

Spring
2014

The Gardener's

JOURNAL



THE BEAVER DAM

Nature's Engineers: Part Two

by John Kiger, RGWFU assistant manager

The low temperature for January 24, 2014, was a cool eight degrees. By the end of the work day, a heat wave of twenty-two degrees had settled in. The frozen remnants of Lake Katharine provided access to the beaver dam that I wrote about in the last issue of the *Gardener's Journal*. Through my research, I had found that beavers construct dams in a certain location and manner, and as I walked out on the frozen ground, I got a closer look to see if those characteristics were in place.

If you look carefully around wetland areas in late summer, you may see the physical beginnings of beavers at work. Beaver dams are built to raise water levels. The deeper water helps ensure an adequate food supply and a safe refuge for the upcoming winter months. As soon as water levels rise, beavers dig troughs through the wetlands in

instinctively chosen directions. These troughs, called "slides," allow beavers to easily elude predators and have access to food safely. Generally, construction of a dam occurs in slow-moving water. Trees that range from six to nine inches in diameter are felled close to the site. This is evident in Lake Katharine. The process of building, like any other type of construction, begins at the bottom, utilizing logs, sticks, rocks, and other debris. This method is continued until a desired height is reached. Building approximately five feet per day, these industrious herbivores easily move ten times their body weight in materials each day. Once the basic construction is complete, beavers dive to the bottom of the stream to dig out mud, increasing the depth of water at the base of the dam. This is done to ensure that the water does not entirely freeze, since this is where they store food for the winter. The mud dug from the base is brought to the surface and packed on the dam where it creates an impermeable barrier once it dries.

When the dam is complete, the beavers turn their attention to constructing their lodge. Lodges are built either on top of the dam or to the side and usually have two chambers. The first chamber is considered the drying chamber; the second is the den where the beavers live and dine in comfort. Access to the lodge is always from an entrance underwater, thereby stopping any intruder from entering their home. The beavers' dietary needs for the winter consist of smaller limbs from trees previously felled. These limbs are pulled down to the bottom and wedged into the base of the dam. The cool water temperatures keep the material fresh, much like a refrigerator. This food supply, which generally consists of about one hundred and fifty pounds of vegetation, sustains two parents and their kits throughout the winter.

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New Vines

by David Bare, RGWFU greenhouse manager

If you are an obsessed gardener such as myself, space is always an issue. While I have never seen a good reason not to rip up more grass and plant more garden, sooner or later we run out of space, time, or energy. If this is the case, consider going vertical with vines. There are dozens of excellent choices out there for adorning walls, trellises, and fences while adding a cloth of color where there once was none.

I'd like to consider some neglected choices here, starting with a plant that grabs a lot of attention in the Garden, the Caracalla bean, *Cochliasanthus caracalla*. There is a lot of confusion surrounding the name of this plant, but none of this should deter you from growing it. The plant can be found under the common names Caracalla bean, snail flower, snail vine, and corkscrew vine. There is some debate whether the name Caracalla comes from Caracas, Venezuela, or a corruption of the Portuguese word for snail, but most names reference the flower structure that is curled like a snail shell. The form is further accentuated by the color of the crystalline white flowers that are stained with a purple that falls somewhere between violet and fuchsia. The whole is reminiscent of pearly seashells. Add to that an exquisite fragrance that calls to mind early spring hyacinths.

Caracalla needs full sun and is only hardy to zone nine, so you will need to make some effort to propagate or protect it. This is easily done. The plant can be grown from seed, but flowering will be slight the first year. It is better to reproduce it from cuttings, which will root readily. Another method of preserving a mature Caracalla is to dig up the fleshy root and store it like one would keep a dahlia tuber over winter. Let it dry out on newspaper for a week or so and scrape away any decaying parts. Wrap it in paper and store in a cool, dry spot in a basement or garage before beginning again next year after danger of frost. It can also be beneficial to give it a head start by

potting it up indoors in late February to March and transplanting outdoors in spring.

