



Calumet County Master Gardener Calendar of Events

Monday – April 27 – 6:00 pm

Tour to Bemis Upland Springs Floral Greenhouses – Bring a planter or hanging basket to plant while we are there. Leave Courthouse South Parking Lot at 5:00 pm.

Tuesday – April 28 – 6:30 pm

Gardening 101 Educational Class
Calumet Medical Center Community Room

Tuesday – May 12 – 6:30 pm

Selecting & Buying your Garden Plants
Calumet Medical Center Community Room

Saturday – May 16 – 9:00 am to 1:00 pm

Master Gardener Plant Sale – Calumet County Fairgrounds

Wednesday – May 20 – 3:30 pm

Planting of Chilton City Flower Bed
5:30 PM – Annual Cookout and Get Together -
Fairgrounds

Wednesday – June 17

Calumet Co. MG Meeting – Holy Resurrection
Monastery Bakery – St. Nazianz
Details to follow later

July 31 – August 1

WI Master Gardener Annual Conference – “Life
is Gardening”
LaCrosse, WI

August 1

NE WI Herb Fest
Planhigion Herbal Learning Center – Jackie
Johnson
N6935 Hwy 55, Seymour, WI

For other events around the State – Please check
the WI Master Gardener Web Page for events,
dates & times.

Thank You to Ron



All of us in Calumet County Master Gardeners would like to extend a BIG thank you to Ron Richter and his dear wife, Linda, for all their years of service in doing the newsletter for our group. Ron and Linda have put in countless hours of writing and putting the newsletter together for us. We truly do thank them for that.

Ron just feels that it is time for him to step down from this responsibility and asks that someone else step up to the plate to take this task over. In the interim, we request that any and all of you write an interesting article or articles for the newsletter and submit them to Connie in Extension as she will be putting the newsletter together as she has always done in the past.

Some suggestions that have already surfaced are a recipe corner; new or interesting book reviews; review of new and different plants; review of different gardens that you have visited, summary of a garden seminar that you have attended, to list a few.

Plant Sale

The Annual Master Gardener Plant Sale will be held on Saturday May 16 from 9:00 am to 1:00 pm at the Calumet County Fairgrounds, Exhibition Building.

If you have plants you are willing to spare, please pot them a couple weeks prior to the sale, so that they have time to recuperate. Label with common and Latin name, height, color of bloom, and where to plant (such as sun, shade, partial shade, etc.). If you have bulbs, corms, etc. do the same, but please list number that is in the bag. This is a great way to help your organization raise the funds needed for various endeavors that come up during the course of the year.

We need all kinds of workers to assist with the sale on that day. We will be sending around a sign-up sheet at the next meeting to get an idea of who will be there to help. If you plan on working, please be there around 8:00 am. If you are bringing plants for the sale, please come early so we can get them in place prior to the doors opening at 9:00.

As in the past, we will have coffee and goodies for you in the morning and will have something for you to eat at lunch time. If you have a garden wagon that we can use that day for carry-out of plants, please bring that along also.

Chilton City Flower Bed

We will plan to plant the Chilton City Flower Bed on Wednesday, May 20, beginning at 3:30 pm. The plan is to again use the larger marigolds for the bed with the Big "C" in the middle. We will try using the large orange marigolds surrounding the Big "C" which will be planted using the large yellow marigolds. We will also use dusty miller around the edge of the bed as in the past and also around the Big "C".

Hopefully, the weather will cooperate once this year so we can get the planting done on schedule. If not, we will email you with the rain date.

Annual Cookout

Following the planting of the Chilton City Bed, we will have our annual cookout and get together at 5:30 pm. We plan to have this in the park at the Fairgrounds. If the weather is not good, we will have this in the Exhibition Building where we have the plant sale.

The organization will provide the meat, plates, forks, spoons, napkins, and beverages. Those attending are asked to bring a dish to pass for the rest of the group to enjoy.

Square Foot Gardening a Convenient Method Proper Practices Lead to Success

by Ray Mueller

"Square foot gardening" is a term that might be somewhat misleading or confusing but the appropriate practices for doing it are quite clear, attendees learned during a presentation by landscape designer Kelly Bahrs of Manitowoc at the Kiel Public Library.

In addition to her own landscape architecture business, Bahrs is a professional gardener at Christopher Farm and Gardens along the Lake Michigan shore north of Sheboygan. She announced that the 50-acre facility will have its first general open house on Saturday, July 11.

Compared to traditional gardening, the square foot approach is much more controlled, usually takes up less space, can be more easily monitored, and is more convenient for anyone with physical problems, Bahrs pointed out. In many cases, the gardening can be carried out very close to buildings and with easy access to water, she noted.

When following the prescribed practices, weeds are not likely to be a problem with square foot gardening and the need to till soil is minimal, Bahrs promised. She also mentioned the likelihood of not having too many plants or too much production, thereby reducing waste.

Bahrs estimates that one 4 by 4-foot box or container will supply enough produce for one salad per day for an adult during the growing season, enough additional produce for one meal per day, and even an extra supply for preserving or sharing.

Square Foot Basics

Among the basic requirements for square foot gardening are raised bed planting containers, a growing medium composed of three ingredients, dividing the planter space into one-foot grids, being aware of whether plants are good or bad companions, and providing protection against rodents, rabbits, and deer, Bahrs emphasized. She also said the opportunity for vertical gardening with some plants should not be overlooked.

Anything being grown for its fruit or roots needs a minimum of five hours of full sunshine per day while plants grown for their leaves, stems, or sprouts fare best if in the shade for at least part of the day, Bahrs pointed out. Stay clear of trees and shrubs because they might send their roots to the good soil introduced in the square foot garden, she added.

