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SPRING CLEANING THE WATER GARDEN *by Craig Mauney, Horticulture Agent*

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Has your water garden gotten all messy from winter? Does it need some freshening up and the water's not as clear as it was last year? If you have a water garden, spring is the time to evaluate if it needs cleaning and if it does, it needs to be done before it fully resumes biological activity in the pond. If there is sediment build up on the bottom (a half inch or more) and leaves are floating on the top and the water is a little murky, cleaning will keep the fish healthier and it will help keep unwanted algae from growing.

Evaluate the pond and if you have been good at pruning plants and skimming debris, you shouldn't have to drain the pond but every 3-5 years. It is best to not drain the pond more than once per year to keep clear water. There are beneficial bacteria in ponds that help keep some algae in check. It is best to drain when the temperature is 55 degrees F, but go ahead and drain when you have to.

If you just have a simple plastic tub with no fish, you can just drain it and clean it. Use the water held over the winter to water plants in the landscape. Clean the sides with an old sponge and save the living plants to add back. You may have to replace some of the plants that like warmer weather and did not over winter.

For the regular pond, depending on the amount of decomposed debris, you probably can use a net to clean small pools. For larger ponds, or where a lot of debris has settled at the bottom, you will need to

pump the water out with an existing or submerged pump, or by siphoning. If you have small fish, place some screen over the hose or pump to keep them from being sucked out. You can transfer most of the old water to a clean garbage can, children's wading pool, or large buckets to be used for watering plants. Or, merely water lawns and garden beds with the nutrient-rich water.

As you lower the water level, carefully remove the plants. If you have fish in your pond, pump the water level down to about six inches and then catch them with a net. Put the fish in holding containers of the "old water," covering these with netting to discourage predators, and to prevent them from jumping out. Keep fish out of direct sun, and get your cleaning done soon so they can be reintroduced the same day. They're weak after a long winter, so you want to minimize stresses on them.

Once the pond is empty, quickly rinse the walls. Some prefer to use a forceful nozzle on a hose, rather than pressure washer, to try to leave some of the algae on the sides and rocks. This will help your pond "ecosystem" reestablish more quickly. If you have rocks and gravel buried in sediment,



you may need to remove them and clean out the sediment before replacing. With the water out, check liners and hoses for leaks and repair, and clean or replace filters.

After washing, pump the remaining water out, or use a wet/dry shop vacuum. Then refill with clean water, adding a neutralizer

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chemical (according to label directions) if you have fish, to hasten de-chlorination. If you did a thorough cleaning, or did so during warm temperatures, you may want to jump start your beneficial bacterial with a commercial microbe product.

Replace the plants, giving those that need it a trim first, repotting or dividing them if the pots are bursting at their seams. You can add fertilizer to pots, granular mixed with the soil or special pond tablets pushed into it. If you have fish, use fish-safe fertilizer pellets.

When the water temperature stabilizes, you can return the fish to the pond. Check first to make sure they are healthy, with no visible signs of disease or parasites, in which case you'll want to quarantine them. There should be no more than a three to five degree difference in temperature between the old and the new water to prevent shock to the fish.

It's a good idea to add some hiding places for fish and

frogs in the pond as a guard against predators. Pond walls that slope straight down from the sides, as opposed to gradual slopes with shallow areas, which wading birds like, also help prevent predators from cleaning out your fish. An owl or heron decoy placed near the pond may help, just remember to move it often to simulate the real thing.

Plants will keep water clear as they absorb the nitrate buildup that naturally occurs in ponds. However, throughout the summer, you will need to regularly prune plants both to control algae and enhance the appearance of the water garden. One rule of thumb is that the pond surface should be 60 to 70 percent filled with plants, maximum. Periodic skimming and netting will also keep your water feature attractive, and minimize spring cleaning next year.

Follow these steps and your water garden will be a low-maintenance and beautiful asset to your landscape, not a high-maintenance eyesore. Check local complete garden centers for plants and supplies.



