

# The COMPOST Pile

*...for discerning weeders*

A Newsletter of the Okaloosa County Master Gardeners Association — March 2010

**MG Meeting March 3, 2010 at Destin City Hall, 9:00 a.m.**

## What on Earth is Soil?

Lynn Fabian

The epa.gov web site, gives the following descriptions...

- Soil makes up the outermost layer of our planet.
- Topsoil is the most productive soil layer.
- Soil has varying amounts of organic matter (living and dead organisms), minerals, and nutrients.
- Five tons of topsoil spread over an acre is only as thick as a dime.
- Natural processes can take more than 500 years to form one inch of topsoil.
- Soil scientists have identified over 70,000 kinds of soil in the United States.
- Soil is formed from rocks and decaying plants and animals.
- An average soil sample is 45 percent minerals, 25 percent water, 25 percent air, and five percent organic matter.
- Different-sized mineral particles, such as sand, silt, and clay, give soil its texture.
- Fungi and bacteria help break down organic matter in the soil.
- Plant roots and lichens break up rocks to become part of new soil.
- Roots loosen the soil, allowing oxygen to penetrate. This benefits animals living in the soil.
- Roots hold soil together and help prevent erosion.
- Five to 10 tons of animal life can live in an acre of soil.
- Earthworms digest organic matter, recycle nutrients, and make the surface soil richer.

- Mice take seeds and other plant materials into underground burrows, where this material eventually decays and becomes part of the soil.
- Mice, moles, and shrews dig burrows that help aerate the soil.

That covers almost all the bases; but is soil the same everywhere?

Florida is in the region known as the Southeastern U.S. Coastal Plain. That Plain runs from the southern Appalachian Mountains and ends at the coastline.<sup>1</sup> It extends from east Texas, across Florida and north into Virginia. The red line is a rough approximation of the area.



<sup>1</sup> Priceless Florida: Natural Ecosystems and Native Species, 2004, p. 24

Characteristics defining the region's soil are (from bottom up) 1) marine sediments; 2) a deep layer of *clastic* sediments (clay, silt, sand and gravel); and 3) a layer of organic soil on top or mixed in with surface sediments. Of course, over some 65 million years, there has been a fair amount of mixing. Today the organic layer is practically non-existent on high, dry sand hills but is quite thick in the wetlands, ponds and seepage slopes. Priceless

Florida acknowledges some 300 different types of soil in the state.

Of all the layers, it is that all-important top layer that supports life as we know it.

Tread softly! A signpost in one garden reads:  
Your feet are killing me!

## Soil Types

<http://urbanext.illinois.edu/gpe/case2/c2m1.html>

People describe soil types in all kinds of ways such as heavy, light, sandy, clay, loam, poor or good. Soil scientists describe soil types by how much sand, silt and clay are present. This is called texture. It is possible to change the texture by adding different things. Changing texture can help in providing the right conditions needed for plant growth.

Sand is the largest particle in the soil. When you rub it, it feels rough. This is because it has sharp edges. Sand doesn't hold many nutrients.

Silt is a soil particle whose size is between sand and clay. Silt feels smooth and powdery. When wet it feels smooth but not sticky.

Clay is the smallest of particles. Clay is smooth when dry and sticky when wet. Soils high in clay content are called heavy soils. Clay also can hold a lot of nutrients, but doesn't let air and water through it well.

If a particle  
of sand were  
the size of a



basketball,

then silt would  
be the size  
of a



baseball,

and clay  
would be the  
size of a



golf ball.

Particle size has a lot to do with a soil's drainage and nutrient holding capacity. To better understand how big these three soil particles are, think of them like this. If a particle of sand were the size of a basketball, then silt would be the size of a baseball, and clay would be the size of a golf ball. Line them all up, and you can see how these particles compare in size.