The containers can be placed on existing pavement or gravel, Bahrs indicated. Those boxes or containers are essential for keeping the soil in place nor is it likely to compact, she remarked.

Building of Boxes

Except when there is access from only one side, the typical width of the garden boxes should be 4 feet and the length can be any number equally divisible by 4 such as 4, 8, 12, 16, 24 or more feet, Bahrs indicated. She said the soil depth for most plants should be a minimum depth of 12 inches while 6 inches is adequate for a few others.

For the bottom of the boxes, Bahrs suggests ¼ inch plywood with a ¼ inch hole drilled in every square foot or a weed control cloth. An option with the boxes is put them on legs so bending will not be needed when planting or harvesting, she pointed out.

The box walls could be made of natural or man-made wood, brick, stone, or block, Bahrs observed. Place a barrier around the inside of the box if treated wood is used, she advised. If blocks are used, herbs or mints could easily be grown inside of them, she added.

If there are rows of boxes, leave a three or four-foot aisle between them, Bahrs continued. That aisle could be turf, brown mulch (cedar chips are good), small crushed gray or white stone, or bricks, she stated.

Soil Mixture

What is most important in creating such a garden is to make the soil with equal volumes of peat moss, vermiculite, and compost, Bahrs stressed. Put aside any idea of using regular garden topsoil, if only to be free of the weed seed bank it is likely to have, she warned.

Peat moss holds water, the vermiculite provides structure, and the compost supplies plant nutrients, Bahrs explained. She pointed out that a 4 by 4-foot box that is 6 inches deep would require 8 cubic feet of material (2.67 cubic feet of each) while a 12-inch depth would require twice as much.

For the compost, check the plant label to be sure that it contains materials from at least five animal or plant sources and be wary of any other compost that hasn't decomposed for at least one year or hasn't been properly heated to kill weed seeds, Bahrs commented. She also noted that kelp meal and decomposed weeds from lakes are good elements in compost.

Mix the three ingredients when it's not windy, add water as necessary, dump the mix on a tarp, and then shovel the mix or slide or roll the tarp into the box, Bahrs explained. She noted that it would be a good practice to place a layer of newspaper at the bottom of the box.

Nutrient Considerations

After one growing season, it's probable that the soil needs to be replenished because it has settled, Bahrs remarked. This should be done with the same mix but it might also be appropriate to submit a sample for a soil test, she advised.

Expect a soil pH of 7.0 to 7.2 from the prescribed soil mix, Bahrs stated. Another portion of the soil test will indicate if there is an adequate of the major nutrients – nitrogen for plant leaf growth, phosphorus for roots, and potassium for plant vigor and production, she indicated.

Plants which require the most nutrients include peppers, melons, tomatoes, squash, pumpkins, and eggplant, Bahrs noted. In the next group are Swiss chard, lettuce, kale, cauliflower, Chinese cabbage, spinach, parsley and salad greens while radishes, onions, leeks, turnips, and potatoes need relatively less nutrients.

The Grid Rules



“Grids are a must,” Bahrs declared. “It is not square foot gardening if it does not have a grid.” That grid can consist of a blind, lath, or other plastic or wooden material placed above the box in one-foot sections and in both directions, she indicated.

As dictated by the site and guided by the knowledge of likely threats, the box should also be protected with a wire bottom to keep out moles and voles, chicken wire to thwart rabbits, cats, and dogs, netting to screen out birds and deer, or a floating cover to protect against insects,

Bahrs pointed out. To create a mini-greenhouse effect, install a PVC top, she said.

There are also firm rules for how many plants to grow in each square foot grid, Bahrs stated. She listed 16 for radish, onions, and carrots, 9 for beets, green beans, and spinach, 4 for lettuce, corn, and strawberries, 2 for cucumbers, and 1 for a tomato, pepper, eggplant, or a gourd along with 2 grid squares each for a melon, pumpkin, or squash.

Planting Preparations

For the warm season plants which were obtained from a greenhouse or started by the gardener, a period of 7 to 10 days is needed for hardening them – setting them outside in the shade for part of the day in order to acclimate them to bright light and the outdoors, Bahrs pointed out. An alternative is to protect them with tiles after being set out.

With the difference in traits and maturity timing for various plants, it's a good idea to grow cool season crops such as onions both early and late, Bahrs pointed out. Others in the group which can handle a frost are lettuce, radish, and spinach.

Keeping plants well-watered is another essential, Bahrs continued. Whatever the source, she said the formula is one inch of water per week.

Plant Companionship

Because certain plants are either good or bad neighbors, gardeners should recognize and act on that fact, Bahrs advised. For instance, do not have cucumbers and melons close to one another because of the possibility of cross pollination and a dire effect on taste, she pointed out.

Tomatoes are good neighbors to basil, onions, carrots, cucurbits and a number of herbs and flowers but not to potatoes, dill, and strawberries. Onions are not good neighbors for peas and beans but they're ideal for carrots, lettuce, tomatoes, and strawberries.

(More complete listings can readily be found online under such titles as companion plants for vegetables.) In another vein, there are some plant combinations which are good for repelling slugs, insects, and other pests, Bahrs observed.

Vertical Gardening

One very practical option with square foot gardening is expanding to a third dimension with vertical growth, Bahrs pointed out. With the placement of netting or a lattice on the side or over the middle of the container box, it's an ideal setting for peas, pole beans, grapes, vine plants, and any number of annual and perennial flowering plants, she explained.

The netting needs to be in place before the vine plants start sprawling, Bahrs noted. After that, be sure to train the vines properly once a week, she said.

