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

# THE WATERDROP

## Biodiversity

Is it alive? You spy it moving awkwardly up, then across, then back up again. It looks like it's ready for battle. It's back is like a plate of armor. It is sharply pointed and resembles rugged, mountain peaks with just a hint of snow. You hover just above it, barely breathing so as not to give yourself away. You want to get closer, but you wonder if it could hurt you. You were warned about these things so you play it safe and keep your distance. Suddenly it leaps into the air and sails away on a waft.

You had no idea there were such peculiar things out here. You stand perfectly still straining your ears and eyes. You hear rustling above you, squirrels. You hear buzzing to your left, bees. Behind you is a soft cooing, mourning dove. In front of you is a pool of colors with creatures flittering from one plant to an-

other, meadow with butterflies. There are many creatures that share the same

**Each moment of the year has its own beauty...a picture which was never before and shall never be seen again. Ralph Waldo Emerson**

neighborhood as you. There are several squirrels scampering around the yard. There's a rabbit hopping in and out of a neighbor's wood pile. Across the sidewalk is a chipmunk scurrying into a hole under a house. Above you the sky is filled with a flock of birds. And then you remember the spider. What kind of spider was that? It looked like a piece of walking bark!

Suddenly you notice that there are lots of different types of trees. Some have soft fruit (apples, pears and cherries) and some have hard fruit



(walnuts, hickory nuts and acorns). Wow, there's a lot of food here for wildlife.

You realize your home is filled with wildlife.

This is biodiversity. It is crucial to a healthy environment (your home). You may not notice or think we need all these creatures, but we do. Each has an important job. It's important that you respect their job and let them do it. It takes many jobs working together to keep our home (earth) healthy. Just like it takes many people and wildlife to make sure you have food to eat.

Take pizza sauce for example. We have to have soil to grow the tomato that makes the sauce for your pizza. Soil is needed to provide a growing medium.

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## Inquiring Minds...



### Earth Facts:

- \* Sea turtles must mature for nearly 10 years before returning to nesting sites.
- \* The tallest mountains are actually located beneath the oceans.
- \* Talc is the softest mineral and is used to make talcum powder.



### Amazing Animals and Plants

#### Venus Flytrap

There are many different types of carnivorous plants in the world. The Venus flytrap lives in bogs in the southeastern United States. The leaf "jaws" of the Venus flytrap snap shut when an insect brushes against the small hairs in the jaws. When an insect is captured, it is slowly digested and absorbed by the leaf.



#### Aspen Colony

The world's heaviest plant is a trembling aspen tree colony. "Pando" in the mountains of Utah. The tree colony shares the same massive root system, which covers approximately 107 acres. The original tree started from a seed approximately 80,000 years ago. More stems have sprouted from the horizontal roots spreading just under the soil surface. The colony has roughly 47,000 stems.



# Endangered Friends

## Bats, Demystified

In China, the bat symbolizes five sources of pleasure sought by man; health, wealth, long life, good luck and tranquility. The Chinese understand the importance of bats! Bats, mammals that give birth to live young (they do not lay eggs in your hair), eat about 1/3 of their weight each night. That equals about 3,000 insects per bat per

night. Wow, bats are a natural insecticide. Go bats!

Bats also have good eyesight, but they have a superb echolocation system. In fact their echolocation ability is so good, they can avoid objects as thin as a piece of thread and capture tiny flying insects in complete darkness.

Bats usually capture food by scooping it



Indiana bat

into their tail and then reach down and take it into their mouths. This causes bats to fly awkwardly.

We depend on bats. What a cool mammal.



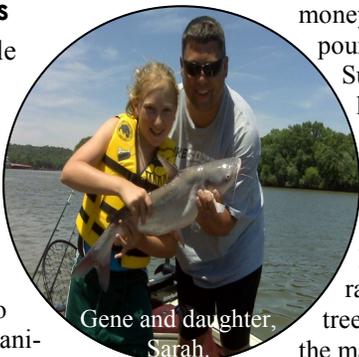
# The Great Outdoors

## Mr. Whiskers

By Gene Zirkle

Do you like to fish? How about landing a fish that is comparable in weight to a small child?

