For our mid-summer issue, we wanted to address several pressing issues. All of us living in northwest Florida are extremely concerned about the oil spill in the Gulf of Mexico, and agents who work with water quality and coastal issues have spent countless hours trying to keep up with developments and get factual information and help to the affected communities. In addition to questions about the spill, lawn issues and vegetable garden concerns account for many of the calls we get this time of year. If you are looking into additional landscaping, try some of the plants recommended in this issue, and keep an eye out for helpful creatures in your neighborhood, like bats and assassin bugs!

Tomato Disorders Mistaken for Diseases

There are times when gardeners suspect their tomato crop has some type of disease only to discover it is a physiological disorder instead.

There are many disorders that one could mistake for a disease. Blossom-end rot (BER) and sunscald are two common disorders.

Blossom end rot

Blossom-end rot is caused by a lack of Calcium (Ca) in developing fruit. There are several conditions that may cause BER: low soil Ca, using high nitrogen rates, high concentrations of soluble potassium and magnesium in the soil, too much or too little moisture, damage to the root system by nematodes, diseases, or mechanical damage. The best prevention is good fertilization and water management. Damage to the fruit results in a slight discoloration occurring at the blossom-end (bottom) of the fruit. This area enlarges rapidly producing a
brown or black sunken area. The skin over the affected area becomes dry and leathery.

![Blossom end rot](image)

Blossom end rot
Photo Credits: Dr. Steve Olsen

**Sunscald**

Sunscald is caused by sudden exposure to sunlight. There are two types of sunscald, sub lethal and lethal. Sub lethal causes a yellow, hard area that occurs on the shoulder of the fruit. This occurs when the tissue temperature is above $86^0 F$.

The red pigment does not develop and the flesh does not soften because of the high tissue temperature. The high temperature causes the yellow pigment to develop.

![Sub lethal sunscald](image)

Sub lethal sunscald
Photo Credits: Dr. Steve Olsen

With lethal sunscald, the tissue turns white and dies. Many times the dead tissue will turn black from fungi that are feeding on the dead tissue. Lethal sunscald occurs when tissue temperatures rise above $104^0 F$. Damage usually occurs when fruits are suddenly exposed to sunlight. This most frequently occurs after a harvest or a storm when leaves are moved around and fruit exposed. Overpruning can also increase sunscald problems, especially with fruit in the upper part of the plant.

Source: *Physiological, Nutritional, and Other Disorders of Tomato Fruit*, Document HS-954, August 2009, Dr. Steven Olsen, professor, Department of Horticultural Sciences, North Florida Research and Education Center, Quincy. Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611.

![Lethal sunscald](image)

Lethal sunscald
Photo Credits: Dr. Steve Olsen

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**Waking Up to Save the Gulf**

“When one tugs at a single thing in nature, he finds it attached to the rest of the world.” - John Muir

I have a friend that went to sleep reading a book using his arm as a pillow. He awoke in a panic to find a cold rattlesnake wrapped around his head staring him directly in his face. Quickly, he grabbed the snake and with
all the courage and might he could muster, he threw the snake across the room!!! Only there was no snake - his other arm had fallen asleep as the circulation was cut off. He had just thrown his sleeping arm out of its sock- et, which wrenched with pain.

Often in life we find that “everything is connected.” Many times painfully.

An oil spill can be a very scary monster. Like our nightmares, true reality gets lost in the hysteria of the first moments of awaking from a bad dream. We react without thought and often pay the consequences for not thinking through our response. America’s eyes are intently focused on the news media pictures of gushing oil from the bottom of the sea floor and oil-covered pelicans – but there’s another consequence of the oil spill scarcely reported.

When we become hyper-focused on addressing one small portion of an environmental issue we can make things worse than if we had done nothing at all. When we have given our best efforts to remove oil and those efforts have failed we should consider letting natural processes take over. This is a much better approach than doing something that can cause more harm than good. We should not react just because we thought it was a good idea or our neighbor did it.

The incident at Mississippi Canyon 252 is not the first time oil has spilled into our oceans. Ten years ago NASA scientists reported that the Gulf of Mexico naturally oozed enough oil to fill the equivalent of 2 Exxon Valdez sized vessels each year and has been doing so for thousands of years. This doesn’t mean that it’s okay to permit gushing oil to enter estuaries and pristine oceans. However, our Gulf has been vaccinated with small doses of natural oil seeps for a very long time. Oil decomposing microbes are always present to break oil products into less toxic forms. So, in some cases depending on oil condition and type of habitat, letting nature take its course is the very best response. In other situations and environmental conditions removing oil from ecosystems can be done with great success and it is the proper thing to do.

