

Fall(ing) Leaves

(and Other Tree “Droppings”)

How to Use Them

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Fall leaves are so incredibly beautiful.....



Till they're not.....



Aaaarghhh!!!! What do I do now?? (I want to do the “right” thing.)



Leave the leaves!!

to provide habitat....

to protect plants....

to nourish the soil...

Caterpillars, such as **woolly worms**, in the insect form of hibernation.

Several species of **butterflies**, as caterpillars, as a cocoon (moth) or chrysalis (butterfly).

Bumble bee queens may also overwinter in piles of leaves.

Salamanders and other **small wildlife** will search out leaves for overwintering cover.

Lightning bugs overwinter and breed.

Songbirds, such as Carolina wrens and eastern towhees, will pick through the leaves hunting for prey.

Did You Leave the Leaves Last Fall?

Did more fireflies and lovely creatures show up?

These Beautiful Creatures
Evolved For Millions Of Years
to Live Among the Fallen Leaves of Autumn

#LeaveTheLeaves

pollinator friendly yards on facebook



Luna Moth



Eastern Towhee



Lightning
Bugs



Brown Thrasher
State Bird of Georgia



Mourning Cloak Butterfly



Northern Flicker

OK! I want lightning bugs and other creatures..... But I don't want the leaves to smother my lawn!

Only Have a Few Leaves?

Less than 50% of lawn covered
and grass is still growing?

Let them be!

Chop them up when mowing and
leave on the grass for nutrients.



Lots of Leaves and/or Turf is Dormant?

Time to get out the rake...

Raking is a GREAT core workout!

Raking helps de-thatch the turf.

The average Dunwoody front yard takes less than an hour to rake and burns 350-450 calories... ditto for the back yard.

TIP: Rake *with* the wind....



But if you can't do that...

Use that ultra-polluting
2-cycle engine blower
and annoy your
neighbors.*

(conventionally designed two-stroke
engines produce high levels of
hydrocarbons in exhaust emissions --
5,500 parts per million (ppm), compared
which 850 ppm from four-stroke engines)
and 80 to 90 decibels of sound.

*Personal opinion of presenter...



Enjoy the Leaves!!



And then USE them...



Soil is made up of:

- Minerals
 - sand (drainage)
 - silt (holds ltd nutrients and water)
 - Clay (holds lots of water, ltd nutrients)
- Air
- Water
- Organic Matter (holds water, helps soil stick together)
 - Decaying flora/fauna
 - Living organism waste
 - Major food source for microorganisms in soil
- Living organisms (500,000 to 1 B per teaspoon of good soil!)



For Organic Gardening - Microorganisms Rule!

Microfauna and microflora - really, really tiny creatures that play the essential role of converting plant and animal debris into plant-accessible nutrients and making the nutrients and water available to plants.

MICROFAUNA include nematodes and protozoa, which feed on the exudates emitted by plant roots (sugars and starches - “cakes and cookies”).

MICROFLORA include bacteria, fungi and viruses, all of which help break down rocks and minerals, break down organic matter.

Who Eats Whom?

Microorganisms and their waste are consumed by MESOFAUNA - arthropods, collembola and enchytraeids - tiny scavengers eating bacteria, fungi and algae

Mesofauna and their waste are then consumed by MACROFAUNA - earthworms, millipedes, ants, slugs, moles, rabbits, gophers, badgers, birds, etc.

All this activity affects soil structure with burrows, tunnels which increases the porosity of the soil and the rate of chemical exchanges. The process draws excreted nutrients and water to plant roots.

Plants Need Nutrients in a Plant-Usable Form

MAJOR NUTRIENTS:

Nitrogen (for growth of stems and leaves)

Phosphorus (for germination, flowering and fruit)

Potassium (for roots, disease-resistant growth)

SECONDARY NUTRIENTS:

Magnesium (chlorophyll, sugars and starches)

Sulfur (chlorophyll production, oil content)

Calcium (terminal bud and roots)