In botanical nomenclature, the specific epithet is the last term of the two-part Latin name that is often meant to describe an identifying characteristic of the plant. Our next vine has the charming name of *Senecio confusus*. Its outstanding characteristic is that it's confusing. With brilliant orange daisy flowers on a twining vine, it is not hard to understand why. Very few vines have daisy-shaped flowers. Flowering is a bit sparse throughout the summer but reaches a crescendo in the late autumn just when such a color fits in to the landscape. These flowers are about the color of a construction worker's vest and are made more brilliant by a yellow central disk.



Last year we twined this vine along a fence near a Siam Ruby banana, and both the brilliance of the vines' flowers and the rusty bronze foliage of the banana were better for it. The vines in the family *Thunbergia* are without rival. *Thunbergia alata*, the common Black-eyed Susan vine is a nice addition to any garden. A step up can be found in the clock vine, *Thunbergia grandiflora*. As the name implies, the gorgeous flowers are three-inch wide funnels of usually sky blue flowers with pale yellow throats. Grand

indeed. For many years, I grew this as a conservatory plant before deciding to try it in the garden. Freeing the roots from their pots seemed to free the flowering as well, and the vine thrived along the arc of one of our pass through arbors. Like many of our tender perennials, this vine reached its stride once it had labored through the heat of summer and the cooler nights and shorter days of autumn had descended on the garden.

The array of vines available to gardeners is largely unexplored territory. They are a wonderful way to change the appearance of the garden and experiment with new plants without having to break new ground. 🌱

Make Room for the Nuthatches

by Michelle Hawks, RGWFU horticulturist

My favorite time of the day is the early morning. I love to sit on my front porch, watch the sunrise, and listen to all the different sounds of the morning. One of my favorite sounds is the birds; hearing them reminds me of my dad. He would whistle the bird songs, and I would try to guess what bird it was. Looking back, I think he made up many of those sounds just to keep me busy. Either way, these incidents intrigued me and led to a life where I truly value birds and their calls.

One bird that really gets my attention is the Brown-headed Nuthatch, *Sitta pusilla*. This dwarf nuthatch has a mostly brown cap, with the exception of a prominent whitish spot at the rear of its head. They have a blue-gray back, wings, and tail. The cheeks and throat of this nuthatch are white, with pale cream underparts. Juveniles are similar to adults just with duller colors overall. Adults are only three to four inches long with a wingspan of six to seven inches. Male and females look similar. Unlike the nasal call of most nuthatches, the brown-headed's call is a high-pitched, squeaky sound, like a toy rubber duck. Nuthatches are always easy to identify as they climb down tree trunks headfirst.

The Brown-headed Nuthatch is among only a few bird species in the world who know how to use tools. They have been observed using a small piece of bark to pry off other pieces of bark to expose insects underneath. Nuthatches will often take a seed, fly to a tree branch, jam the seed into a crevice in the bark, and break open the seed by pounding it with their bill. These birds are known to eat insects and pine seeds. Most nuthatches travel in groups known as "jars."

These birds are common in mature mixed coniferous and deciduous forests. They have a year-round range in the southeastern United States from Tennessee to Florida, including Texas, and can even be found in the Bahamas. They are one of the few birds found almost exclusively in the United States. They build their nests in snags or dead, standing trees, using cavities that are low to the ground, which can make it easier for predators like snakes, raccoons, cats, and squirrels to get to them. They will reuse an old cavity that was created by other nuthatches or

woodpeckers. In fact, healthy populations of Brown-headed Nuthatches are found in communities with the also threatened Red-cockaded Woodpecker. Some of the materials they use to build nests include bark shred, grasses, hair, and feathers.

The breeding season starts in March, hits its peak in April, and extends to mid-June. Brown-headed Nuthatches are monogamous during the breeding season, with some staying with the same partner for a number of years. Females will lay three to nine eggs, which are a light cream color, marked with reddish-brown or purplish dots. Markings are either evenly distributed as fine dots or concentrated at the large end as blotches. The female's mate assists her in caring for the young, as might a "helper" bird that is usually an immature male from previous nesting attempts. The helper will assist with nest construction, nest sanitation, and the feeding of young birds. Helper birds are extremely valuable in protecting the nests and may chase intruding birds from the territory.

