thoughts with you about various aspects of growing apples, including harvesting, storage, and preparation of a couple apple dishes.



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Site Selection

Whether you are planning a modest sized orchard of about one hundred trees or only several trees you will need space. Before the advent of dwarf and semi-dwarf trees the trees were known as “standards” and planting was usually limited to about fourteen per acre. Today, with modern trellis techniques, one can plant as many as fourteen hundred trees per acre!

Trellis systems offer many advantages to the commercial grower and may be a way for the serious amateur to grow large quantities of apples in limited space. The major drawback is the investment in the high tensile trellis infrastructure. For most home growers, free-standing semi-dwarf trees remain the most popular way to raise apples. While, in a trellis system, the trees can be planted in rows, 2.5’ to 3’ on center, free standing semi-dwarf trees are best planted at least 20’ apart.

There are several important considerations for site selection. Apples need full sun to flourish and to ripen (convert starch to sugar). The soil should be of reasonably good quality and soil testing is recommended. Good drainage is imperative.

Cultivar Selection

When choosing the varieties you might wish to plant consider looking for those with high or reasonably good disease resistance, especially to the locally endemic *cedar apple rust*. It is not true that *cedar apple rust* will not kill an apple tree if severely infected, especially if the foliage is severely affected for several successive years. Wet springtime weather is altogether nasty business for the apple grower and in susceptible cultivars such as Jonathan, bright orange spots on the leaves spell trouble from the apple rust fungus spores traveling from the ubiquitous juniper.

I do not recommend summer ripening types, they seem especially disease prone and the flesh is often rather soft and unpleasant. The late September through early November ripening apples seem generally to be more disease resistant and to have a firm, semi-tart flesh.

In my little orchard I use the early fall ripening types for applesauce and apple butter and the later varieties for cider and apple crisp. Some of my personal favorites are Winecrisp, Yellow Delicious (one of the best cider and applesauce apples), Winesap, Granny Smith, Macintosh, Gala, Mutsu, Northern Spy, and the very late ripening (November 5) Pink Lady.

Unfortunately retail catalogues generally offer little information about the downside of certain cultivars, making almost every variety sound like the best apple ever grown. Commercial (wholesale) catalogues seem to give an honest picture of the challenges a given cultivar will present to the grower.

Planting

Most apple trees arrive from the nursery with bare roots wrapped with moistened shredded newspaper or wood shavings (excelsior). After unpacking, the roots should be soaked in a bucket of water for twenty-four hours before planting. It is important that the roots not dry out, therefore, it is advisable to

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move the tree from the bucket of water directly into the hole which has been dug wide enough and deep enough to accommodate the root system. It is permissible to prune the roots a bit so they are not bent in the hole.

If the tree has been grown in a plastic tub it may be root bound in which case it is advisable to break up the thick mat of roots with a knife or edge of a sharp shovel before planting. Watering is essential but should be limited to about five gallons a week. An easy way to accomplish this is to drill a tiny hole near the bottom of a five gallon bucket, fill it to the top once a week and let it drain out slowly with the hole a few inches from the trunk.

All apple trees are grafted and the bud union or graft scar is easily observed just above the roots at the base of the trunk. This must remain at least several inches above grade when planting. If the bud union is buried the dwarfing effect from the root stock will be lost. For every inch the bud union sits above grade the tree will be dwarfed by 10%.

It is not recommended that young apple trees be staked unless they are on the type of root stock developed for trellis cultivation. It seems a healthy root system requires some degree of wind-generated motion of the young tree. Very young trees will come as "whips" without any branches. It's probably worthwhile to pay more up front for well-branched trees several years old. It means the difference of waiting five to six years in the case of a whip rather than three to four years to begin harvesting apples from a well branched tree. I also find tree mortality to be higher with whips than with a tree with at least several branches.



Protection

There are several preventable causes of early demise of young apple trees. Both Roundup and 2,4-D herbicides will kill a young tree if the spray contacts the bark. Weed whacking around young trees should be done with utmost caution as even brief contact will girdle the tree and kill it. Saplings are a favorite target for white tail deer buck looking to rub the velvet off their antlers in late summer and fall. I have lost dozens of young trees from deer completely girdling the trunk. Do not neglect to cage your trees by late August! The cages can be removed in the spring. Meadow voles are prone to girdle trees, especially under the snow, and this is not easy to prevent. Close fitting hardware cloth cages can be tried but must be removed in the spring or the trees will grow through them. The same precaution obtains with spiral wrap-around white plastic tree protectors.

Painting trees from ground to branching with white latex paint is helpful in preventing sunburn of the tender bark from the glare off snow and ice in the winter and may also be beneficial in lessening insect damage.

A heavy burden of weeds, especially weeds such as dandelion with deep tap-roots, can reduce the vigor of young trees as the roots of the weeds encourage the invasion of harmful microscopic "dagger" nematodes.