From the Master Gardener Hotline: Moles and Voles

By Bert Lantz, Master Gardener

A recent call to the Master Gardener Hotline was from a woman who wanted to know how to control moles. Evidently the little creatures were making tunnels everywhere and her yard was a mess.



Sometimes it is difficult to know if the problem is moles, voles or a combination of both. Moles and voles are really quite different. Moles are a special type of carnivore having a diet of insects and other smaller creatures such as worms, grubs, ants, and beetles. Voles have a much different diet and are considered vegetarians. There are two types of voles in NC. Meadow voles are the larger of the two and live mainly above ground. They create trails and small piles of droppings can be found in grassy areas where they are active. They feed primarily on grasses and dropped fruit, and will also feed on the bark of young trees, especially during the winter when food is scarce and their population is high. Pine voles tunnel underground and feed on underground tree and shrub roots. Both types of voles may use mole tunnels, and can cause damage to landscapes and gardens. A close inspection of the damaged plant will show gnawing marks, either at the above-ground level for meadow voles, and under the soil line for pine voles. Another sign is finding golf ball holes around tunnels where the voles are exiting. Moles exit their tunnels only once a year to mate and do not dig these escapes or exit holes.

An apple test can also be used to verify the presence of voles. Start by placing a 1/2" cube of apple under a 1 foot

square shingle. If there is pine vole activity in the area, the cube will usually be removed within 24 hours. If meadow voles are suspected, keep the shingle approximately 2 inches above ground level.

Voles are considered a pest and lethal control, such as trapping may be used to control a vole population. An ordinary mouse trap may be used, placing the trap in the tunnel and leaving a hole above the trap so it can be checked. Peanut butter as a trap bait has been successful in attracting voles. Place a cover over the trap using a small box or flower pot to protect other animals from being caught in the trap. Non-lethal methods may also be used, such as removing grass thatch from the area, and placing screening around plants that are to be protected with at least 6 inches of the screen underground.



In NC, moles are considered wild, non-game animals and are protected under the law. There is no hunting or trapping season for moles. This means you can not trap or kill moles in NC without having a permit from the Wildlife Resources Commission. The reason for this is that some years ago, the NC authorities determined that the mole population was becoming very low and regulations were established to protect the mole species. A mole can have only one litter per year, and the size of the litter is usually quite small (2 to 6 is not unusual). Young moles sometimes have a difficult time surviving, and have less than a 50% chance of living long enough to

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Snake Control by *Wendi Hartup, Natural Resources Extension Agent*

We get a lot of questions about snakes this time of year. Most folks want to know if they have a poisonous or nonpoisonous snake in their yard. There are approximately 37 species of snakes found in North Carolina. Only SIX of the 37 species are venomous and only **three** of those are found in the Piedmont area of North Carolina. They are copperheads, rattlesnakes, and sometimes cottonmouths.



Copperhead

its body length. So a reasonable distance will keep you safe. Give the snake time to go on its way.

DISTINGUISHING BETWEEN VENOMOUS & NON-VENOMOUS SNAKES

If a confrontation is unavoidable, how can you tell the difference between a venomous copperhead and a harmless rat snake? The rattlesnakes, copperhead, and

Snakes range in size from a few inches to more than 8 feet. North Carolina's non-venomous snakes have many tiny teeth. If you, a child or a pet is bitten by a non-venomous snake, the bite will look like a horseshoe of tiny scratches. Clean the area well with soap and water and wipe it with hydrogen peroxide. If only one or two puncture wounds are present, or if you are allergic to snakes, or if you are not sure the snake is non-venomous, go to a doctor. Unlike venomous snakes, most non-venomous snakes cannot bite through clothing.