Bahrs can be reached by phone at (920) 918-2613 or by e-mail to kellyslandscapedesign@yahoo.com. She also has a website at www.kellyslandscapedesign.com.

Many Types of Plants Thrive in Containers

Growers Urged to Expand Their Horizons

By Ray Mueller

What do houseplants, shrubby and geophytic tropicals, hardy bulbs and herbaceous perennials, succulents, edible plants, climbing and trailing plants, aquatics, and annual plants have in common?

All of them can be grown very successfully in containers, according to Ray Rogers, a horticulture instructor at Lakeshore Technical College. He refers to himself as “a transplant” from New Jersey after having lived there for 26 years.

Rogers, who is the author of “The Encyclopedia of Containers Plants,” gave a presentation on the topic at the Kiel Public Library. He believes that many people have too narrow a view on what plants are suitable for growing in containers.

Container Traits

“There are 500 choices of containers,” Rogers exclaimed. “Anything that holds potting mix can be a container.”



Among the other requirements are that the container have a drainage hole and that this hole be covered with a screen or mesh in order to keep the soil medium from leaking, Rogers indicated. He also suggests keeping the

container off the ground with some kind of footing.

For huge pots, fill the bottom with cans or some other light item so the container doesn't become too heavy to move, Rogers advised. During the winter, be sure to store all non-glazed containers inside, he added.

Rogers mentioned the choice of monopot (single) plants and combopot (multiple species) plants. He finds that many growers don't take advantage of the chance to grow several species that fit well together in the same container. Rogers said sedum, jade, and hens and chicks are a good combination for one container.

Appeal of Plants

In addition to the basic elements of color, texture, shape, line of sight, and space that are appealing about plants, Rogers asks growers to recognize their appeal to the senses of smell and touch and for their ability to evoke memories about people, places, and events.

As he shared pictures of dozens of plants that are good choices for containers, Rogers asked attendees for their observations on what other images they suggest. Among the responses were candy, a salamander, trumpets, cocoon, lampshade, snakes, tropical fish, streamers, a

waterfall, fireworks, a scorpion, a bow tie, a water fountain, a scribbling – and Hawaii.

Although many owners of houseplants tend to keep them inside, Rogers urges them “to liberate” those plants by putting them outside for the summer and even mixing them with others in the same container. Among those he has on that list are popularly known as Rita's Gold, Silver Lady, and Neon – the last of which should be kept in the shade and be watered and fertilized.

Tropical Species

In the shrubby tropical category, Rogers mentioned Petra, Picasso's Paintbrush, and Thomas Hobbs – a trio which evoked several of the images. He also noted that the Charles Grimaldi is very fragrant and has up to 100 blossoms at one time.

The geophytic (or summer) tropicals grow from bulbs, corms, or tubers, Rogers pointed out. He mentioned the Stingray, Ruffles (leaves up to six feet long), Leung Pa Li Chat (mini elephant ears leaves of about three inches and to be kept in shade), and the Spotted Giant and Captain Sonora.

One of the most fussy container suitable plants is the Variegata gardenia sub-tropical shrub, Rogers observed. Touted for its smell and its tendency to evoke memories of relatives, it should be left growing at the spot where it chooses to grow despite likely advice to the contrary, he commented.

Hardy Plant Groups

In the hardy bulbs category, Rogers identified daffodils as his favorite and announced that a competitive show will be held on Saturday, May 9, at the Maywood Environmental Park in Sheboygan. He also credited the Pink Pearl hyacinth for having a great smell.

Two hardy herbaceous perennials that Rogers cited are Nicolas, which is also known as a Japanese forest grass, and Aurea, which is referred to as Irish or Scotch moss and is a relative of the carnation.

Cacti and other succulents are hardy in respect to seldom if ever having to be watered and needing very little fertilizer, Roger pointed out. Among those he mentioned are the Crassula, Echeveria, and Mediovariegatum sedum, Laurentii, Sansevieria (hand and finger shape), aloes, and rhipsalis.

Edible Category

Don't hesitate to grow an array of edible plants in containers, Rogers suggested. His recommendations include cabbage, parsley, rosemary, culinary sage, dill, fennel, and the many types of salvia.

Aquatic plants that can thrive in containers are Perry's Baby Red (a water lily), Mrs. Perry B. Slocum (a big lotus plant with a human hand shape), Spiralis (a sedge), and Ludwigia, Rogers stated.

Among the annual plants fitted for containers are the Henna (a coleus that is multi-colored in the shade and brown in full sunshine), petunias (whose native fragrance has been bred out in favor of colors), the Superbells Apricot Punch (a huge array of bell flowers), impatiens (can be grown in a tree cavity), and the Profusion Cherry zinnia, Rogers remarked.

Climbing and trailing plants on Rogers' list are the Heavenly Blue morning glory, the alba moonflower (smells like freshly washed clothes), the passiflora caerulea (a passionflower from South America named by the Jesuit priests for its resemblance to the Crucifixion), the passiflora tendril, the Buttercup ivy, and Aurea (a golden version of creeping Jenny).

Among the favorite gardens that Rogers has visited are Longwood on Kennett Square in Philadelphia and The Chanticleer in Wayne, PA. He can be reached by phone at (920) 693-1821 or by e-mail to raymond.rogers@gotoltc.edu. He said groups can arrange to visit the horticulture projects at Lakeshore Technical College in Cleveland.

