Lake Floyd

Biological Survey Report

Lake Floyd Biological Survey Report

Get to Know Your Wild Neighbors

Dedication

The Lake Floyd Biological Survey Report is dedicated to my father, William R. Powell, Lake Floyd Club Fish and Game Committee Chairman from the early 1950's until his death in 1978. Dad was a woodsman, hunter, naturalist and environmentalist who lived all his life at Lake Floyd, and dearly loved the lake, the woods, the wildlife and all who lived here.

The Lake Floyd Bio Blitz project is dedicated to Judy Schillace who got the Bio Blitz rolling, worked, supported and encouraged this ambitious community project all year through the June 13, 14, 15 Lake Floyd Bio Blitz weekend. Judy was much beloved at Lake Floyd and is sorely missed by her many, many friends.

Lake Floyd Bio Blitz is inspired by and dedicated to Edward O. Wilson, the Pellegrino University Research Professor, Emeritus in Entomology for the Department of Organismic and Evolutionary Biology at Harvard University.

"There can be no purpose more enspiriting than to begin the age of restoration, reweaving the wondrous diversity of life that still surrounds us."

—Edward O. Wilson

Courtesy Steve Goff.

Lake Floyd Natural History

As any resident can testify, Lake Floyd is a great place to live. In a wooded valley, the Lake is one mile long, wide at the dam and curving to the left as it narrows. The Lake is 1080 feet above sea level (329.18 meters), in north central West Virginia, in the central Appalachians. Headwater streams flow from the steep hillsides into Lake Floyd. The feeder stream, Hall's Run, flows into Ten Mile Creek, on to the West Fork River, the Tygart River, the Monongahela River, the Ohio River, the Mississippi, and the Gulf of Mexico.

The oldest mountains on earth, the Appalachians date back to about 480 million years ago.

Lake Floyd's rich variety of Appalachian plants and animals spring from a pre-ice age circumpolar forest growing from North America to Eurasia. In the Appalachian forest are flowers whose distribution once was continuous from West Virginia to China and Japan, 8000 to 9000 miles away. The rhododendron, the Lady's Slipper orchid, ginseng and many other Appalachian plants are common in China today.

Courtesy Steve Goff.

Winters at Lake Floyd can be cold, the Lake is frozen anytime from a few weeks to a couple months each winter. Despite cold winters, the south and central Appalachians have the highest temperate-climate biodiversity in the world.

Courtesy Steve Goff.

The Lake Floyd Biological Survey Report

The Lake Floyd Biological Survey Report is an account of the June 13, 14, 15, 2008, Lake Floyd Bio Blitz. Members of the Lake Floyd community and a group of biologists, scientists and other experts came together to make Bio Blitz happen.

We have included planning details in this report, particularly in Section 5, the Zones System, and in Section 6, the Collecting Process, for a future Lake Floyd Bio Blitz, and as a model for other communities organizing their own nature-education project.

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1

How It Began

In late summer of 2007, Judy Schillace, Lake Floyd Club secretary, and organizer of many community events, walked through the playground to where I was sitting at the picnic table by the basketball court. Judy knew I was very interested in the Lake itself, the woods, the hillsides and the critters that lived in them. As a kid I had become somewhat famous among the adults, and definitely infamous among my pre-teen peers for organizing five Lake Floyd Turtle Derbies, 1960-1964.

“David, do you know something we could do next summer to get our young people outdoors into the woods and away from video games, computer games and television?” “Sure, we could organize a Lake Floyd Bio Blitz,” I replied. “This would be a perfect place to hold one. I don't think there has ever been one in West Virginia.” “Give me more details,” Judy responded.

I told Judy a Bio Blitz usually lasted 24 hours but we could make it longer, over a weekend. In a Bio Blitz people in a community spend the time outdoors, exploring a designated property, trying to count and record as many animals and plant species as they can during that time.

Lake Floyd would be ideal because we had the Lake itself, the lake banks, the wooded hillsides, the streams, the golf course. I told Judy I would try to recruit experts to come in to help us. She said, "This sounds great, let me take it to the Board of Directors.” The Board gave us a green light and I began to research other Bio Blitz models and to reach out to the experts.

First and foremost I wanted to ask Dr. Tom Pauley of Marshall University. Dr. Pauley is a leading expert on reptiles and amphibians of the Appalachian Mountains. In the words of Ray Semlitsch, another internationally known herpetologist, “Tom Pauley is the best field biologist I have ever known.” Dr. Pauley had been a professor at Salem College in the 1960's, and knew Lake Floyd very well. I never forgot a presentation he made there on the beach, when I was about nine or ten, bringing with him snakes and turtles, and thrilling the kids.