Most snakes kill their prey by smothering them or by squeezing them, not by biting. Their tiny teeth point backwards, to help them swallow their prey. Snakes do a

cottonmouth are pit vipers. They are characterized by a pit between and slightly below the eye and nostril, long movable fangs, a vertically elliptical "cat's eye" pupil, and a large triangular-shaped head that has a small, smooth, shiny cap over the nose. Non-venomous snakes have round pupils, a large smooth cap over the top of the head past the eyes, no pits and no long fangs.

SNAKE CONTROL

Most people are bitten when trying to kill or handle a snake. As a general rule, snakes are just as frightened of you as possibly you are of them. Often they move as quickly as possible in the other direction. Snakes are seen more often in the spring or fall as they search for food or move to and from a hibernation area.

Repellents such as sulfur or mothballs have proven ineffective at keeping snakes away from residences. However, snakes can be easily moved. Small snakes may be swept into a box or bag and removed. A large snake can usually be carried outside suspended over a long stick.

PREVENTION

There are four main ways to discourage snakes from moving into a yard or home:

- **Eliminate** cool, damp areas where snakes hide. Remove brush and rock piles, keep shrubbery away from foundations, store firewood and lumber away from residences, and cut tall grass. Reduce mulch layers around shrubs to about 2 to 3 inches in depth to discourage small animals.
- **Control** insect and rodent populations (the snakes' primary food source) to force them to seek areas with a larger food supply. Put grains in tightly sealed containers and clean up residual pet food, bird seed and debris.
- **In rattlesnake-infested areas**, construct a snake-proof fence around the backyard or play area. The fence is made of 1/4 inch mesh wire screening built up 30 inches and buried 6 inches underground. It should slant outward at a 30 degree angle from bottom to top. The supporting stakes must be inside the fence and any gates must fit tightly. Tall vegetation just outside the fence should be removed to prevent snakes from climbing



<p>Juvenile Copperhead - notice yellow tip on tail</p>	<p>Juvenile Black Snake -notice round eye</p>
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wonderful job of keeping rodent and insect populations down and they will also eat eggs. They swallow their food whole, without chewing. A snake can unhinge the jaw so it can eat something up to one and a half times larger in diameter than the snake. After eating a large meal, a snake will not feed again for up to a month.

Snakes do not see well, and they have no middle ear so they don't hear sounds as we do. They detect movement through changing color patterns and vibration. Snakes see shapes but not details. Unlike humans, snakes do not use their noses to smell. Instead, the snake smells through an organ on the roof of the mouth called the Jacobson organ. When a snake flicks its tongue in and out of its mouth, it collects scent particles from the air which the snake passes to the Jacobson organ.

Did you know most snakes - even venomous ones - are not aggressive and would rather avoid a confrontation with people? A snake can only strike within a distance of one-half

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over it. Make certain the gate fits tightly and swings into the play area. The cost of the fence may make it impractical for an entire yard.

- **To prevent snakes from entering** basements and crawl spaces, seal all openings 1/4 inch or larger with mortar, caulking compound or 1/8-inch mesh hardware cloth. Check for holes or cracks around doors, windows, water pipes, electrical lines, etc. All doors and windows should have tightly fitting screens.

The only lethal measure recommended is a long-handled shovel or hoe to kill the snake by severing the head from the body. If you are not comfortable DO NOT attempt to mess with the snake. It will eventually move out of your yard. NEVER handle the head of a venomous snake alive or

dead. A recently killed snake may bite by reflex action.

Venomous snakes should only be killed if their presence endangers humans or pets. More than 80% of snakebites occur when a person is trying to kill or handle a snake. If

the snake is encountered outdoors, the best defense is to back slowly away from it. If you must walk around the snake, give it some room--at least six feet. Leave it alone and don't try to catch it!

Cottonmouths get their name from the white coloration inside the mouth that they keep open as a threat to their enemies.