Do you want to tangle with an animal that commonly reaches 3 feet in length? If you've answered yes to any of those questions, it's time to hunt for real fish. I mean fish that will give you a run for your



Gene and daughter, Sarah.

money and provide you with some heart pounding fun – catfishing!

Summer is the season to start your hunt for catfish or Mr. Whiskers. As the water warms, catfish are driven to reproduce. The large spawning fish begin to move into feeder rivers and streams to mate. Look for areas with cover like rip-rap, large root wads from toppled trees, or bottom depressions away from the main river flow. Males will not feed for 5-10 days after mating while they guard the nest and tend the young. Patience is critical.

Productive fishing is best at dusk through

the early evening hours using cut bait. Top bait on the Cumberland River is Skipjack Herring. These large baitfish can be found in large concentrations at river mouths and dams. Cut your bait in 1-2" chunks and use 8/0 or 10/0 circle hooks. I highly recommend medium-heavy or heavy rods with at least 40 pound test and 80-100 pound leader. During periods of low flow use a 3 ounce egg sinker and cast just upstream of your target. Let your line sit for 10-15 minutes and reposition your bait if you get no response. Remember patience is important.

While waiting for Mr. Whiskers sit back and enjoy nature!



# Going Local

## The Bounty of Summer Without the Hard Work

By Peggy Luensmann

If you hesitate to start your own garden because the thought of all that work makes you sweat, fresh produce and flowers are still at your fingertips! A wide selection of fresh-cut flowers and locally grown produce are available all summer long at your local farmers' market. Some market vendors go beyond the traditional selection of produce by offering baked goods, honey, jam, crafts, artwork, clothing, and wine. To make things even easier, some vendors will accept debit or credit cards in addition to cash so you can always get everything you need. In Clarksville, the Downtown Market is open every Saturday through October from 8 am to 1 pm in the Public Square

downtown; In Hopkinsville, the Downtown Farmers' Market is open every Wednesday and Saturday through October from 7 am to 1 pm at the corner of 9<sup>th</sup> Street and Main Street. Hopkinsville also hosts a farmers' market in the parking lot of Bradford Square mall on Tuesdays, Thursdays, and Saturdays through October from 6 am to 1 pm. For those around the Cadiz area, check out the farmers' market hosted in Renaissance Square, downtown Cadiz, every Wednesday and Saturday from 7 am to 12 pm through October.

If you prefer to harvest the bounty of summer yourself, you can stock up on your favorite fruits and veggies at a local pick-your-own farm. Many local farmers allow you to pick fresh berries, apples, corn, tomatoes, flowers, and more for less than they would cost in the store. Buying

in bulk from a pick-your-own farm also gives you the option of freezing or canning extras for later. Check out [www.pickyourown.org](http://www.pickyourown.org) for a list of pick-your-own farms in your area.

<http://www.cityofclarksville.com/parks&rec/DowntownMarket.php>

<http://www.kyagr.com/marketing/farmmarket/directory.htm>

<http://www.pickyourown.org>



# Tree Talk

## Urban Forest Plan Improves Garrison Trees

By Bruce Franklin

The Forestry Section of the Environmental Division has completed an Urban Forest Management Plan that will help with the safety, maintenance, and continued presence of trees in Fort Campbell's urban forest. The urban forest is made up of trees, shrubs and ground covers planted around buildings, homes, parks and streets. Three main programs identified in the plan are: hazard tree risk management, tree maintenance, and planting. The plan helps identify goals and standards for tree related work such as pruning, planting, and protection of trees during construction. Data for the plan was collected during a tree inventory that was completed in 2006. Information collected during the inventory was evaluated on a scale of excellent to dead. Collected information included species, placement, condition and management needs. Management needs included the removal of unsafe trees and branches, routine pruning and potential planting sites. It also helped recognize problem insects and mechanical damage present on trees. Inventory information helps in planning yearly maintenance and future budget requirements as well as determine the landscape value of the urban forest. The value of Fort Campbell's urban forest tree is approximately 58 million dollars. The plan also helps the post continue to meet the requirements for the Tree City, USA award presented by the National Arbor Day foundation in partnership with the US Forest Service. 🌱

To see the Urban Forest Management plan log on to the forestry page of the Environmental Division web site at <http://www.campbell.army.mil/envdiv/envdivdev/default.asp>



Diversity is key to a healthy planet. It is key to your health. Habitat diversity is key to plant and animal diversity. The opposite of diversity is uniformity or identicalness. We simply wouldn't be without diversity.