Eastern Box Turtle, Bio Blitz Central. Lake Floyd Zoo. Courtesy WBOY TV.

When Dr. Pauley agreed to participate, and gave me permission to use his name when asking other scientists, I knew we were on our way. Since Lake Floyd Club was a big property, 700 acres, 550 comprising the Lake and its surrounding hillsides, 150 the golf course and its hillsides, this would be an ambitious undertaking. The Lake Floyd Bio Blitz would cover the entire property and be organized under the categories ("Taxa") of Mammals, Birds, Reptiles and Amphibians, Fish, Crustaceans, Insects and Plants. Later when Harry Godwin, a USDA scientist from Beckley, came a week early to take soil samples on the golf course, we could add Microbes.

Purpose of the Lake Floyd Bio Blitz

Judy Schillace and I discussed and agreed on what we were trying to accomplish.

Top priority was a fun and entertaining event that would encourage as many people as possible, particularly children, to get outside and explore Lake Floyd over the June weekend. The Bio Blitz was not intended as a carefully controlled scientific process, since it was our first ever, we could not know how many participants, and too many variables were involved.

Second to the fun/entertainment aspect, with the outstanding experts on site we could expect some real learning about the critters, our wild neighbors, and the plants at Lake Floyd. Although we knew the

collecting process would be somewhat haphazard and "on the fly," we hoped that the data collected might be of use to the scientific community in West Virginia.

Walden Pond and Lake Floyd: A Comparison

And that very well could be true. Judy Mize and I visited Walden Pond in Concord, Massachusetts, where Henry David Thoreau recorded day-by-day observations of plants and animals all year around.

> *"All change is a miracle to contemplate, but it is a miracle which is taking place every second."*
>
> —Henry David Thoreau

> *"Each new year is a surprise to us. We find that we had virtually forgotten the note of each bird, and when we hear it again, it is remembered like a dream, reminding us of a previous state of existence …. The voice of nature is always encouraging."*
>
> —Henry David Thoreau

Although only observations, Thoreau's records have remained important to science, most recently as baseline data for climate change comparisons.

On first seeing Walden Pond, Judy and I were struck by how much it resembles Lake Floyd. Both are surrounded by Eastern forest, Walden Pond is a little bigger, at 61 acres, and round while Lake Floyd is wide at the dam and narrows as it goes up the valley. One important difference, Walden Pond is a "kettle lake," gouged out by the covering glacier, the Laurentide ice sheet, up to two miles thick, during the last ice age, until about 12,000 B.C. That's the blink of an eye in geologic time, so Walden Pond is still recovering from the destruction of its plant and animal species. The ice sheet extended south to just north of Pittsburgh in the Appalachians. The Lake Floyd valley, south of the ice sheet, has a much greater diversity of plants and animals than any place crushed under that vast glacier. The Walden Pond ecosystem is world famous, but Lake Floyd, south of the ancient ice sheet, actually has a greater variety of plants and animals.

> *"The earth laughs in flowers."*
>
> —Ralph Waldo Emerson

2

Edward O. Wilson: Diversity of Life

Evolutionary biologist Edward O. Wilson inspires any Bio Blitz, or any attempt to record forms of life. Wilson is one of the first biologists to undertake the practically impossible task, at least by current science, to estimate the number of separate forms of life, ("species"), on earth.

"Make endangered species a vivid presence in the lives of people. Make it clear that every endangered species has a name, has a million-year history, has a place in the world. Bring us face-to-face with each one of these species. Make us know that they are our companions in the biosphere. They are not something out there that you look at once in a while, but they're a part of our existence … they are a part of us."

—E.O. Wilson

Edward O. Wilson delivered the Young Lecture at the University of Maryland on Bioscience Day, November 2008.

rtsp://streaming.umd.edu:10554/academic/clfs/FutureOfBiology.mov

http://streaming.umd.edu:8080/ramgen/academic/clfs/FutureOfBiology.mov

What is a species?

"Thus, from the war of nature, from famine and death, the most exalted object of which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved."

—Charles Darwin, *Origin of Species*

> *"Each species is a masterpiece. It deserves that rank in the fullest sense: a creation assembled with extreme care and genius."*
>
> —E.O. Wilson

The concept "species" itself is an artificial classification useful to humans, as if anyone could classify constantly evolving life. It is, however, a very helpful artificial classification and here is a definition of "species."