(This article was probably prepared for the kids but I like the particle size analogy. Makes it easier to imagine. —Lynn)

### The Best Soil

"The question is sometimes asked, "What is the best soil?" The answer can only properly be given by another question, "Best for what?" It is generally thought that (with all other factors being equal) soils having sandy loam, or loam-textured surface soils, are better suited for a wider variety of crops, and will produce higher yields more economically than most other soils in Florida. Such soils are more common in the northwest portion of the state."

<http://edis.ifas.ufl.edu/ss169>

Funny...I don't think that is what is in my backyard!

“...soils having sandy loam, or loam-textured surface soils, are better suited for a wider variety of crops, and will produce higher yields more economically than most other soils in Florida.”

Assuming this is not in your backyard, what can you do about it? What should be added to the soil to get you into the realm of “best soil”?

## Organic Matter

In general, organic matter is the remains of plants and animals. The organics you apply to the soil are most often in the form of bird and animal manures, plant (green) manures, cover crops, compost, sea products, and mixed organic fertilizer.

## Benefits of added organic matter

- Improves tilth, condition, and structure of soil, providing better aeration and temperatures.
- Supports living soil-organisms.
- Improves ability of soil to hold water and nutrients.
- Helps dissolve mineral form of nutrients.
- Buffers soil from chemical imbalances.
- Maintains a steady supply of plant nutrients.
- May contribute some degree of biological control of certain soil pests.
- Helps recycle organic wastes, thus keeping them out of landfills and waterways.
- Cheap energy source, replacing manufactured nitrogen. <http://edis.ifas.ufl.edu/mg323>

Before there was a world wide web, there was the soil food web.

Organisms that live all or part of their lives in the soil are interconnected through the soil food web (Figure 1). The food web represents the conversion of energy and nutrients from organisms on one level to organisms on another level. The levels of the food web are called trophic levels, which include primary producers, primary consumers, secondary consumers, and tertiary consumers.

Whew!! More simply put,

Everything is interconnected in the soil so that whatever is produced is consumed by some other plant or animal. The death or consumption of one component in the soil is the food for the next. It is a soil based food chain and

eventually everything is consumed to start the process over.

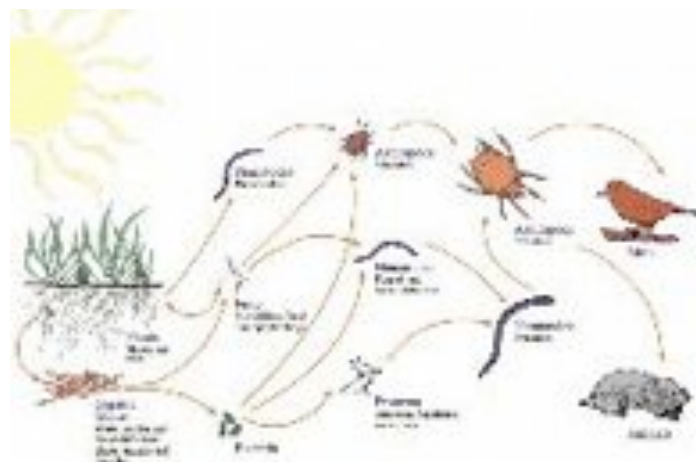


Figure 1: The soil food web

if you want the full description of the soil food web, visit Soils & Fertilizers for Master Gardeners: Organisms in the Soil at <http://edis.ifas.ufl.edu/mg452#FIGURE%201>

## The Natural Fertility of Florida Soils

“The natural fertility of Florida's soils is low due to their sandy nature and low organic matter content, but the small amount (often less than 2%) of organic matter in Florida's mineral soils is responsible for most of the soil fertility (i.e., 95% of the nutrient holding capacity is due to the <2% of soil organic matter present in Florida's sandy soils). As a result, Florida soils usually cannot provide a sufficient amount of nutrients to growing plants. Consequently, homeowners may have to apply fertilizers to the soil in order to correct or prevent nutrient deficiencies. However, fertilizers must be used with care to prevent pollution of water resources. The only notable exception is the organic soils, which contain thick layers of organic matter and are extremely fertile when drained.” <http://edis.ifas.ufl.edu/mg450>

Just as a reminder, before you toss out fertilizer on the soil, here's how to take a soil sample.