Always read the labels of sprays carefully to avoid damage to the foliage. Certain combinations of sprays can be harmful as can improper dilution and spraying at the wrong stage of growth. Certain cultivars seem to be less tolerant of certain sprays and therefore, careful research of the labels is essential. Certain spray compounds may also cause a significant russet effect which in no way affects the quality of the flesh of the apple.

Cultivation

In addition to adequate watering, properly timed spraying with the appropriate fungicides, insecticides, and micronutrients will be necessary to achieve a bountiful healthy apple crop. If you are committed to the "organic" approach you will most likely be discouraged trying to grow apples in the Northeast. Traditionally the growing season is divided into: dormant, silver tip, half inch green tip, pink, bloom, 90% petal fall, pre harvest, harvest, post-harvest.

Spray schedules and an abundance of useful and important information can be found in the [Penn State Tree Fruit Production Guide](#). (Order online or call 814 865-6713). Many listed sprays no longer require a private pesticide applicator license nevertheless it is extremely important to follow the directions on the labels exactly. "Integrated Pest Management" or "IPM" is a system, scientifically developed, to maximize the benefits and minimize the downside of pest management. It is always evolving and up to date methods can be found in the [Tree Fruit Production Guide](#).

Pruning is best done in late winter. Many apple trees are "spur bearing" and hard pruning to allow for good air circulation and the ingress of sunlight is beneficial. Some cultivars such as Yellow Delicious are "end bearing" and, therefore, lighter pruning is recommended. Prune to remove both excessive branching and vertical growth as fruit bearing only occurs primarily on branches that are horizontal or down sloping. Manually tying branches with string from the up-turned or vertical position to a horizontal position is useful in training young trees to be more bountiful. This can be labor intensive and is easier when using trellis systems.

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I was once told to use the dead cat rule in pruning and it's actually pretty useful. Prune hard enough (removing the smaller branches, especially ones that cross over each other) so that a dead cat would not get caught if thrown into the tree. Sorry cat lovers, I can't think of a satisfactory substitute but I assure you that this is totally theoretical...I've never used an actual cat, dead or alive for this.

Harvest and Storage

If one wishes to store apples for the winter months it is best to harvest the apples when mature but not quite ripe. Refrigeration is essential and some cultivars store much better than others. Apples will continue to convert starch to sugar once harvested (ripen) but the quality of the apples will slowly deteriorate with time. In commercial operations various gases and treatments, not available to the home grower, are used for prolonged storage.

When picking apples it is advisable to use a twisting motion to break the apple away from the fruit-bearing branch to avoid damage to the spur or branch. Apples that fall to the ground will most often have a defect through the skin or a less visible bruise in the flesh that will affect their quality in storage. Shaking trees or branches to harvest apples is not advised.

There are several simple ways to tell when a given cultivar is ripe. When apples begin to fall spontaneously from the tree, when the green color of the flesh has turned completely white, and when the taste has turned from tart to sweet are practical ways for the home grower to gauge ripeness. Beware, however, that when apples begin to fall from the tree, one may only have a few days at most before the white tail deer have cleaned up the entire crop from the floor of your orchard.

Probably the most practical way to "store" apples is to convert them to forms that can be frozen or stored on a shelf. Apple chips are delicious and can be made by thinly slicing apples on a mandolin then dehydrating them in a dehydrator or in the oven at a low (180 degree) temperature. Applesauce, apple butter, and apple cider are excellent ways to enjoy your crop year round.

I make a lot of apple sauce each year and have developed a pretty efficient technique. I peel the apples using a 7/8" Speedbor drill bit in a cordless drill pushed about half way through the apple from the calyx end. It's good to do this on a cutting board placed in the bottom of a kitchen sink. Using a T-shaped peeler in one hand, spin the apple on the cordless drill in the other hand. The apple can be peeled in about two seconds. I personally prefer to core and slice the apples before cooking. Once the pot is filled with the apple slices (use several kinds of apples with Yellow Delicious predominating) I pour in about two cups of dry white wine. "Turing Leaf" pinot grigio is inexpensive and works well. I also add a cup of cider vinegar. Cook until quite soft and then when slightly cooled put through a food mill using the coarse plate. I add some sugar to taste along with cinnamon and a pinch of ground cloves. Little heart shaped candy "red-hots" give a nice color and add a little cinnamon flavor as well as sweetness. They dissolve well when the applesauce is still hot. Applesauce keeps extremely well when frozen.



Back to the Past: *Autobiography of John A. Ruth 1859-1918*

A column highlighting the natural history of the Watershed. The following is a paragraph describing the pools in Cooks Creek.