> A species is often defined as a group of individuals that actually or potentially interbreed in nature. In this sense, a species is the biggest gene pool possible under natural conditions.
>
> That definition of a species might seem cut and dried, but it is not—in nature, there are lots of places where it is difficult to apply this definition.
>
> For example, many bacteria reproduce mainly asexually. Some bacterium reproduce asexually by binary fission. The definition of a species as a group of interbreeding individuals cannot be easily applied to organisms that reproduce only or mainly asexually.
>
> Also, many plants, and some animals, form hybrids in nature. Hooded crows and carrion crows look different, and largely mate within their own groups—but in some areas, they hybridize. Should they be considered the same species or separate species?
>
> If two lineages of oak look quite different, but occasionally form hybrids with each other, should we count them as different species?
>
> There are lots of other places where the boundary of a species is blurred. It's not so surprising that these blurry places exist—after all, the idea of a species is something that we humans invented for our own convenience!

http://www.evolution.berkeley.edu/

What is biodiversity?

> *"Biodiversity, the concept … embraces every kind of living creature. The definition soon agreed upon by biologists … is the totality of hereditary variation in life forms, across all levels of biological organization, from genes and chromosomes, within individual species to the array of species themselves, and finally at the highest levels, the living communities of ecosystems such as forests and lakes."*
>
> —E.O. Wilson, Naturalist

3

The Lake Floyd Community

I knew Lake Floyd would be an ideal place for a Bio Blitz because it is a tight-knit community long experienced in organizing and pulling together community events. Lake Floyd was blessed with strong and dedicated leadership who took great pride in their "hidden jewel" in the West Virginia Hills.

The Lake Floyd community took a chance on an unknown event, this first-time-in-West Virginia Bio Blitz and opened their individual and common properties, their homes and warm hospitality to more than a hundred guests over a whirlwind weekend. The first West Virginia Bio Blitz was big and ambitious, especially for a community of amateurs, albeit guided by scientists. In our planning meeting I was gratified to hear the comment "let's plan big and cut back if we have to" made and agreed upon.

Lake Floyd Club 1923

Lake Floyd was built in 1922 – 23, by Duffy Floyd, a developer who also built dams to form Maple Lake near Bridgeport, and Crystal Lake near West Union. The concrete core and earthen dam at Lake Floyd was built in the autumn of 1922 using steam-powered earth-moving machines.

The Lake was intended to be a fishing camp and 40-foot lots, about 250, were sold. Some of the families who purchased those first lots are still members today. Lake Floyd Club is a private community, but not gated or set apart. A public road, Halls Run Road, runs along the water's edge, so Lake Floyd is well-connected to neighboring communities.

The Lake is in a valley with the lots on the North hillsides, called the "public side," sloping uphill more gradually, facing south and east to catch the morning sun. Lots on the South hillsides, called the "private side," are steeper, facing north and west, more heavily wooded, shaded and cooler in summer.

In the 1920's, tents and a few picnic tables were placed on the lots. In the 1930's, the first summer-only "cabins" or "cottages" appeared and the clubhouse was built. In the 1940's, more summer cottages, and the clubhouse was expanded. A few residents stayed "year-around," but very few since Lake Floyd was a

long drive from Clarksburg, ten miles on two-lane US Route 50. In the 1950s, still about 90% of the families were summer-only. On Memorial Day weekend an influx of people moved to the Lake, on Labor Day weekend they moved back to town. The few families who stayed from September through May had a quiet Lake Floyd to themselves in the off-seasons.

In the mid-1960's, suddenly many year- around homes were built, the old summer cottages were torn down or expanded. Today only a few of them remain, and at least 90% of Lake Floyd residents are year-around.

The land that is the golf course was an over-grown farm until about 1960. Where # 1 green is now a large barn stood where Lake members kept horses. There were two ponds, the second one was where # 2 green is now.

Volunteer Leaders

> *"Bioblitzes are the single most efficient way to introduce people to field work and taxonomy. If properly planned, impacts to the surveyed areas are minimal, but the value gained in the experience volunteers undergo is truly worth what little disturbance is produced by the effort. I HIGHLY recommend bioblitzes, they truly are the most efficient way to introduce citizen scientist to real field work and ecology."*
>
> —Zach Loughman, Natural History Research Specialist,
> West Liberty State College, Wheeling, WV

Bio Blitz was a first-time process but Lake Floyd volunteers plunged into duties such as covering the club house with colorful posters and other info about the fauna and flora at Lake Floyd, as recorders of the incoming data at the clubhouse, as zone leaders, and anything that needed to be done.

Signage

Keith Parker came up with a colorful logo. The signs and nametags for scientists and organizers were all home-made on site. Anita Burns created stacks of colorful signs: for the clubhouse to direct participants, signs to mark boundaries for the Lake and Terrestrial Zones, Taxa signs for the counting tables (see 14 Attachments). These signs, along with forms and nametags all used the Lake Floyd Bio Blitz logo and were essential to the process. West Virginia Division of Natural Resources ("WVDNR") teaching aids and nature art displays were put up on the outside and in the ballroom of the clubhouse.