Beach cleanup

NOAA Office of Response and Restoration is one several responding government agencies involved in the Gulf at this moment. Their experience and studies enlightened me as I reviewed their website and literature. Based on current conditions written on the date of this article, and our location – the weathered oil conditions that might enter our salt marshes would generally be responded to very differently than nearby beaches. NOAA Response and Restoration has several targeted strategies based on oil type, habitat conditions, and the suggested actions are based on data collected over decades. Below are only two examples. Please refer to their website for additional information.

http://response.restoration.noaa.gov

Tar balls on Pensacola Beach. While unsightly, they are easier to clean up than on vegetated shorelines.
Photo Credits: Andrew Diller, UF IFAS

The beach is the easiest areas of the coastal shoreline to clean. In fact, as a last resort, oil is directed to beaches for removal. Machinery and personnel are deployed to an impacted area and in a relatively short period contaminants are removed. The goal of machine and man is to remove tar or oil and as little sand as possible. Although this is usually an effective operation, observation on Pensacola Beach reveals that oil residue not cleaned up immediately can be buried with the incoming tide. It’s not an easy choice to allow or direct oil to land on a beach. However, it’s often better on a beach than in our bays and salt marshes.
Salt marshes

Salt marshes are more challenging to clean than beaches. Oil often coats plants like cordgrass and needle rush, and it’s nearly impossible to remove oil from the salt marsh mud or sediment. Oil can kill emergent marsh grasses and is very difficult to remove. Running crews and machinery in a salt marsh is the worse possible response versus all other strategies, including burning. In fact, burning or allowing nature to break down the oil are often the best strategies because machines and boots mix the oil deeper into sediment and prolong the impact of the spill.

The Wetlands Foundation and Dr. Irv Mendelssohn, Louisiana State University School of the Coast and Environment, have released a youtube video describing potential oil impacts and mitigation responses on salt marshes. He describes factors that determine whether the marsh will die and factors to consider when deciding what action, if any, should be taken to decontaminate marshes. [http://youtube.com/user/thewetlandfoundation](http://youtube.com/user/thewetlandfoundation)

Oil can kill emergent marsh grasses and is very difficult to remove.

[Photo Credits: NOAA](http://www.noaa.gov)

Innovative responses should be well planned and well thought-out. Ecological consequences should be investigated and at minimum mitigated. As we have already seen in some states, pumping sand to create oil barriers can suck in fish, crabs, shrimp, and host of other animals causing significant impact. Similarly, creating beach berms, as we have seen in Florida and other states, can damage bird nesting areas and rookeries. As a result of the berms, endangered sea turtles have a double threat of seaward oil that can be ingested and a blockade of sand limiting access to natal nesting. Due to the potential exposure of newly hatched turtles to oil, recently laid eggs are now being transported to beaches on the east coast of Florida for release after hatching.

I doubt anyone woke up this morning setting out to kill-off an ecosystem or endangered species – worsening the impacts of the oil spill. Surely, this is only a bad dream, if we can just wake up and react rationally.

For more information about Florida Yards and Neighborhoods and protecting the waterfront, visit [http://fyn.ifas.ufl.edu/FFL/protecting-waterfront.html](http://fyn.ifas.ufl.edu/FFL/protecting-waterfront.html)

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Chaste Tree

The showy chaste tree makes an attractive specimen as the centerpiece of your landscape bed or in a large container on the deck. Easy-to-grow, drought resistant, and attractive to butterflies and bees, *Vitex agnus-castus* is a multi-stemmed small tree with fragrant, upwardly-pointing lavender blooms and gray-green foliage. The chaste tree’s palmately divided leaves resemble those of the marijuana (*Cannabis sativa*) plant; its flowers can be mistaken for butterfly bush (*Buddleia* sp.); and the dry, darkened drupes can be used for seasoning, similar to black pepper, making it a conversation piece for those unfamiliar with the tree.
Seeing Spots in your Lawn?

Hot, humid conditions that are typical of our summer can intensify turf disease problems, especially when we encounter several consecutive days of cloudy, wet weather. One such disorder that is common on St. Augustinegrass is a fungal disease called gray leaf spot.

Symptoms

This is an easy disease to "spot". The infected grass blades will have irregular gray, dirty-yellow or ash-colored spots with brown or purple borders. Spots will eventually unite to turn entire blades yellow and then brown. Heavily infested blades wither and cause the lawn to thin and generally look unhealthy. Under heavy disease development, the grass may have a burned or scorched appearance.

Initial symptoms include small size spots are are olive-green to brown in color.

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Spores of this fungal disease are carried by the wind, splashing rain, irrigation water, and mowers to sites of new infection. Seldom will this disease kill an entire lawn, but can thin it severely enough to be unsightly and encourage weed infestations.