Canna - by Derek Morris, Horticulture Technician

If you happen to be looking for a low maintenance perennial that loves our heat, high humidity and blooms all summer long, look to the Canna. They are as tough as nails and they come in hundreds of varieties with blooms to fit in any color plan. While most Cannas are known for their brilliant and flashy colors that show from a distance there are also varieties available in pastel shades. Cannas are a must in "tropical" themed gardens with their flashy blossoms and large paddle shaped leaves and grow best planted in full sun locations. They will handle being planted in partial shade but will multiply and bloom much better in full sun. Cannas are also quite drought tolerant once established and multiply over time by underground rhizomes. Within a year or two you will have a sizable clump that can be divided to plant elsewhere or give away to friends and while they can handle dry spells quite well they will grow most luxuriantly if given ample moisture and fertile soil. When planting Cannas, do not skimp on adding



Bengal Tiger

compost and/or manure to the planting hole. A good layer of organic mulch placed around the plants will help keep the soil rich and moist. An organic fertilizer can be applied monthly during the growing season – fish emulsion is especially good.

Cannas are not only great flowering plants but are also grown for their showy foliage. Three varieties with especially attractive foliage are 'Bengal Tiger' which has yellow striped leaves, 'Tropicana' with pink and red striped leaves, and 'Bangkok yellow' which has white striped leaves. Some varieties have bronze colored leaves and one variety known as 'Australia' has foliage that closely approaches black. This variety is particularly stunning when covered in its brilliant red

blossoms. Most varieties grow from 3 to 6 foot tall but if you are looking for something even larger there is the Banana Canna which can grow up to 10 foot tall and sports gigantic leaves. Most people choose a variety based on flower color. A few popular reds are 'President', 'Red Knight', and 'Valentine'. Some popular and recommended orange varieties are 'Wyoming' and 'orange beauty'. A highly popular bright yellow variety is 'Richard Wallace'. 'Pink Beauty' is a very bright pink and 'City of Portland' is an old variety that is a coral/salmon. There are also some varieties with variegated blossoms such as the red and yellow 'Lucifer' and orange and yellow 'Florence Vaughn'. 'Panache' is a particularly exotic looking variety with orchid like blooms in a pastel yellow suffused with salmon.



Australia

Cannas, if well cared for are pretty much trouble free. Keeping the plants deadheaded will ensure continual bloom and keep the plants tidier looking. If you happen to notice distorted leaves unfolding with holes, you are likely seeing damage from the canna leaf roller. The best remedy is to simply cut off the particular stalk that the leaf is found on near ground level and destroy the cane that you have cut. The canna leaf roller is usually not a major problem in our area. Japanese beetles will sometimes feast on the flowers making them unsightly. They are best dealt with by knocking them off into a coffee can of water early in the morning when they are sluggish and easy to capture. Be sure and place a lid on the can so none can escape.

Cannas will die down to ground level once we have a freeze in the fall and at this time you can cut off dead brown

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tops and compost them or they can be left till spring and then removed. Thick mulching with pine straw or leaves during the winter will ensure that your Cannas will return for another display the following season.


Container Gardening *by Craig Mauney, Horticulture Agent*



Container gardening is a good way to add personality to your landscape. A container can add dimension or be a focal point. This can be done with the choice of container and plant material. The main concern one should have when deciding to grow plants in containers (whether the plants are annuals, perennials, vegetables, herbs or even small shrubs) is that all the plants must have the same cultural requirements such as light and water. You may combine any plants such as a small shrub and flowers as long as each plant's needs are the same. With some basic guidelines really anything is possible with container gardens.

- **Containers:** The container needs to be large enough to hold the roots of the plants when they are mature so read the plant label and make sure the container fits the plant. Make sure the container you use has a drainage hole in the bottom. A small rock on the hole will keep the pot draining. There are all types, shapes and sizes available in clay, cement, metal, wood and plastic resin. The new plastic resin is more lightweight and retains moisture well. They can be left outside all year without fear of cracking.
- **Design:** The basic design for a container is to use three elements – something tall for a focal point, medium size dense plants to surround the focal, and showier species to soften the rim and possibly cascade over the side. Try experimenting with leaf colors, mixing annuals and perennials.
- **Planting Medium:** Never use garden soil in a container because it will compact more and not drain well. A better plan is to use a good quality soil-less potting mix. Container soils are best changed every 2

years.