Collect a composite soil sample by removing sub samples from 10 to 15 small holes dug throughout the sample area (e.g. the front yard, vegetable garden, flowerbed, etc). To obtain the sub-samples, carefully pull back mulch, grass or ground covers to expose bare soil. With a hand trowel or shovel, dig small holes 6 inches deep

and then remove a 1-inch thick by 6-inch deep slice of soil. Combine and mix the sub-samples in a clean plastic bucket. Place about one pint of this mixture in a plastic bag or small throwaway plastic container. Close the container. If the soil is wet, let it air dry by spreading it out on newspaper before putting it in the container. Make sure to attach a slip of paper with your name, phone number and where the sample was taken (e.g. lawn, vegetable garden, flowerbed, etc.).

Have the soil sample tested at U of F and then you will know which components you need to add to your yard to produce "the best soil".

"An agricultural adage says the tiny animals that live below the surface of a healthy pasture weigh more than the cows grazing above it. It is said that two handfuls of healthy soil contain more living organisms than there are people on the earth. What these beings are and what they can be doing is difficult to comprehend but it helps to realize that even though they are many, they work as one." Carol Williams, *Bringing a Garden to Life*, 1998

## Coming Events

### March Board Meeting Location TBD Mar 17, 2010

- Mar 3: MG Meeting, Destin City Hall, 4200 Indian Bayou Trail, Destin
- Mar 6: Bird Walk, Valp Area, Choctawhatchee Audubon Society
- Mar 24: Plant Clinic, 10a to 1p, MG volunteers needed
- Mar 27: Fieldtrip-Spring Bird Banding, Ft. Morgan, AL, Choctawhatchee Audubon Society
- March 31: Nursery Workday, 10:00 a.m.
- May 18: Scouting Class, Nursery

(E-mail events to [Editor/Compost Pile](#))

In the February *Compost Pile* there was an incorrect date for a workshop at the Extension Annex. I sincerely apologize for any inconvenience it may have caused.

## *The Sibley Guide to Trees*

Written and Illustrated by David Allen Sibley



Some of you may recognize the name David Allen Sibley, a well-known author of bird books. Birdwatching may have led to a deep affinity for the trees in which those birds live, for he has written and illustrated an amazing book on the subject. Published in 2009, The Sibley Guide to Trees is a collection of illustrations and descriptions of over 600 tree species, both

native to the U.S. and introduced. Along with the technical information are essays showing a great concern for the preservation of the environment and natural habitat.

The format of the book makes it easy to use. Trees are grouped taxonomically, which means according to their presumed natural relationships. Simply put, for example, all the oaks are together! There is a general information section about each tree family group, preceding a detailed description of individual trees. Illustrations show not only tree silhouette with twig and leaf shapes, but also (if applicable) needles, cones, flowers and fruit. Seasonal leaf coloration and bark samples at different ages are included as well.

Maps showing the range of each tree accompany the illustrations and descriptions. The Sibley Guide to Trees is a wealth of information, an excellent resource for any tree lover's collection. The good news is that it is no coffee table book, it's small enough to take along next time you go for a hike in the woods.

Thanks go out to Master Gardener Ed Smith who shared this book for review. It is not currently available in the Okaloosa Library system, nor on the Extension bookshelves, but should be available at your local bookstore.

ISBN 978-0-375-41519-7

Like bird books, you can never have too many plant ID books on your shelf...well, almost never.