Prevention and Treatment

To prevent or overcome this disease, it is critical that you maintain a healthy turf through good management practices.
One environmental condition that favors the spread of this disease is when leaf blades remain wet for more than twelve hours and air temperatures hover between 80 and 90 degrees F. Although we can’t do much about the weather, we can control our irrigation. Overwatering or irrigating in the evening provides the prolonged period of wetness required for this disease to infect your lawn. Be sure to water only in the early morning hours and be finished by sunrise. The sun will dry off leaf tissue and eliminate long periods of wetness.

Excessive applications of quick-release nitrogen fertilizer enhance disease severity. Use slow-release nitrogen sources. It is also beneficial to apply a fertilizer that contains equivalent amounts of nitrogen and potassium.

In addition, application of the herbicide atrazine increases the susceptibility of St. Augustinegrass to this disease.

Be sure to mow regularly at the proper height with a sharp blade and only when the turf is dry. If the ends of the grass blades are ripped or shredded due to a dull blade, the fungus has a much easier time invading the grass blade and producing symptoms.

Almost all St. Augustinegrass lawns will have some gray leaf spot disease. If the disease becomes a serious and persistent problem however, you may need a fungicide. Look for products containing:

• Propiconazole: Bayer Advanced™ Fungus Control for Lawns or Fertilome Liquid Systemic Fungicide
• Thiophanate methyl: Scotts® Lawn Fungus Control
• Trifloxystrobin: Compass™

Always follow the product’s label directions and precautions.

Not Just a Bug

Although it may appear to be just a bug, the assassin bug is a helpful visitor to your garden whose presence should be encouraged. One would think that this red and black predator would be easy to see on flowers and shrubs, but the assassin bug moves around stems to remain hidden. It is a general feeder, eating caterpillars, flies, beetles, and other bugs that come within spearing distance. Instead of grabbing the prey, the bug will use its piercing sucking mouthparts (beak) to ambush a meal and then suck out the fluids. The mouthparts lie underneath the head when the insect in not on the attack or feeding.

Assassin bugs can be found in the garden during most of our growing season. They overwinter as adults, and the females lay eggs on plant material when temperatures are warm. The nymphs look similar to the adults but lack developed wings. They molt about four times before becoming adults with fully-developed wings. Some adults in this group may be brown or gray in color.

An assassin bug waits on a leaf for a meal.
Photo Credits: http://entweb.clemson.edu/

If you think you see many assassin bug nymphs grouped together on a plant, you are probably seeing one of the leaf-footed plant bugs (Coreidae). These feed on plants, especially vegetables, and are pests in the garden. Assassin bugs are found singly because they are predators.

Even though the assassin bug is beneficial, be cautious
A Batty Idea

4-H Project BATS (Bats, Applied Technology, & Science) was created by District Extension faculty to teach youth and their families the important role bats play in local ecology and pest management. With over 1,000 species of bats throughout the world, ranging in wingspan from 6 inches to 6 feet, there is no shortage of information available to encourage a fascination with these creatures.

A new bat house at the Langley Bell 4-H Center in Escambia County was completed in early June.

Photo Credits: Carrie T. Stevenson, Escambia County Extension

In addition to educational programs and bat-house building workshops at schools and camps, one important goal of the Project BATS team was to build a large bat house in Escambia County, similar in scale to the one at the University of Florida’s Gainesville campus. Currently the largest occupied bat house in the United States, it is home to over 100,000 free-tailed bats. The Escambia County 4-H Foundation owns and operates the Langley Bell 4-H Camp, which has several acres of forest, open land, a pond, and wetlands. The camp is used for youth programs and field trips, and was an ideal spot for the large house.

With the expertise of UF Wildlife Specialist Holly Ober, Ph.D., (North Florida Research & Education Center) and blueprints for a bat house obtained from Bat Conservation International in Austin, TX, a plan was formed for the house. A carpentry class from Pensacola Junior College donated their time and labor (an in-kind donation of $17,850) and in just 12 days, completed the house in June. Based on the experience of the Gainesville bat house, it will take a year or more to attract a large permanent population of bats. In the mean time, however, the house will be used as a learning tool and visual aid to teach youth about the types of bats living in northwest Florida and their crucial role in the environment.

Eight roost modules will provide shelter for bats forming a colony in the new house.

Photo Credits: Carrie T. Stevenson, Escambia County Extension

At the recent Association of Natural Resource Extension Professionals (ANREP) meeting in Alaska, Sheila Dunning and I presented the program to Extension colleagues from all over the country. The information was received with great enthusiasm, and Project BATS may...
form new partnerships with Extension programs in several other states as a result.

For more information on these fascinating mammals, see “Conservation of Bats in Florida” at http://edis.ifas.ufl.edu/uw291.

Research Finds Noninvasive Varieties of Invasive Ornamentals

Most people are well aware that some non-native plants are invasive in Florida. Kudzu and melaleuca are two of the most notorious for establishing themselves in state forests and natural areas, damaging and displacing native plants.