- **Planting:** Always start out with a clean container. Wash a used pot with a 10% bleach solution and rinse it out. Moisten the potting medium before planting. Position the plants in the container at the same depth they were in the original container. Make sure you have a minimum of 3 inches of soil beneath the root ball for additional root growth. An inch or so from the top of the container is needed for watering space.
- **Watering and Fertilizing:** Watering requirements will be determined by the weather, size of pot, type of pot, and location of your container. The plant species should also be a main consideration when watering. Check the container daily and even twice per day on hot windy days. A good test is to stick your finger in the soil medium and only water if it feels dry. Water the container until the excess water runs out of the hole in the bottom of the container. If the soil has dried out so much that it is receding from the sides of the pot you must rehydrate the soil by submerging the pot in water until the soil stops bubbling or if too large water several times until the soil is holding water again. Always dump out any water left over in a saucer to avoid soluble salt build up. Frequent watering flushes out a lot of the nutrients you provide. A regular fertilization schedule should be followed to keep the plants healthy and actively growing. Add a balanced fertilizer (20-20-20) to the soil according to the directions on the package at the time of planting. A good rule is to use soluble fertilizer and apply weekly at one-quarter the recommended rate.
- **Maintenance:** During the growing season of the container it will be important to check regularly for disease and insect problems. Cut out any dead or damaged plant parts and remove disease parts or plants. Spraying the foliage with water can usually control most insects. Keep the plants trimmed back to maintain a pleasing size and shape or to promote a thicker appearance. If bringing the plant indoors for winter, then do so before the heat in your house is turned on. This will allow the plant to adapt to the indoor conditions. The light and humidity is different indoors than outdoors. Any containers that can break with harsh weather not being brought in should be stored in a basement or garage. Plants that go dormant can be cut back and stored in the container but keep the soil barely moist throughout the winter months. 

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reproduce. Moles are very shy animals, and are harmless to pets or humans. As mentioned earlier a mole's diet is almost entirely animal, including worms, grubs, ants, beetles and insects. They are generally 5" to 8" long, and are capable of tunneling up to 15' per hour. Once the tunnel has been dug, it is seldom used by moles again. With current regulations, it is extremely difficult to get rid of moles. The good thing is that usually mole populations are small and there may only be one or two moles causing a problem. Moles respond to changes in food sources and may only be on a property for a couple of weeks at a time. Reducing the amount of lawn watering may temporarily help by reducing the food source. Since moles have an animal diet, it may be helpful to control the grubs and beetles by applying insecticides. Numerous home remedies such as moth balls, pepper, bleach, castor oil, thorny shrub or rose branches placed in the tunnel, broken glass and human hair balls have also been recommended, but their effectiveness is questionable. In conclusion, most damage to plant life is caused by voles and with a determined effort, they can be effectively controlled.

Why Black and White?

I am sure you were surprised to see this issue of GardenWise come to you in black and white and are wondering just why we would do that. As with so many things, the reason is \$ money \$. Cooperative Extension creates a lot of publications and we love to do it in color. We think it makes the publications more attractive to our readers and in some cases, such as in the Snake Control article in this issue, it helps to more clearly show the subject of the article. But we all recognize the economy we are living in and if you do not know, color is expensive! As many of you already know, we do have our GardenWise newsletters available on our website and those will continue to be in color for you to read and/or print. If you are a hard copy subscriber and would like to instead receive an email with a link to our latest newsletter when we post it to our website, please let us know. This will save us ink, paper and postage so it's a great way to go. Our most recent newsletters can be found on our website at: www.forsyth.cc/CES/LawnGarden/newsletters.aspx

We appreciate our readers and thank you for your support and understanding. - Craig Mauney