Housing

The Lake members opened their homes to scientists, experts and other visitors. Judy Burns, Anita Burns, Linda Smith, Sadie Graham, Dusty Spelsberg, Joe Malone, Don Gardner, Marie Powell, and others found weekend housing for incoming scientists and experts at Lake Floyd, no charge, to make it easier for them to commit to this event. There were no hookups for campers, but primitive camping was permitted that weekend on clubhouse grounds and elsewhere on Lake Floyd property. A few campers arrived, and they were parked near the tennis court. A few visitors stayed overnight in the clubhouse.

4

Research and Organizing

From Wikipedia "Bio Blitz":

> The term "BioBlitz" was first coined by U.S. National Park Service naturalist Susan Rudy while assisting with the first BioBlitz. The first BioBlitz was held at Kenilworth Aquatic Gardens, Washington D.C. in 1996.
>
> Approximately 1000 species were identified at this first event. This first accounting of biodiversity was organized by Sam Droege (USGS) and Dan Roddy (NPS) with the assistance of other government scientists. The public and especially the news media were invited. Since the success of the first bioblitz, many organizations around the world have repeated this concept.
>
> Since then, most BioBlitz contain a public component so that adults, kids, teens and anyone interested can join experts and scientists in the field. Participating in these hands-on field studies is a fun and exciting way for people to learn about biodiversity and better understand how to protect it.
>
> In 1998, Harvard biologist E.O. Wilson and Massachusetts wildlife expert Peter Alden developed a program to catalog the organisms around Walden Pond. This led to a state-wide program known as Biodiversity Days. This concept is very similar to a BioBlitz and occasionally the two terms are used interchangeably.

During the winter and spring, we searched online for other Bio Blitzes, and talked with experts who had designed and coordinated them.

Planning Resources

Connecticut State Museum of Natural History BioBlitz Organizational Guide, www.mnh.uconn.edu, Ellen J. Censky, Director. Extremely helpful and practical guide to a Bio Blitz, with great tips, a Checklist and an excellent Planning Schedule from one year prior to two months after.

Bedford, NY, Audubon Society Bioblitz, six locations
http://www.bedfordaudubon.org/bioblitz/bioblitz_scientists.pdf

Edward O. Wilson Biodiversity Foundation www.eowilsonfoundation.org

Experts

Thanks to the following experts who gave us advice, many practical tips, and referred us to more experts.

a) From Craig Tufts, National Wildlife Federation:

"David:

There have been two well-organized bioblitzes in the Washington DC area over the past two summers. One was along the Potomac Gorge and was jointly sponsored by TNC and NPS; the second was in Rock Creek Park and had three or four sponsors including NPS, Nat Geo, and perhaps Maryland national Capitol Parks and Planning.

There are a range of bioblitz formats and "ranges of complexity." Sometimes these are community efforts to generate knowledgeable persons of all ages with an interest in a resource and are more focused on learning and fun than collecting hard data. NWF has conducted three of these working with a number of community partners with the last in 2006, all in the Denver CO area.

The two I mentioned at the top of this note as well as others I've heard about, are focused on a true biological inventory of select animal and/or plants. Top notch specialists in the selected fields are invited to assist and volunteers with or without academic training and self-taught naturalists sometimes help out. Often there is a companion educations event with a focus on biodiversity and a variety of simulations of what the scientific community is doing.

A couple of people to contact, as they have been active in promoting and assisting in bioblitzes for a number of years (Sam Droege: sdroege@usgs.gov) and Mary Travaglini with TNC at marytravaglini@yahoo.com who headed up TNC's efforts for the Potomac Gorge bioblitz.

If I can be of further help, please contact me."

Craig Tufts - Chief Naturalist and
Director of Citizen Science Programs
National Wildlife Federation
www.nwf.org

b) Sam Droege, sdroege@usgs.gov, organized first Bio Blitz in 1996. See Patuxet Wildlife Research Center BioBlitz www.pwrc.usgs.gov/blitz, www.patuxent.fws.gov

c) Mary Travaglini with The Nature Conservancy marytravaglini@yahoo.com. Coordinator of Potomac River Gorge Bio Blitz.

d) Tim Watkins, National Geographic
http://www.nationalgeographic.com/field/projects/bioblitz.html

e) Zachery Loughman, West Liberty State College, Wheeling; Crustacean Team Leader at Potomac River Gorge Bio Blitz near Washington, D.C., by The Nature Conservancy and the National Park Service, 600 people.

f) Penny Miller, Director, Oglebay's Good Zoo, Wheeling, found experts for Lake Floyd Bio Blitz.