If you have a book you would like Klare to review (or you would like to review), please contact me or Klare. Thanks. —Lynn

## President's Message

Mike Crow

Well, Spring is on the horizon and with it comes many phone calls and inquiries. We have many opportunities to assist the newcomers to our area and the same ol' questions from our longtime residents. Our first plant clinic of the year is on 24 March and this is only one way we can educate the community.

Another way that is much needed comes with our office telecommunication. Coverage is needed Monday through Friday. Our more vacant days seem to be Wednesdays and Fridays. How about manning our office areas with a two-person approach? This enables the "two heads are better than one" concept and makes the day enjoyable with friendship and conversation. What better way to pass the time and get to know each other better. Many are already utilizing this adventure. Many can still benefit.

I, being from Louisiana, am excited to be married to a full time translator. She lets me know sometimes that I need to get out of the house more often. Must be those many years in the military being away from her and then all at once retirement arrives and so much time together.

There are only so many honey-dos to get done before I am "around" her all the time. So if you want to keep an old retired guy company and at the same time give his wife some time to herself, think about joining me in the office answering questions from our inquiring residents on Monday, Tuesday, Wednesday, Thursday or Friday.

Hold on...Yes, Dear, I am planning on being at the Extension Office this week...whew! Please help my wife retain her sanity. Join me or another fellow Master Gardener in the office communicating with our residents about their plant challenges. Let Dorothy know your availability. She has mine.

*J'aime ma femme. Fera ne vous m'aidez pas s'il vous plaît survit cette chose cette retraite appelée. Merci! Oui cher je tiens les téléphones cette semaine. Amuser le tableau.*

Ask me to explain this encrypted call for help at the meeting in Destin. Hope to see you there. ☺

## Last Word

Lynn Fabian

### Last Word

I have now committed seeds to cold, damp earth with the full expectation that what I planted will be miraculously transformed into plants that we will eventually eat. Gardeners have to be the most hopeful people on earth. I'll bet most of us will also clap when it seems the only way to save Tinkerbelle.

Over the years, I have gardened in many types of soil. In California it was adobe clay; in the Midwest it was remnants of lawn over construction leftovers; in North Alabama it was a rock base with precious little soil above until we built raised beds; and in Florida it is sand. I had the most success in California and North Alabama. The jury is still out on Florida, but I don't think it is because of the soil. Ed says that I don't grow veggies, I grow soil.

That is truer than he knew at the time. Compost was the basis for what success that we had with our gardens.

I find that a real gardener is not a man  
who cultivates flowers;  
he is a man who cultivates the soil.  
He is a creature who digs  
himself into the earth and leaves the  
sight of what is on it to us  
gaping good-for-nothings. He lives  
buried in the ground.  
He builds his monument in a heap of compost.  
If he came into the  
Garden of Eden, he would sniff excitedly and say:  
"Good Lord, what humus!"

Karel Capek, *The Gardener's Year*, 1931

As Master Gardeners we learn early on to call it soil rather than dirt. It is a bit like saying a weed is a plant out of place. Dirt is just soil that found its way under the fingernails or to the bottom of the shoes to be tracked in on the white carpet.

Recently we were with a MG of long standing who was clearing out some long forgotten buckets and barrels. These must have predated MG training because one of those buckets was carefully labeled "DIRT". Soil in disguise.

Congratulations to Nita Brewer and her team who put together the bones of the display we will use during the coming year.

It had a good first showing at the Eco-Nomic Expo at the Fairgrounds on Saturday and I'm sure will be put to good use in the months to come.

I did not hear a final count on our contacts at the Expo but I know that will be reported at the monthly meeting.

Don't forget to drive to Destin on Wednesday. Lots of good places to eat out there.

See you Wednesday. —Lynn

## About Us

*The Compost Pile* is a publication of the Okaloosa County Master Gardeners Association.



Okaloosa County Master Gardeners Association is a volunteer organization sponsored by Okaloosa County Extension and the University of Florida IFAS.



The Foundation for the Gator Nation...an equal opportunity institution.



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