Gypsy Moth

Every year we add more areas within a region, here are some new additions. The town of Sherman in Sheboygan County, the city of Beaver Dam in Dodge County, more sites in the city of Appleton. So we need to stay alert, and watch for this moth's damage to trees. Remember to check under pieces of wood in a wood pile for egg masses which are light yellow in color and can be easily covered with soybean oil by spraying it over the entire mass or scraped off and destroyed. Also, check crotches in trees for egg masses.

Birdhouse Gourds



These gourds make excellent homes when done right. Make sure the entrance hole is the exact size for the bird, is drilled at least four inches up from the bottom, and is smooth to the touch.

Also make sure the hanging wire is secured good from the inside but be sure

you don't leave sharp or long pieces to tie off. Another very important item, is the drip hole's drilled into the bottom for drainage, a quarter inch drill bit works great and make a least two holes. To finish cleaning out a gourd, pour some water and a few gravel stones inside, than shake vigorously for a few minutes, rinse out and dry in an airy place. The outer shell can be sealed with any sealer that can be used on leather, paper or wood. An excellent book on Gourds is by Ginger Summit, called "Gourds in Your Garden."

Volunteer Time

September 16 will be our deadline for hours for this year. Remember to jot your time down as you go along. Hours are very important, as it shows what our organization is capable of giving back to our communities and county residents. Educating people of all ages is the key to our organization living on.

Over Due Welcome

Due to your editor missing meetings, I have overlooked the fact that we have new members from the last training sessions. I hope you all know you are welcome, as this group has always opened their arms, and minds to be picked for information. We have members that know their perennials inside and out, while others know about orchards, still others botany, trees, herbs, shrubs, you name it and there is someone that could probably help you or know where to get the information. So, feel free to join in. If a project doesn't suit you and you have something else, please bring it up to the group, as there may be others that would like the same thing. Plus, there is a list of on-going projects you can also join.

Thank You

Your organization wants to thank you--Judy Mathes--for all your years as our secretary. We all truly appreciated the extras that you did. Also, thanks to Deb Wittman for accepting the position of secretary.

Luffa Gourd



This is a fun plant to grow. But because of the long growing season needed to produce a mature crop, they need to be started early indoors. This gourd will produce a useable sponge, as the interior will develop a sponge like internal substance. Look for the variety Luffa aegyptiaca or Luffa cylindrica, which is commonly grown in America. The ridged variety Luffa acutangula is grown in Asia and India. Asia exports this sponge to the United States. The interesting fact about this gourds sponge, is that it was used as a filter for diesel oil in ships during World War II. Many attempts have been made to make this Luffa a viable commercial crop in this country.

Integrated Pest Management

We should all watch this like a hawk, Integrated Pest Management. Whether we are talking conventional or organic pest eliminations, we must be sure of what we are seeking to destroy. Also, remember to change the sprays that one uses, as same-oh-same-oh, will get you an insect that will become immune to your control. This happened last year in Stockbridge with Colorado Potato Beetles, once they changed brands the problem got handled. So let's talk about a few of the gardener or landscapers' pest problems.

Aphids come in a few colors, with the most common, being green. They are soft bodied with huge appetites, which means if you look on the underside of a leaf, you may find several hundred of them sucking the life out of the leaf. Fortunately, a variety of lady beetles, parasitic wasps, and other predatory insects will be glad to feed up on them if given the opportunity.

Cutworms, these creatures move along the soil looking for a seedling that is emerging from the soil, and thus, cutting it off right at the soil or just below. So if one uses a cardboard collar or plastic cup around the plants base, the creature can't locate the plant. But in large acreage, one must spray or inject a chemical with the seed.

Earwigs, besides being a pest are also helpful in feeding on aphids. The easiest way to get rid of earwigs, once the aphids are gone, is to set out rolled up newspaper so the earwigs can crawl inside during the night and be emptied into a pail of soapy water in the morning.

Slugs, an interesting tidbit is the Brown slug, which was brought from France to America as an edible delicacy in the 1800s. Instead this slug became a gardeners' nightmare by

eating almost everything in sight. So to solve this problem lay a board down and each morning pluck them off and place in a pail of soapy water to drown. Also shallow bowls of stale beer or soda or beer cans lying on their sides also works.

Cucumber Beetles come in spotted or striped versions similar to versions of larger ladybugs. They like to feed upon cucumbers, melons, squash, and corn just to name a few of their favorites. They do feed upon others as well. The best control is using floating row covers as these creatures can transmit diseases which can bring on bacterial wilt and cucumber mosaic virus.

Tomato hornworm is a huge caterpillar which can be three to four inches long and feeds on tomatoes, eggplants, and tobacco. Once these caterpillars pupate, they turn in the beautiful sphinx moth, which is almost the size of a hummingbird. Parasitic wasps like to lay eggs inside of them which in turn kills the caterpillar. I usually just leave them be if there is only one or two as I like seeing the sphinx moths.

Flea beetles can become abundant once alfalfa hay fields are cut, as they move into the garden in droves. So plant radishes to lure them away from other plants and vacuum them up and destroy in a pail of soapy water. They like to feed on most everything leaving gunshot holes scattered about in leaves. They can and will pit melons, beets, and other crops.

Scale is yet another sucking insect that latches onto the bark of trees, but can be stopped by using horticultural oil in early spring. The oil smothers the insects; you can also scrape them off the tree and destroy.

Life Changes

When I started out in life some fifty years ago, I hadn't heard of grafting scion wood or even grafted plants, as my mother and I grew green peppers, large onions, and medium size tomatoes for a bar in Potter that served lunches. On our farm we had a beautiful yellow delicious and a McIntosh apple tree which produced several bushel each year. The majority of the apples went into making apple-sauce and several were wrapped in newspaper and stored in the fruit cellar for eating. I helped my mother can many a jar of cucumbers and other vegetables as at that time we didn't have a freezer. Our meat was in a compartment at the locker at Stengel's store in Hilbert. It wasn't until years later that we could afford a freezer.