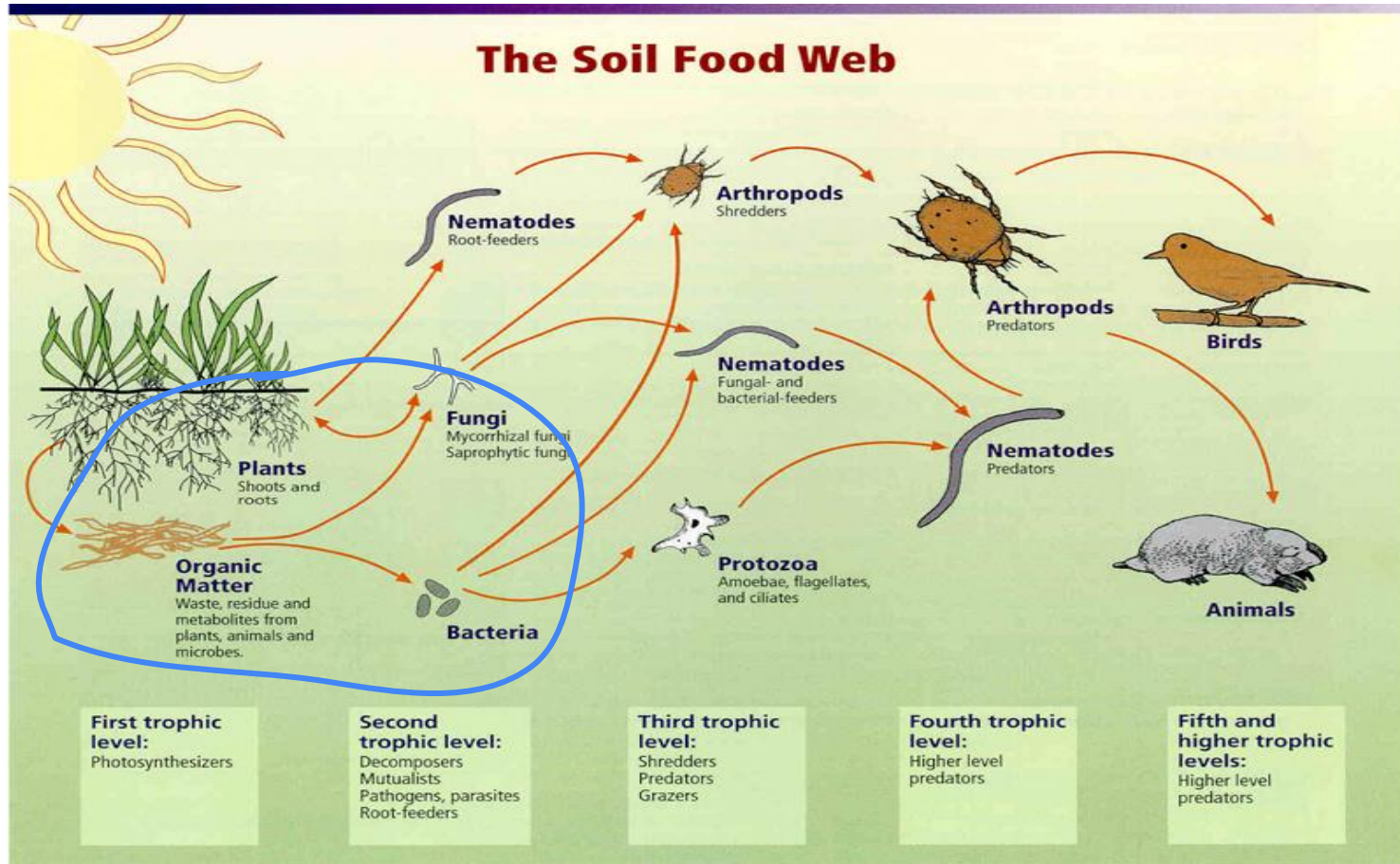
Chlorine (roots, water retention)

Boron (solid, well-formed fruit)

Zinc (more fruit)

Cooper, Iron, Manganese, Sodium, Cobalt,
Selenium, Nickel and Molybdenum

The Soil Food Web



Relationships between soil food web, plants, organic matter, and birds and mammals
 Image courtesy of USDA Natural Resources Conservation Service
http://soils.usda.gov/sqi/soil_quality/soil_biology/soil_food_web.html.

Bringing It Home to our Garden Soil

- Garden soil is ever evolving and never perfect
- As crops and flowers are harvested, the soil gradually becomes depleted of essential nutrients.
- Soil can be improved greatly by integrating good quality ORGANIC MATTER
- Organic Matter comes in 2 sizes - MULCH and COMPOST

Mulch

A layer of large pieces of organic matter (whole leaves, pine needles, wood chips, grass clippings, etc.) provides several benefits to plants and soils:

- reducing water loss by slowing down surface evaporation,
- minimizing weed competition,
- moderating temperature changes in the surface of soil,
- improving soil structure,
- retarding erosion,
- reducing negative plant interactions with maintenance ...

When laying mulch, focus your efforts in the open spaces of your beds and the areas around your plants' root systems.

Don't mound up mulch around the base of the plants. Too much moisture retention where the stems meet the soil can cause a sometimes terminal condition called crown-rot.

Two to three inches should be sufficient for most gardens.

This is NOT mulch, it's a suffocating blanket....



Compost

Mixed “GREENS” (nitrogen), “BROWNS” (carbon), water and air consumed and excreted by naturally occurring microorganisms who are, in turn, consumed by larger and larger organisms.