Audubon North Carolina is currently leading an effort to provide homes for the Brown-headed Nuthatch due to a decline in their population. Numbers have steadily decreased by two percent each year, which has resulted

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SPECIAL THANKS TO PHIL DICKINSON AND LEE WILLIAMS FROM FORSYTH AUDUBON FOR ASSISTING US WITH CONSTRUCTION AND PLACEMENT OF THE BROWN-HEADED NUTHATCH BOXES HERE AT THE GARDENS.

Useful Phone and Tablet Apps for the Gardener

by Preston Stockton, RGWFU manager

I know, I know. Why in the world would a person want to be plugged in when they are in the garden? Sometimes I find that it is the only place to get away from the calls, texts, and internet. But have you ever been traveling and wanted to identify a particular tree or flower? Or been in the garden and needed to know about the insect munching on your petunias? Or wondered what is killing the impatiens that you have nursed all summer? Today there are some cool apps available for phones and tablets that are really worth looking into.

Leafsnap is an interesting, free app that I think is very useful. It is used to identify native trees either by looking at high resolution photographs of leaves, fruit, flowers, seed, and bark on the app or, even better, by taking your own photograph of the leaf and having the app identify it. Leafsnap was developed by Columbia University, the University of Maryland, and the Smithsonian Institution. It currently includes only native trees of the Northeast but will eventually cover the entire United States. Since many of those trees are also native to the Southeast, Leafsnap is a very useful tool. I can see using it often when traveling.

According to Leafsnap's website, the app "turns users into citizen scientists, automatically sharing images, species identifications, and geo-coded stamps of species locations with a community of scientists who will use the stream of data to map and monitor the ebb and flow of flora nationwide." So it not only aids the user but also provides useful information to others.

The Landscaper's Companion is a database of 26,000 landscape plants. There are categories of plants such as ferns, grasses, conifers, and ground covers, which you can scroll through. When you select a particular plant name, more information comes up such as hardiness, water requirements, sun exposure, growth rate, height, width, bloom time, and, especially useful these days, whether or not it is deer resistant. There are photos of the selected plant, and you can also add your own images of the plant. If it is a plant you like or want to research more, you can

add it to a favorites list where you can also add notes. There are thousands of images to scroll through.

Landscaper's Companion would be a great app to use when plant shopping or traveling. I especially like that you can determine whether or not to sort by scientific name. This app is \$4.99. For those who are interested, there is also a pro version for an additional \$5.99. With the pro version, you can add your own plant

lists and photographs. You can also create plant lists that can be emailed as a PDF to clients or contractors. This would be a great tool to use on a tablet out in the field.



For the herbaceous gardener, Armitage's Greatest Perennials and Annuals is the app to buy. Allan Armitage is well known for his books on annuals and perennials and runs the trial gardens at the University of Georgia. This app is very useful because it lists plants alphabetically or in categories such as annuals for shade or sun, deer resistant plants, or plants with interesting foliage. There is information on each plant's hardiness, height, sun exposure, bloom time, and color. There is also a link to Dr. Armitage's videos on YouTube which are interesting and informative. For people like me who love to plant shop when traveling, there is a list of garden shops in each state. Unfortunately, this list is woefully incomplete but hopefully will expand in the future. This app is \$4.99 and is available for most phones and tablets.

And yes, there are more! In the next issue, I will talk about some more neat apps for the gardener that will assist with pest and disease identification and garden design. 🌱

Sustaining Reynolda Gardens: Recycling Nature's Way

by Amanda Lanier, RGWFU curator of education

When I think of ways we can be good stewards of the environment, I often begin with recycling. Recycling is the door opener for many folks who are just beginning their sustainability journey, and, fortunately, these actions have become a way of life for many of us. In the natural world, recycling is extremely important to sustainability. In fact, without it, whole systems that clean our water and air would collapse. When we think about how to use this knowledge in the garden, I am led to the practice of composting. Composting is a wonderful activity that benefits the natural world, our own gardens, and our pocketbook.

Composting is a natural process that occurs as dead plant materials decompose. A simple explanation of this process is found in our forests. Leaves that have fallen from the trees eventually break down, release their nutrients into the surrounding soil, and, in turn, benefit the local vegetation. Leaf mulch can be seen in the garden beds here at Reynolda. We use the mulch from the City of Winston-Salem, which gathers leaves and composts them into mulch. Leaf compost on its own is a great amendment to any garden and is available in most municipalities.