# Chirp Notes



## Hummingbird Feeders

If you've ever watched a Ruby-throated hummingbird zip around your yard, then you know they are the turbo-charged birds of the avian world! With wing beats of 53 beats per second and an attitude to face a bird 10 times its size these birds need a lot of energy. Hummingbirds fuel their high metabolism primarily by drinking nectar and sugar water, although they do eat small insects as well. One way to help provide these birds with some extra energy is to hang a feeder up near some flowers or near a window (provided the windows are screened or have shades to prevent hummers from striking the glass).

The recipe for hummingbird feeders is one part sugar to four parts of water. It's very important to stick to this formula precisely as it imitates the average sugar content of flowers. Honey must be avoided as this spoils rapidly and may kill hummingbirds. It is not necessary to add red dye to the mixture as most feeders contain some red on them. Feeders need to be cleaned on a regular basis, but do not use soap; hot water and a scrubbing brush are adequate enough to clean it.

Hummingbird feeders can be found in bird shops, garden centers, hardware stores, or online. Feeders can be maintained late into the fall as this does not interfere with their migration (contrary to some reports). Some people even leave feeders up during the winter time in order to attract the rare western hummers that migrate to the southeast for the winter. So even though we're getting into the late part of summer it's not too late to put up a hummingbird feeder. You'll be giving them a boost and gaining some cheap entertainment!

Daniel



## Earth Facts

- ❖ Prairie Chickens began courtship rituals in predawn hours of late winter on booming grounds. They stomp their feet, and inflate two orange air sacs beneath their necks, emitting a "boom" sound that can be heard up to a mile away.
- ❖ An average salmon will deposit approximately 5,000 eggs. Many of the fingerlings will not survive to return to spawn.
- ❖ A wild fig tree in South Africa has roots reaching 400 feet deep.
- ❖ Rainforests regulate the world's temperature and weather patterns.



Background photo by Dawn York, Noah's Spring Branch, Fort Campbell, KY 2009

# Fresh Air

## Do Your Share for Cleaner Air

By Beth Moore

Have you ever heard the saying "out of sight, out of mind?" That could easily be the attitude we adopt regarding the air we breathe.

Since we cannot see it, we do not think about the impact our actions have on it. In 2005 Christian and Montgomery counties, to include Fort Campbell, were designated as ozone maintenance areas. Basically this means that we barely met federal standards, and now we must adopt new pollution controls.

At this point you may be saying "aren't we trying to save ozone?" There are two types of ozone. The ozone in the upper atmosphere is the "good" ozone. It protects us from the sun's ultraviolet rays.

Ground level ozone is the "bad ozone. It is the ozone that produces smog and can be dangerous to children, the elderly and people with respiratory illnesses.

Federal standards have been set up to protect the public from exposure to unhealthy levels of ground level ozone. As part of these standards, each day; the next day's air quality index is forecasted. You have, probably heard this during your local weather or the Weather Channel's "local on the 8s". The forecast will indicate ozone level with a color-coded system: green -- good; yellow -- moderate; orange-- unhealthy for sensitive groups; and red unhealthy. The forecast is made depending n sunlight, temperature, precipitation, wind speed and wind direction.

When an orange or red day is forecasted,

the Directorate of Public Works Environmental Division, Air Quality Program, has set up different avenues to inform the Fort Campbell community.

The alert will be added to the running banner on the Fort Campbell Web as well as on MWR's signs. An e-mail alert will also be sent to the school vice principals in case there are summer programs at their schools.