It wasn't until I got married that we again started to can fish, fruit, and vegetables. Plus, we dried herbs and vegetables, we all loved fruit leather and jerky. We put up many a two quart jar of grape juice just like my Mom did so many years before.

Then in 1984 I met Paul Hartman, Brown County Horticultural Agent, who was giving a class on fruit production in the home orchard. In 1985 he was offering a Master Gardener Class on Wildflowers, which encompassed the entire state of Wisconsin. From the boreal forests, to bogs, woodlands, meadows, prairies, and savannahs, we covered it all, in all

types of weather. That was the major game changer in learning horticultural and all the many facets of it. Linda and I enjoyed many conferences and conventions in various states and in Canada during our time with the Northeastern Wisconsin Master Gardener's Program. We were part of the group of people that started up the state group, and in 1991, I officially started the Calumet County Master Gardener group by teaching the basic course to approximately twenty-five people and over the course, in the beginning I was the Advisor for our group and later the reins were given to Mary Kohrell and then to Eric Ronk. Throughout this entire time, Connie Leonhard has helped our organization. So here we are now, thirty years later and what a legacy we have gone through. I now know what scion wood and what grafting is all about, I have done tissue culture, plus a few years back went through UW outreach program becoming a Home Preserver, canning meat, all types of canning, pressure canning to steam and hot-water bath. We touched on drying and freezing also.

Over the course of time, I have served the Northeastern Wisconsin Master Gardeners, Calumet County Master Gardener's group, and the Wisconsin State Master Gardener's organization. So I hope that all of you will enjoy this great program for many more years to come.

Wetland Restorations Boost Bird Populations

Researchers Track Bird, Plant Species Changes

By Ray Mueller

When an array of federal, state, and local conservation incentive programs spurred a major wetland restoration program about 30 years ago in Wisconsin's two tiers of counties on the western shore of Lake Michigan, Jill Hapner eventually became involved.

That happened when Hapner, who is the senior biologist with the Milwaukee area GeoBotany Consulting Services today, was working for the Natural Resources Conservation Service. She became curious about the restored wetlands, particularly those in Ozaukee County, where she lived at the time.

Hapner learned that the wetland projects were carried out for such reasons as decreasing soil erosion, an alternative use of marginally productive lowlands, plant diversity, wildlife habitat, improvement of surface water quality, and storage of storm water runoff. Many of the sites were developed by breaking up the existing field tile, she noted.

Follow-up Research

What Hapner also noticed at the time was that no comprehensive documentation of the restored wetlands was occurring in those eastern Wisconsin counties and that no follow-up evaluation on the results was taking place. The overall approach appeared to be a haphazard one on a "first-come, first-serve" basis with no centralized database or even an accurate counting of the number of restored wetland sites, she observed.

This situation presented Hapner with the opportunity that she parlayed into research for the doctorate that she earned from the University of Wisconsin – Milwaukee, she told attendees at the 19th annual "Harmony with Nature" conference sponsored by the Fox Valley chapter of Wild Ones. Hapner had also worked for the United States Fish and Wildlife Service and the U.S. Department of Land Management.

Hapner's research on the region's wetlands was helped greatly by the Geographic Information System (GIS) technology that was introduced in 2000. She called this electronic data format "a new science then and now."

Wetland Restoration Numbers

With the help of GIS, Hapner discovered that 360 new wetland sites covering had been created in Ozaukee County during the 15 years from the mid-1980s. She was also fascinated by the Manitowoc County farm on which the owner had 96 wetland sites created.

Grant money from the Wisconsin Coastal Management Program helped Hapner to tabulate counts of 2,501 new wetland sites with a total of 4,606 acres in 11 counties. The sizes ranged from .005 to 236.6 acres. The list included 1,000 sites covering 1,480 acres in Manitowoc County and 233 sites with a total of 485 acres in Sheboygan County.

At the 120 Ozaukee County restored wetlands that were in place from 1 to 17 years at the time they were surveyed, there were 267 different plant species, Hapner reported. The most common plant species were Reed canarygrass and cattails along with grasses from the adjacent farmland, very few annuals and biennials, and the start of shrub and tree growth, she noted.

With the aid of aerial photography taken every five years (due again in 2015), Hapner has continued to track the fate of those wetlands. She has found that they gradually defined their own boundaries, that some had two or three grow into one, that 99 percent were maintained beyond their original 10 or 15-year contracts, and that less than 10 percent have been lost overall.

Hapner attributes the loss of six sites in Ozaukee County to the drought in 2012. She emphasized that all of restorations involved voluntary actions by private owners, that ownership has changed in some cases, and that a new angle on the topic is how new "conservation subdivisions" are directing surface runoff waters to existing restored wetlands.

Site Monitoring

When the wetland restorations took place, the owners were told not to seed the site but to allow plant establishment from the existing seed bank, Hapner noted. As she decided to monitor what changes would take place, Hapner realized that the restored wetland sites would not mimic natural wetlands and that any comparisons with them would not be fair.

Among the other points to consider were distances from woods and roadways and whether the adjacent land was being cropped, was left fallow, or was grassland, Hapner indicated. Among the items to be monitored were the vegetation, the possible appearance of exotic invasive species, and the populations of birds and mammals, she noted.

To narrow her focus and to make the follow-up studies manageable, Hapner focused on two restored wetlands in Ozaukee County. One of had native trees such as willow, boxelder, ash, and cottonwood along with ferns, Reed canarygrass.