Along the course of the stream were a number of deep pools that were known to the residents by special names. Some distance below the Springtown bridge, and not far from Brodt's handle factory, was a comparatively wide expanse of water, with a number of rocks in it, known as Rocky Pond. Another of these pools was named Hickory Hole from the Hickory trees near by. Chub Hole and Sunfish Hole were named from their predominating species of fish. Horse Hole and Sheep Hole were the pools where the farmers washed those animals.

Scanned and taken from the *Autobiography of John A. Ruth 1859-1918* book which the Cooks Creek Watershed Association had reprinted. The book may be purchased for \$10. Send a request to www.info@cooks creekpa.org or Cooks Creek Watershed Association, PO Box 45, Springtown, PA 18081.

Martiton Wildlife Sanctuary : “Walk in Penn’s Woods” program on October 7th



Tim Burris, manager, speaking at Mariton.



A walk in the Mariton Sanctuary.



Mushrooms come in all shapes and sizes.

Current Interesting Info...

Community Day in Springfield



Lorna Yearwood as a Spotted Lanternfly



CCWA Tent

Photos by Debra Orben

Riparian buffer planted by CCWA and Trout Unlimited at the Springtown Firehouse



Recycle! Local Recycling Information

Durham Township Recycling Center

Location: Municipal Building, 215 Old Furnace Rd, Durham

1st Saturday of every month (2nd Saturday if 1st Saturday is on a holiday weekend)

Hours: 8:00AM – 12:00 noon, 1:00PM-4:00PM, (call ahead)

Accepting newspapers, magazines, junk mail, phone books, glass, tin, plastic, aluminum and cardboard, and CFL bulbs, rechargeable batteries (during office hours).

Please note that this facility is available to all, not just Durham Township residents!

Contact Dani McClanahan at the township building for more info. 610-346-8911

Springfield Township

Location: Township Building, 2320 Township Road

Paper Recycling Bin Available at Township Building.

A Recycling bin was recently placed here and is available to anyone. Cut down on trash and help the township earn extra money. You can drop off: Magazines, Shopping Catalogs, Phone Books, Newspapers, Office and School Papers, Mail.

Please do NOT include: Plastic, glass, metal, trash

Hours: Anytime ; See website: www.springfieldbucks.org or call 610-346-6700.

Blinderman & Son

Location: 1320 Whitaker St, Hellertown. 610-838-9221

Hours:
7:30AM – 4:00 PM, Monday – Friday

7:30 AM – 11:30AM, Saturday

Accepting cardboard and most metals.

City of Bethlehem Theis/Cornfeld Recycling Center

Web site: www.bethlehem-pa.gov/recycle/services/theis_cornfeld.htm

Location: 635 Illick's Mill Rd, Bethlehem

Phone: 610-865-7082 Hours: Weekdays: 9AM to 5 PM, Saturday 9 AM to 4 PM, Sunday 11AM to 4 PM

Accepting glass, cans, plastics, newspapers, all books, magazines, catalogs, cardboard, mixed office paper, metals, textiles (clothing, shoes, etc.), large appliances (certified freon-free). Call or go to the web site for specifics.

Bonus!! They provide FREE on site shredding services for businesses and private individuals. If you have 4 or more boxes, call 610-865-7082 to schedule an appointment.

Schedules of Local Government Meetings

Springfield Township:
www.springfieldbucks.org
610-346-6700
2320 Township Road

Supervisors: 2nd Tuesday @ 7:30 PM
Planning Commission: 1st Wed. @ 7 PM
Supervisors/Planning Commission
Work Session: 3rd Thurs. @ 7 PM
Environmental Advisory Council:
2nd Thurs. @ 7:30 PM
Open Space Committee:
1st Tuesday @ 7:30PM
Historic Commission:
3rd Tuesday @ 7:30 PM

Durham Township:
www.durhamtownship.org
610-346-8911
215 Old Furnace Road

Supervisors: 2nd Tuesday @ 7:30 PM
Planning Commission:
1st Tues. @ 7:30 PM
EAC: 3rd Tues. @ 7:30 PM

Lower Saucon:
www.lowersaucontownship.org
610-865-3291
3700 Old Philadelphia Pike
Council: 1st and 3rd Wed. @ 7 PM
Planning Commission:
3rd Thurs. @ 7 PM
EAC: 1st Tues. @ 7 PM

Williams Township:
www.williamstwp.org
610-258-6060
655 Cider Press Road

Supervisors: 2nd Wed. @ 7 PM
Planning Commission: 3rd Wed. @ 7 PM
Land Preservation Board:
3rd Mon. @ 7 PM

Richland Township:
www.richlandtownship.org
215-536-4066
1328 California Road

Supervisors: 2nd and 4th Mon. @ 7 PM
Planning Commission: 3rd Tues. @ 7 PM
Preservation Board: 2nd Thurs. @ 7 PM