The following chart gives you more information about ozone and what actions you can take to help reduce the ground level ozone. You can also access this information on our Web site at [www.campbell.army.mil/envdiv/AirQualityMenu.htm](http://www.campbell.army.mil/envdiv/AirQualityMenu.htm).

|  <b>OZONE ACTION DAYS</b><br>Do Your Share For Cleaner Air<br><i>Air Quality Forecast and Action Guide</i> |   |  |
|--|---|--|
| AIR QUALITY  | TYPICAL WEATHER CONDITIONS  | RECOMMENDED ACTIONS  |
| <b>RED</b><br>Unhealthy  | <b>Temp:</b> middle 90s to 100s<br><b>Wind:</b> light breeze or none<br><b>Precip:</b> none               | When air quality reaches unhealthy levels:<br>Children should reduce outdoor activities. Healthy individuals should limit strenuous or prolonged outdoor work or exercise. Individuals with respiratory ailments, such as emphysema, asthma, or chronic bronchitis should limit their outdoor activities. If breathing becomes difficult, move indoors.<br>When air quality forecast to reach unhealthy levels, residents are strongly urged to:<br>Limit driving and refuel cars after dusk.<br>Avoid mowing lawns with gasoline powered mowers.<br>Put off any painting until later.<br>Don't use aerosol consumer products. |
| <b>ORANGE</b><br>Unhealthy For Sensitive Groups  | <b>Temp:</b> upper 80s to low 90s<br><b>Wind:</b> light breeze<br><b>Precip:</b> slight chance to none    | When air quality reaches levels that are unhealthy for sensitive groups, the following people should limit prolonged outdoor activities:<br>Children and adults who experience difficulty breathing outdoors.<br>Those with respiratory ailments.<br>When air quality is forecast to reach levels that are unhealthy for sensitive groups, all residents are urged to:<br>Limit driving and refuel cars after dusk.<br>Avoid using aerosol products.<br>Share a ride, use transit, or drive only their newest, best maintained vehicle.  |
| <b>YELLOW</b><br>Moderate  | <b>Temp:</b> upper 70s to mid 80s<br><b>Wind:</b> light to moderate<br><b>Precip:</b> chance to rain      | When air quality is in the moderate range, residents should:<br>Consolidate trips and errands.<br>Limit car idling when possible.<br>Conserve electricity and set air conditioners to 78°F.  |
| <b>GREEN</b><br>Good   | <b>Temp:</b> mid 70s to mid 80s<br><b>Wind:</b> moderate to heavy<br><b>Precip:</b> chance of steady rain | Throughout the ozone smog season ( <i>May through September</i> ), residents should make an extra effort to:<br>Carpool, use transit, bike, or walk when possible.<br>Keep cars and boats tuned.<br>Use environmentally safe paints and cleaning products.   |

PWBC, Environmental Division, Air Quality Program  
 (270) 798-9602  (270) 798-9598

# Mother Nature, the Master Recycler

## Fungi, curious things among us



Some mushrooms are poisonous. Do not eat a mushroom unless you can positively identify it.

- \* Mushrooms are the fruiting body of fungi like an apple is to an apple tree.
- \* Fungi are not plants as they do not rely on chlorophyll to produce food, instead many fungi have symbiotic relationships with plants...neither could live without the other.
- \* If not for fungi, many dead plants/trees would take far longer to decompose and we would run out of room.
- \* In the middle ages, the circular pattern formed by some mushrooms were called "fairy rings" because people thought "little people" made the rings of mushrooms.
- \* We use yeast, a fungi, to make bread. Yummy!



Did you know that fungi not only live symbiotically with plants but also with us. In fact, we could not live without some fungi to help us digest our food. On the flip side, fungi can be unhealthy. Ever heard of athlete's foot or ringworm? These are both fungal infections.

## Puzzling Bugs

How well do you know your macroinvertebrates?

Can you match the larvae stage to the adult stage?