In 1994, the count of birds taken by fellow researcher Karla Leithoff at the sites during non-migratory times identified 61 different species of which 63 percent were wetland birds and 26 percent were "old field" species, Hapner noted. When the next bird survey was taken in 2004, there were 62 species but there was a virtual flip-flop to 56 percent old field and 29 percent wetland, she reported.

That change reflected the dynamic natural changes at the sites, Hapner stated. The major ones were the

replacement of open water by cattail growth – a change mitigated somewhat in later years by the arrival of muskrats who cleared out some of the cattails, she explained.

Bird Population Changes

What Hapner described as being “all unexpected” was the major increase in bird populations during the period from 1994 to 2004. The number of species was virtually unchanged but bird numbers increased fourfold, including a multiple of six for redwing blackbirds and significant increases for the song sparrow, American goldfinch, yellowthroat, and Canada goose. The increase for the latter three was attributed to population boosts (90 percent for the Canada goose) throughout the region.

From what she has observed, Hapner advises landowners with restored wetlands to expect the development of woody vegetation, a potential micro-climate change, and the arrival of swamp fauna and flora species. It is essential to have a water depth of at least one meter at times to provide habitat for a wide variety of species and not to mow close to the edge of the site except for perhaps for a walkway, she advised. But it is also acceptable to have ephemeral (dry at times) sites in order to eliminate any introduced fish populations so the fish don't feed on frogs and other small aquatic species, she added.

In her contacts with the owners of restored wetlands, Hapner finds that 80 percent of them intend to keep the site. She mentioned bird nesting and bird watching as some of the leading attractions for the owners. One concern for the owners is the apparently inconsistent practice of what value is being placed on the wetlands for determining property taxes, she indicated.

When asked about how many migrant bird species were using the restored wetlands, Hapner said the number was “impressive” but that migrant waterfowl prefer lots of open water. She explained that the numbers are included in her doctoral dissertation but not in the published data on the follow-up studies because of a decision by the publication editors to include only the bird species which establish a local habitat.

Hapner invites persons who are interested in the topic to look for more information on the <http://www.wisconsinwetlands.org> website.

Daffodils

Maybe some of you have heard of this, but I was amazed to see a bulb that could produce fifteen to twenty flower blooms. It is called "Golden Bells Carpet Daffodil." Blooms last up to two weeks and is deer resistant.

Sweet Potatoes

So many people think that these potatoes won't grow this far north. But if grown right, one would have good success. We used Beauregard and Georgia Jets, and started the slips from our own stock, and planted early into peat pots. Soak these pots a day before planting, so that on planting day the bottoms could be easily pulled out when placing in the hole. Here again we used a bulb planter, which worked good. This year, in the Gurneys Seed catalog I saw where one could get white and purple skinned sweet potatoes. Two colors that I didn't know existed. I had only seen the regular rustic type skin. Possibly next year if everything goes better I would like to try and see what their taste would be like. Has anybody grown either or both of them?

Odd Trellises



This is becoming more popular as the years go on, as more and more city or apartment people want to grow some type of edible plant, whether it be tomatoes, beans, peas, zucchini squash or strawberries ... to a dwarf fruit tree in whiskey half barrels to huge pots with roller platforms beneath the plant. This way it can be easily moved to a warmer spot or into your home in colder weather. To our surprise, we once saw hops vining off a trellis to a power pole to a lower wire going to his garage. Plus another went up the downspout on a garage to a wire that went from the garage to his home and then went up the side of his house. We've seen cucumbers, beans, and especially pole beans going up yard poles that hold a mercury light. Then these garden containers have crude to elaborate trellises, some of which lead to plants growing upstairs to the next person's balcony. Plus, on occasion they even climbed higher and the vine was well over fifty feet long, so everyone along the way got a cuke to enjoy. Many use tree branches as supports, while others use PVC pipe, while others do use concrete reinforcement wire cut and bent to form a circle for tomatoes, melons, cucumbers, etc. (much stronger than a tomato cage). Let your imagination go to work, look around, as you may be amazed at what you have at hand. Some of the elaborate forms resemble structures used to grow ginseng, with lathing on top of pole structures. So use arbors with trellising material used on a side and over the top.

Temperatures Affect Timetables in Nature Daylight Governs Activity for Several Species

By Ray Mueller

Is it true that temperature changes affect the timetable for bird migrations, flower blooming, and insect activity? The short answer is that it's true in many cases and not in some others.

For specifics on those points, Wisconsin has some of the best documentation anywhere in the United States, thanks to the journals kept by the state's famed naturalist Aldo Leopold and follow-up data collected by his daughter Nina (Bradley).

This subject was explored in the keynote presentation by Stanley Temple at the 19th annual Harmony with Nature conference sponsored by the 268-member Fox Valley area chapter of Wild Ones. Temple is a University of Wisconsin – Madison professor emeritus who, for 32 years, held the academic position first occupied by Leopold.

Leopold's Legacy

Although Henry David Thoreau was one of the first observers in the modern era to record dates for various activities in nature at his Walden pond in Massachusetts, the contributions by the Leopolds cover a much longer period, particularly for south central Wisconsin counties such as Sauk and Dane, Temple pointed out.

Not only did Aldo Leopold record the dates for the arrival of various birds and the blooming dates for perennial flowers and plants but he also provided interpretations on those observations, which described the interdependence of various species, including insects, Temple explained. "He looked for order and meaning in those events."