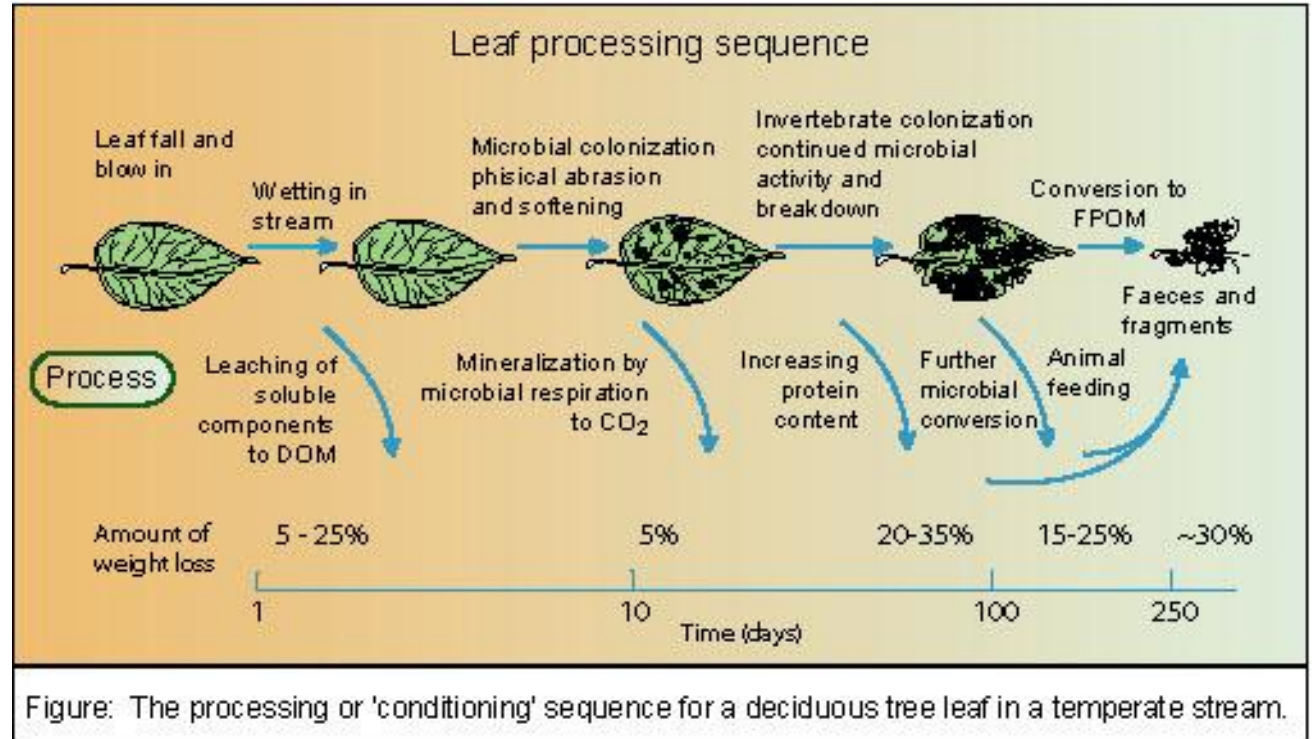
Incorporate the decayed compost into soil to jumpstart / increase the natural soil-food web cycle.

Decaying mulch creates excellent compost.

Leaf Decomposition

DOM = dissolved
organic matter

FPOM = fine
particulate organic
matter



Leaf Decomposition

A fallen leaf is broken down by fungi, bacteria and invertebrates such as insects that shred and consume leaf material. These insects and their wastes are, in turn, eaten by other insects as well as birds and fish. The leaf's carbon and nitrogen are assimilated and released at various stages of the process.

Whole leaves can take about six months to decompose, so it's perfect for our winter to pass and by the time you're gardening in the spring they should be ready (for nutrient rich soil).

Magnolia leaves can take 12 months to decompose.

Moisture / rain aids in this process.

Whole leaves vs chopped up leaves

Whole leaves

- Decay more slowly
- Cover much larger areas
- Provide natural habitat

Chopped leaves

- Decay more quickly
- Cover a much smaller area
- May contain chopped creatures.....
- Look tidier

Prefer
Chopped
Leaves??

Suck up leaves with
mower or leaf
vacuum



Leaf Shredders

- Electric or gas-powered
- Loud
- Reduces leaf volume to 1/11 original volume
- \$150 - \$2,200+



How Much Mulch?