Composting at home can be quite easy if you have the patience. The decomposition of plant material takes time, but the rewards are a great soil amendment that can help retain moisture, increase crop yield, stabilize a plant's health, and even protect them from certain diseases.

There are many ways to approach composting, but ultimately it comes down to the recipe. This part of the process is extremely important if decomposition is to occur. A successful pile of compost is a busy place, full of bacteria, fungi, and other organisms that feed on organic wastes. The needs of these organisms are simple: a balanced diet of carbon and nitrogen, a steady supply of oxygen, and moist conditions. The ingredients for compost are a mixture of "greens" and "browns." The "greens" include your kitchen scraps, fruit waste, grass clippings, and pulled weeds, all of which have a generally high level of nitrogen. The "browns" consists of high carbon materi-

als such as leaves, straw, paper, sawdust, and pine needles. The recipe calls for a ratio of carbon to nitrogen materials. The mathematics involved can be a bit tricky, but, for personal use, it is relatively accurate to assume you will need two parts carbon and one part nitrogen in your pile or container. When constructing your pile, it is good to alternate layers of "brown" materials and "green" materials. Once the pile is built, there is little maintenance. Add green materials as you have them and be sure to try to keep a good balance of carbon and nitrogen. Aeration is not necessary for the pile but can aid decomposition and help in reducing odors. Oxygen can be infused into the pile by turning or mixing the outer edges into the center. Composting can be as easy as starting a pile at the edge of your yard. You can make your own structure or purchase one. Many gardeners, though, prefer to use a container for composting, because it is neat and provides easy access to mix and manipulate the contents. Using a five-gallon bucket, trash can, or other container will also help you keep a good ratio of materials. The time it takes to produce compost depends on the temperature of the pile. You will notice that summertime brings faster decomposition, because the pile is allowed to heat up. Slower composting is more efficient at suppressing soil-borne diseases, and extremely hot temperatures are known to kill beneficial bacteria and fungi, so it is probably worth your time to wait.

So how does composting tie into sustainability? An average household can compost as much as three-quarters of the waste they generate, which leaves a lot less waste sitting in a landfill. In addition, if your organic wastes are allowed to decompose in a landfill, they can give off methane, a powerful greenhouse gas. If you recycle your organic material by composting, the compost stores carbon in the soil, rather than releasing into the atmosphere where it contributes to global warming. Generating your own compost can also save on the use of fossil fuels and leave a little change in your wallet.

So maybe this is your chance to do something good for the environment as well as your own garden. Composting is an easy activity that requires a minor commitment, yet yields a great ecological and economical return. 🌱

Volunteer Profile: Dina Nieuwenhuis

by *Forrest Allred, RGWFU head horticulturist*

*W*hat does one do in retirement? Move to the beach, fish, play golf, or travel? The answer for Dina Nieuwenhuis was volunteering. Although she has spent many of her vacations traveling, she decided the work after her retirement would be continuing to serve others. She has spent nearly twenty years assisting with the Children's program here at Reynolda Gardens.

Dina's professional career did not have roots in horticulture or children's education. After graduating from Agnes Scott College in Decatur, Georgia, with a degree in mathematics, she went to work with Wachovia Bank. In 1995, after thirty-five faithful years with the bank, she retired. Following her retirement, a friend from church introduced Dina to the docent program at Reynolda House Museum of American Art. With her love of plants, she joined the flower committee, arranging flowers and decorating Reynolda House for Christmas.

One day, while reading the Winston-Salem Journal, she saw an article featuring Reynolda Gardens and our volunteer program. She came to the Gardens and met with Camilla Wilcox, then curator of education. This meeting shifted Dina's attention to her own passion for gardening, and, more specifically, to the opportunity to teach children. Having grown up with an appreciation for gardens, she decided it was important to share her experiences. Her parents, John and Annie Nieuwenhuis, loved gardening. On Sunday afternoons, if the weather permitted, her mother would drag her into their garden to do odd jobs and to teach her about different plants. It was just a part of their life.