With Aldo Leopold's calendar data in journals covering 1933 to 1948 serving as a starting point of comparison, it was his daughter Nina's recordings from 1976 to 1998 that became "a groundbreaker" for the science of phenology, which is a study of the timetable on the occurrence of natural activities, Temple remarked. "Her paper on phenology was greeted by deniers who argued that the total habitat was the cause of the changes."

Aldo Leopold's Career

As a teenager in Burlington, IA, Aldo Leopold started a journal in 1904 which tracked the dates on activity by bats, the arrival of birds, and the blooming of flowers, Temple noted. This continued, particularly with the connection between skunk cabbage, insects, and the eastern phoebe when he attended prep school at Lawrenceville, N.J., he observed. Temple visited the same skunk cabbage site nearly a century later.

From 1909 to 1924, Leopold was employed by the newly created United States Forest Service in New Mexico, where he met and married his wife Estella. In 1933, he was selected by the University of Wisconsin – Madison for the first academic position in the world which was based

on the discipline of wildlife management, Temple indicated.

While at the university, Leopold acquired a property in Sauk County as a weekend retreat for his family, which had grown to five children. That property included the famous "shack" which was the setting for Leopold's "A Sand County Almanac" book.

Specific Observations

Leopold's journals and early versions of spreadsheet displays are all well preserved, Temple noted. This includes his notebook entries on the morning of April 21, 1948, when he died of a heart attack at age 61 while fighting a fire at his Sauk County property.

That entry noted that the shoots on the lilac bush that his wife Estella had planted next to the shack were only two inches long by that morning, indicating a blooming date well into May. Temple pointed out that it is not unusual to have lilac blooms by late March today at that site.

Leopold's notes involved hundreds of species, Temple pointed out. He commented that Leopold insisted that his graduate students at the university engage in the same practice.

What is obvious in Leopold's documents is that he often referred to data from earlier years, Temple said. One example that he cited was the tracking of the blooming dates (in July) of silphium (a fennel plant) in a nearby country cemetery.

Climatic Correlations

Just a year before his death, Leopold published a paper detailing his phenological records, Temple noted. "Ecology was a new thing then." He said Wisconsin is an ideal place for ecologists because of its large number of animal and plant species and its good data set.

Leopold's paper outlined the correlations between the weather, particularly the temperatures, and the activity of many species. He found that they responded differently – some were greatly affected while those which responded to the length of daylight were not.

The value of Leopold's data was greatly enhanced thanks to daughter Nina's decision, following retirement from her career, to return to the Sauk County property and to replicate her father's observations. That effort, undertaken from 1976 to 1998, served as a major revelation, Temple commented.

Comparative Findings

A paper on that comparative phenology, which Temple described as "short and simple," was published in 1999. Its comparison of the average dates for natural activities showed that many, but not all, events in nature were occurring earlier.

This was attributed to the nearly two degree increase in the average temperature during the spring (March through May) from the 1935-1945 period to 1976-1998, Temple indicated. That conclusion was challenged in some quarters with arguments that other reasons such as landscape changes and the introduction of barriers might apply instead, he noted.

Comparisons of the two time periods showed that, on average, American robins were arriving 14 days earlier, northern cardinals were starting their spring singing 12 days earlier, and the blooming dates had advanced by 19 days for compass plants, 14 for bloodroot, 9 for pasque flowers, and a few days for columbine.

But there were no changes in the average blooming date for dogbane or in the arrival of the wood thrush, which migrates from Central America. The overall count showed that 37 species were reacting earlier while 18 exhibited no change.

Temple's Re-Examinations

In the wake of the uproar which questioned if temperatures alone were a plausible reason for those changes, Temple, who had been the Leopold chair professor since 1976, decided to examine the temperature data for 1895 through 2008. He believes he had access to the best data available in North America thanks to the Wisconsin climatology office and the data collected since 1909 by Arlie William Schorger, the ornithologist who also documented the demise of the passenger pigeon.

Temple found that at the Leopold property in Sauk County the American robins arrived at up to a difference of 30 days (Julian days 60 to 90 or March 1 to 31) while the wood thrush arrival varied by no more than 10 days (Julian days 123 to 133 in early May). He matched the difference in the robins' timetable to the average temperature during the spring in that year while the wood thrush's timetable could be linked to its following of the amount of daylight in its migration from Central America.

In the data available to him, Temple could analyze the timetable response for 130 plant and animal species. Rather than dwelling on the past, he wonders what is likely to happen if the prediction of an average temperature rise of as much as six degrees by 2050 proves to be true – an increase that would match the statistics for 1977 and fall short of the temperature aberration in the early spring of 2012.

Using 2012 as a Prelude

Compared to the average spring month temperature of 45.3 degrees in south central Wisconsin from 1895 through 2008, the extremely unusual early spring of 2012 posted an average temperature of 53.9 degrees for March through May, Temple noted.

What happened in 2012 was that 20 of 23 flowering plants bloomed earlier than in any year since Leopold's records began in 1935 while a few bloomed at their normal time, Temple observed. A similar observation was made in collaboration with a Boston University professor who used Thoreau's records from the mid-1800s, he reported.

A logical question which follows is whether there is a physiological limit on how early certain plants can bloom, Temple stated. While noting that no such limit has been detected so far in Wisconsin, he acknowledged that there are arguments about plants needing to have "a winter chill" period and agreed that the photo light period determines the timetable for some species.

But there were definite casualties among Wisconsin's fruit crops as a result of the 2012 spring, Temple continued. He cited the freezing of the Door County cherry crop after the temperature-induced early blossoming and the major losses in the apple orchards in western Wisconsin when pollinators were not available during the year's very early blooming period.

Explaining the Interaction

"Why is this important?" Temple asked. "It's because some species are vulnerable when they are out of synch."