Savvy gardeners know that some non-native ornamentals are also considered invasive. For example, Chinese privet was long grown as a shrub or hedge plant in urban landscapes but now is found throughout Florida’s forested areas.

Unfortunately, other, more desirable non-native ornamentals also have been implicated as invasive. Gardeners who have these questionable plants may feel guilty or uneasy about growing these. However, the invasiveness of these non-natives was based on the wild-type selection, usually the form of the plant first used as an ornamental decades ago. Today gardeners usually grow cultivars or varieties of these invasive non-natives, some of which differ radically from their wild form.

Fortunately, a statewide team of University of Florida researchers is finding that some varieties of invasive ornamentals are sterile or produce few seeds. This team is studying invasiveness of selections, cultivars and varieties of ornamental species in south Florida (S. Wilson; Z. Deng), central Florida (Z. Deng; R. Freyre) and north Florida (me).

Nandina (Nandina domestica) is one of the invasive ornamentals that was studied. Nandina is an extremely popular landscape plant in the southeastern U.S. Introduced to the U.S. before 1804, the wild type of the species has since escaped cultivation in nine states including Florida. Currently the wild type is not widely grown, but dwarf cultivars are primarily grown by nurseries and planted by landscapers and gardeners. Our research found wide variation in growth and fruiting among nandina cultivars and regions of Florida, and several are virtually fruitless in parts or all of Florida. This research validates the importance of research to assess cultivars of ornamentals for invasiveness and also indicates ornamentals should be trialed in various regions to assess invasiveness in each region.

Nandina cultivar 'Gulf Stream' undergoing research trials

Photo Credits: Gary W. Knox, NFREC

Our research found nandina cultivars 'Firepower', 'Gulf Stream' and 'Harbour Dwarf' are virtually noninvasive and can be grown safely throughout Florida, though gardeners should watch for occasional escaped seedlings. Additionally, Harbor Belle™ nandina may be grown safely in south Florida. Our previous research verified that the species and all varieties of Japanese silvergrass (Miscanthus sinensis) and butterflybush (Buddleja lindleyana and B. officinalis) are not invasive in Florida. Gardeners can safely grow these species and varieties without risk of unleashing more invasive plants.
into natural areas.

Be on the lookout for other noninvasive cultivars! Our research also found some varieties of fountaingrass (*Pennisetum* spp.), Mexican petunia (*Ruellia tweediana*) and porterweed (*Stachytarpheta* spp.) are noninvasive, and these results are undergoing an evaluation process to be validated as such by UF/IFAS. We are continuing this research with other non-native ornamental species and varieties.

--Article also released in the July 19, 2010 issue of the NFREC Newsletter (http://nfrec.ifas.ufl.edu)

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**Upcoming Events**

**Florida Small Farms Outreach:** July 20 & Aug 3, 17, & 24 (Tuesdays 6pm to 8pm). [http://escambia.ifas.ufl.edu/agriculture/Small_Farms_Outreach_2010.pdf](http://escambia.ifas.ufl.edu/agriculture/Small_Farms_Outreach_2010.pdf). May be accessed at county extension offices statewide; contact the Agriculture agent at your local office.

**Bay County**

**GI-BMP Training (Green Industries Professionals Best Management Practices):** Friday, August 20, 2010. Contact Ken Rudisill at (850) 784-6105 or krru@ufl.edu.

**Escambia County**

**Hunter Safety Training 2010:** [http://escambia.ifas.ufl.edu/agriculture/Hunter_Safety_2010.pdf](http://escambia.ifas.ufl.edu/agriculture/Hunter_Safety_2010.pdf). Langley Bell 4-H Center September 14, 16, 21, & 23rd (Tuesdays & Thursdays) 6-9 pm. Shooting Range September 25th Saturday. Contact Libbie Johnson, libbiej@ufl.edu or 850-475-5230.

**Florida Certified Pile Burner Training:** Wednesday, August 18, 2010, 8:00am - 4:30pm. Cost: $50.00, Contact Libbie Johnson at 850-475-5230. [http://escambia.ifas.ufl.edu/agriculture/Pile_Burning_Workshop_2010.pdf](http://escambia.ifas.ufl.edu/agriculture/Pile_Burning_Workshop_2010.pdf).

**GI-BMP Training (Green Industries Professionals Best Management Practices):** Friday, September 10, 2010. Contact Beth Bolles at 475-5230 or bbolles@ufl.edu.

**Santa Rosa County**


**Panhandle Butterfly House:** Open to the public Thursday, Friday and Saturday from 10am to 3pm. Visit Navarre Park on Hwy98 and enjoy a kid’s splash pad, picnic facilities, playgrounds and the award-winning Panhandle Butterfly House. For more information visit [http://www.panhandlebutterflyhouse.org](http://www.panhandlebutterflyhouse.org).
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