Dina's love of gardening actually goes back three generations and across the Atlantic Ocean to flowering bulb production and sales. Her family was originally from Lisse, a town in the Netherlands, which is home of the famous Kuekenhof Gardens. Her grandfather Johannes started a flower bulb business, Gebroeders Nieuwenhuis (Nieuwenhuis Brothers) in the 1890s. Johannes had six sons and one daughter, and he sent his sons to different countries to learn their language and become salesmen



for the company. From there, the business expanded into Sweden, Britain, Germany, and the United States. John, Dina's father, was originally sent to Germany, but he later traveled to Great Britain, after the death of a younger brother, to manage the British marketing. Prior to World War II, business had become so successful in the United States that John and his brother George were sent here to set up a subsidiary. The war broke out in 1939, disrupting both production and distribution, and leaving John and George stranded. Despite the risk of traveling, they both returned to the Netherlands by 1941. John and George came back to the United States with their families in 1946 and settled in Mt. Airy, North Carolina, where they established the Surry Bulb Company. John began to grow gladioli and managed the subsidiary while George marketed and sold imported and locally grown flower bulbs.

The Nieuwenhuis family also pursued flower bulb development. Arie H. Nieuwenhuis, Dina's uncle, and Dr. W.E. de Mol hybridized tulips and became very well known. Arie's primary work was with Darwin and lily-flowered tulips. Some of his hybrids that are still widely grown are 'West Point', 'Elizabeth Arden', 'China Pink', 'Maytime', and 'Queen of Sheba'.

As a volunteer, Dina's goal has always been to showcase Reynolda Gardens. Coming from an avid gardening family, she was exposed at an early age to nature and knows the importance of children having learning experiences in the natural world. "Even though I do not volunteer in the gardens, I love the surroundings. Too many of

the children today have never been in a garden." Dina said, "I also enjoy the staff at Reynolda Gardens – they keep me coming back!"

Besides her work at Reynolda, Dina has also spent time volunteering at the Historic Bethabara Park herb garden beside the Buttner House and with the Audubon Garden Club. She has several West Highland terriers and has worked with Carolina Westie Rescue in Wilmington, North Carolina, assisting with transporting dogs to their new homes.

What a legacy! We owe many thanks to the generations of Nieuwenhuises for their appreciation of the gardening world and their desire to share it with others. Dina is certainly a favorite of the Reynolda staff, and we are grateful for her many years of service. 🍀

Make Room for the Nuthatches

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in a forty-five percent decline over the last thirty-five years. The destruction of pine forests by intensive logging has removed many of the trees they need for habitat. These events are of major concern, as are forest fires and new house construction, which has contributed to limited nesting sites.

Reynolda Gardens is participating in this project by placing ten nesting boxes throughout the property. It is the hope of the North Carolina Audubon Society to install 10,000 Brown-headed Nuthatch boxes in appropriate locations by 2015. The loss of their habitat has caused the birds to become a high priority for conservation in the Piedmont region.

In the next issue, I will provide specifics of the Audubon project. In the meantime, see what you can do too. Build your own nesting box or go to a local bird center and purchase one. Make your yard bird friendly, make it a family affair, and encourage your neighbors to do the same. Getting involved to help these fascinating birds thrive will not only help them, but the diversity of your own community. 🍀



Nature's Engineers: Part Two

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There are both positives and negatives to a beaver's dam. On the positive side, the increase in water provides additional habitat for aquatic life such as frogs, turtles, fish, and waterfowl. The negative side is obvious, flooding. Train trestles and bridges have been compromised, and farmers have had entire crops threatened or destroyed by the flooding of low lying areas.

Destroying a dam is pointless without relocating the beavers. They can rebuild it in a single day. As is the case with most wildlife, a permit is required by law in order to remove a beaver.

Beavers typically build more than one dam. The first, being upstream, contains their lodge. While others, possibly two or three, are built further downstream. The one I found on Lake Katharine is most likely a secondary dam. There is no noticeable sign of a lodge, and the depth of water in this place would not sustain a sufficient food supply.

I have never given much thought to beavers other than knowing that they build dams. It is amazing how a little research can open one's eyes. These are truly fascinating creatures. 🍀

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