Whole Leaves

1 cubic yard whole leaves =

27 cubic feet =

108 sq ft of mulch spread 3" deep

Chopped Leaves

1 cubic yard of WHOLE leaves, chopped up =

2.5 cubic feet of chopped leaves =

10 sq ft of mulch spread 3" deep



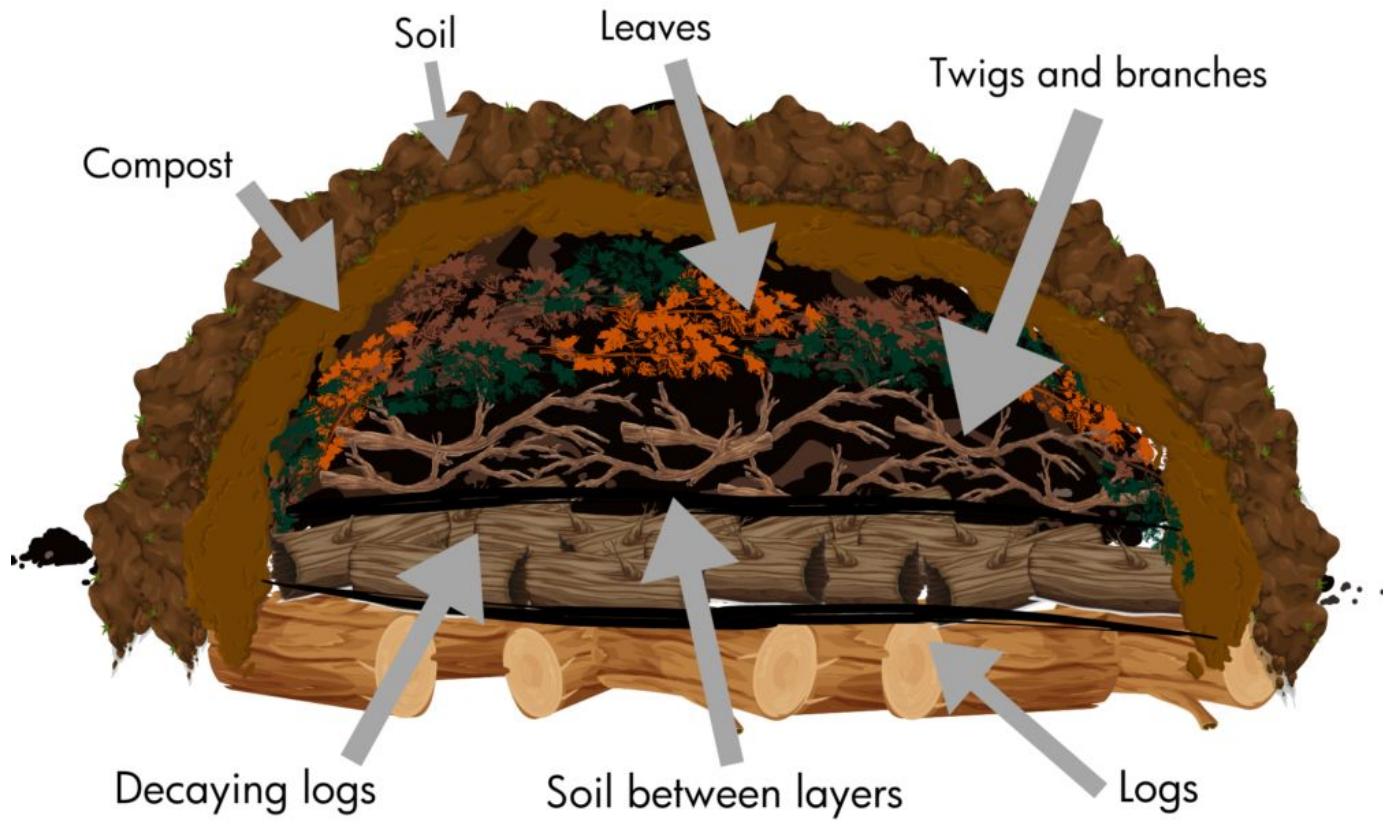
“Other” Tree Droppings.....Twigs, Branches & Limbs....

Water runoff control

“Hug” shaped curved berms of tree branches, tree trimmings, twigs covered with chips and leaves to

- Slow down the water
- Spreading the water over a larger area
- Allowing the water to seep slowly into the soil





Hügelkultur

Hugelkultur

in use at the DCGO orchard



And the most beloved tree
“dropping” of all.....

Sweet Gum balls!!!!!!

make excellent deterrents for all
pot-digging pests such as chipmunks,
squirrels, rabbits and cats...

Interlock them to form a tight mat
around your potted plants.



Get Crafty with Leaves



Things NOT to do with Fallen Leaves, Twigs, etc.



Because.....

**HMMM...WHAT'S BEING
SENT
AWAY TODAY?**



**MOURNING
CLOAK BUTTERFLY**



**POLYPHEMUS
MOTH
COCOON**



**GLOW WORM
OR
BABY FIREFLY**



**LUNA MOTH
COCOON**



#LEAVETHELEAVES

POLLINATOR FRIENDLY YARDS ON FACEBOOK