Regarding the eastern phoebes which Leopold had observed in New Jersey, Temple explained that the bird's timetable was tied to arriving about one week after the skunk cabbages had begun to bloom and attract the insects which are a major food source for the phoebe.

One victim of the timetable changes has been the great crested flycatcher, Temple stated. Guided by daylight hours for its long migration, the bird which needs tree cavities for nesting now arrives well after starlings and other species have taken most of the good spots, resulting in a population decline of well over 30 percent for the flycatcher in the past 50 years, he pointed out. "Put up a nest box for them."

Related Observations

In reaction to increasing temperatures, it's likely that many species will adjust spatially by moving to the north or by going to higher elevations to find suitable habitat, Temple observed. He suggested that interested residents should share their observations with scientists.

More information on phenology is presented on the www.usanpn.org website and through a related program overseen by Cornell University allows tracking of the annual migration of birds, Temple pointed out. He noted that an eBird project, which is available online with the eBird reference, has tens of thousands of watchers of bird migrations.

Whether residents should assist birds with migration has proven to be a hot topic among ecologists, Temple stated. He says this would be a good practice with rare, localized, and endemic species.

Regarding plants, Temple said discussions have begun about genetically modifying plants to have them cope with warmer temperatures rather than trying to move plants to new locations.

Whatever decisions are made on those points, Temple emphasized that humans must always recognize that they have an ethical tie to nature in order to do what's necessary to "preserve the integrity, stability, and beauty of the biotic community."

Recipe Corner

Cranberry Oat Cookies

...Pat Lisowe

½ cup plus 2 tablespoons packed brown sugar
¼ cup sugar
⅓ cup canola oil
1 egg
1 tablespoon fat free milk
¼ t vanilla extract
1¼ cups quick cooking oats
¾ cup plus 2 tablespoon flour
½ t baking soda
½ t salt
½ cup dried cranberries

In a large mixing bowl combine sugars and oil. Beat in egg, milk and vanilla. Combine oats, flour baking soda and salt gradually add to sugar mixture. Stir in cranberries. Drop by tablespoons onto a nonstick baking sheet bake at 370 degrees for 10 to 12 minutes or until lightly browned

Hotel Chocolate Chip Cookies

...Pat Lisowe

½ cup rolled oats
2¼ cup flour
1½ t baking soda
1 t salt
¼ t cinnamon
1 cup butter
¾ c brown sugar
¾ c white sugar
1½ t vanilla
2 eggs
3 c chocolate chips
1½ c walnuts

Pulse oats in food processor; add flour, soda, salt, and cinnamon.

Mix butter, sugars, and vanilla. Add eggs. Stir in the oats, flour, etc. Stir in chocolate chips and walnuts. Bake 13 to 15 minutes at 350°.

Sour Cream Rhubarb Coffee Cake

... 2014 Fair Dairy Promotion Contest

Topping:

½ cup sugar
½ cup nuts
1 Tbsp. unsalted butter
1 tsp ground cinnamon

Batter:

½ cup butter
1½ cups packed brown sugar
1 egg, beaten
2 cups flour
1 tsp baking soda
½ tsp salt
1 cup sour cream
1½ cups chopped rhubarb (1 inch pieces)

Grease and flour 13 x 9 inch baking pan. For topping, mix together sugar, nuts, butter, and cinnamon in small bowl until crumbly. Set aside. Cream butter in large bowl, then add brown sugar and egg. Cream together. Combine flour, baking soda, and salt in another bowl. Add to creamed mixture, alternating with sour cream. Mix thoroughly. Add rhubarb and mix to distribute evenly. Pour into prepared pan. Sprinkle with topping. Bake at 350 degrees until knife inserted into center comes out clean, 40 to 50 minutes. Makes 8 to 12 servings.

Rhubarb Bread

... 2014 Fair Dairy Promotion Contest

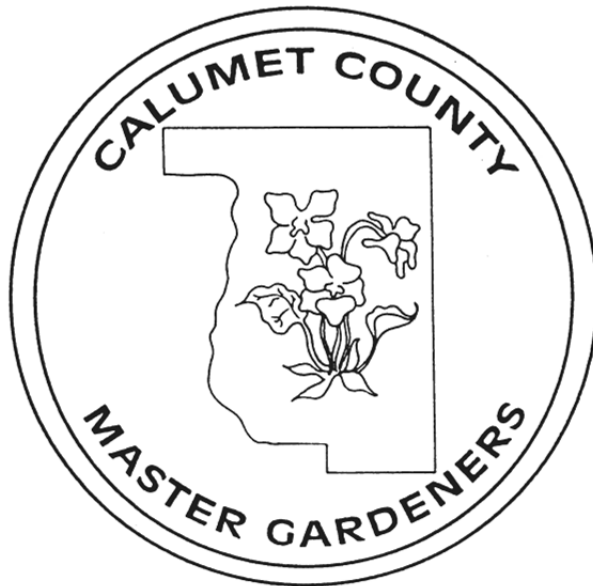
1½ cup brown sugar
⅔ cup oil
1 egg
1 tsp. vanilla
1 tsp. baking soda
1 tsp. salt
2½ cups flour
1 cup buttermilk
1½ cup rhubarb
1 Tbsp. melted butter

Topping:

½ cup sugar
1 Tbsp. butter
1 tsp. cinnamon
½ cup nuts

Mix ingredients together and sprinkle with topping mix. Bake 1 hour at 325 degrees.

Calumet County Master Gardeners
UW-Extension Office
206 Court Street
Chilton, WI 53014-1127



Spring 2015 Newsletter