Draw a line connecting the larval stage to the adult invertebrate. *Looking for the answer? Check in the next issue. :)*



Cranefly



Stonefly



Caddisfly



Mayfly



Fishfly





# Recipes

## Zucchini Bread

**Prep Time:** 10 Minutes; **Cook Time:** 1 Hour;

**Ready In:** 1 Hour 10 Minutes

**Servings:** 24

### INGREDIENTS:

- 3 cups flour
- 1 teaspoon salt
- 1 teaspoon baking soda
- 3 teaspoons ground cinnamon
- 1/4 teaspoon baking powder
- 3 eggs 2 cups sugar
- 3 teaspoons vanilla extract
- 1 cup vegetable oil

3 cups grated zucchini

1 cup chopped walnuts (optional)

### DIRECTIONS:

Preheat oven to 350 degrees F (175 degrees C). Sift together flour, salt, soda, cinnamon, baking powder. Beat eggs. Add and mix well sugar, vanilla, and oil. Add zucchini to egg mixture. Add dry ingredients, mixing well. Stir in nuts if desired. Pour into 2 ungreased loaf pans. Bake at 350 degrees F (175 degrees C) for 1 hour. Allow to cool on a cooling rack.

## Fresh Tomato Salsa

**Prep Time:** 10 Minutes; **Ready In:** 1 Hour 10 Minutes

**Servings:** 4

### INGREDIENTS:

- 3 tomatoes, chopped

1/2 cup finely diced onion

5 serrano chiles or 1 medium green bell pepper, seeded and finely chopped

1/2 cup chopped fresh cilantro

1 teaspoon salt

2 teaspoons lime juice

### DIRECTIONS:

In a medium bowl, stir together tomatoes, onion, chili peppers, cilantro, salt, and lime juice. Chill for one hour in the refrigerator before serving.

*"People from a planet without flowers would think we must be mad with joy the whole time to have such things about us."*  
Iris Murdock.



## Biodiversity Continued...

Healthy soil requires rocks, plants, water, air, worms, insects and wildlife. We need bees, ants, butterflies, bats and other wildlife to pollinate the plants. The tomato plant also needs water and sunlight to grow. The farmer is needed to plant the seeds and harvest the vegetables. Other people are needed to drive the tomatoes to the processing plant then to the warehouse and then your favorite restaurant. Many living and nonliving things are required to make pizza sauce.

You can imagine that it takes millions of living and nonliving things to make the earth a living planet. In other words, it takes biodiversity to keep our home healthy. That's why we need to be very careful with wildlife and their habitats. We don't know all the organisms on the planet and we certainly do not know all the roles they play in keeping our planet healthy.



So get out there and discover natural biodiversity every day.

Dawn



### Water use percentages in our homes

Do you have a question or comment for us? Please feel free to contact us. We'd love to hear from you.

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### Did You Know?

#### Spiny Echidna

Found in Australia, New Guinea, and Tasmania, the spiny echidna is a monotreme, or egg-laying mammal. It spends most of its time alone, burrowing in the ground and catching insects with its long sticky tongue. Echidnas grow about 18 inches long and have a simple oblong shape.



## Sleuthing Around

What's just outside your door? Treasures I tell you mate, treasures!

Are there any signs of animals? What color is the sky? Sea blue, sad grey, fire orange or perhaps a soft lavender? What does the sky feel like when it's sea blue or fire orange?

Be scientific and nature journal.

### What is nature journaling?

It is recording what you see, smell, hear or feel about the natural world. You don't have to be an author or an artist to journal. All you have to do is jot down or sketch what you notice.

It's fun and really neat to reread and look at what you wrote and/or drew a week later. You might even discover a new species! How exciting is that? It's very important to jot down as much information as you can about what you saw, heard, smelled, etc.

*Let your imagination flow and just journal.*

### Calling all Scientists...Get Zany

1. Follow an object for five minutes and write what it does, where it goes, draw what it looks and smells like. Try to write only using verbs.
2. Take a blindfolded walk with a friend. Describe what's around you.
3. Find something that peaks your interest and speak for the object. What would the object say, feel, or where would it want to be? Why is it here? Does it have a secret?
4. Imagine yourself a creature in your neighborhood. Describe your day. What would you do, where would you sleep, what would you eat, who would eat you, what do you smell and see? How would things appear if you were a snail, slug, ant, bird or squirrel?