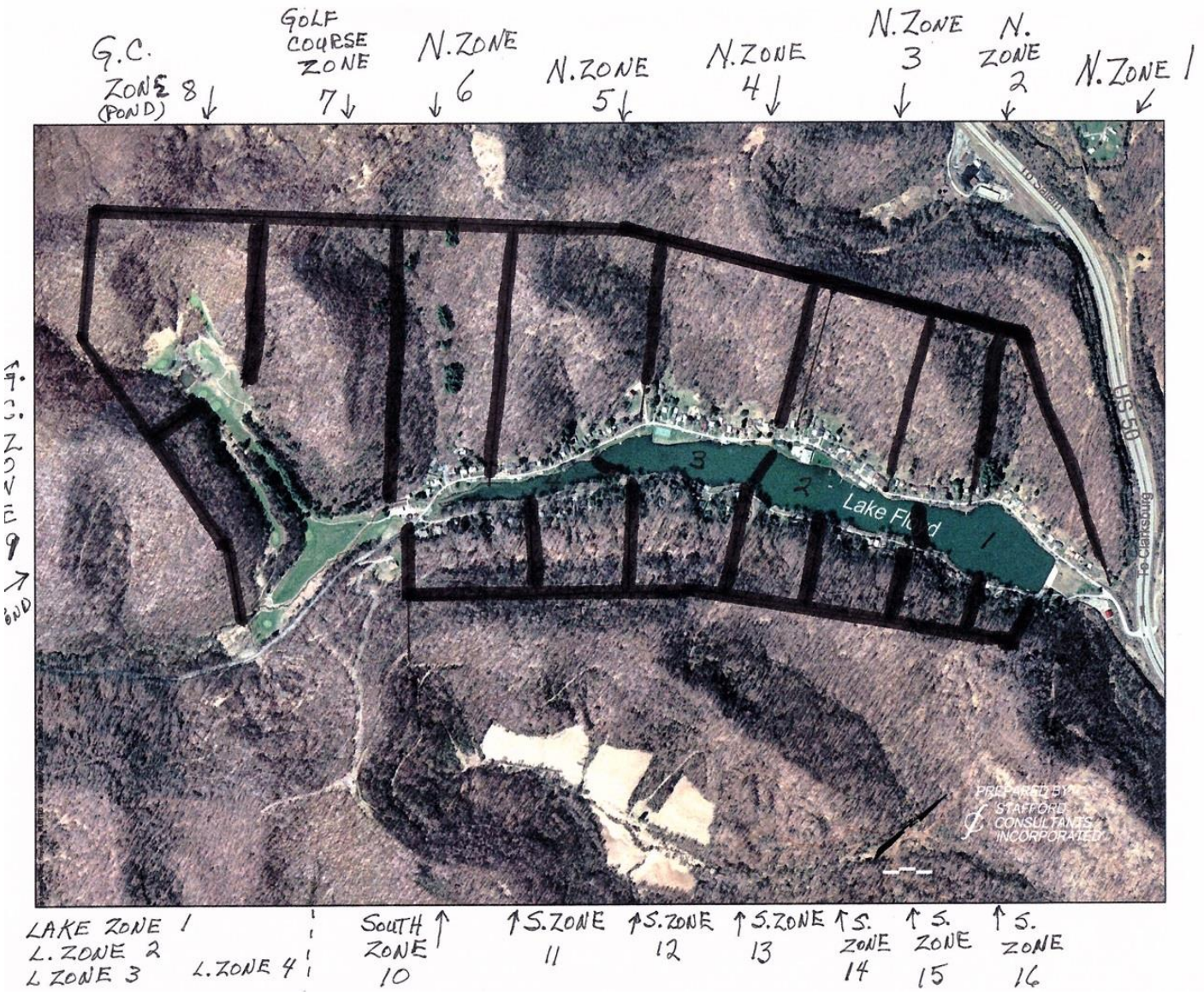
g) Sue Thompson, Pennsylvania DNR, coordinator/volunteer at two large Bio Blitzes near Pittsburgh, including Powdermill Nature Reserve BioForay, June 4-8, 2008, www.powdermill.org Rector, Pennsylvania.

h) Elizabeth Byers, WV Division of Natural Resources, Elkins, provided educational nature info, posters, various field survey forms, always helpful and encouraging.

The West Virginia Division of Natural Resources. The WVDNR, Wildlife Resources Section, was the bedrock of our expertise for this nature-education event. WVDNR asked that it be a public event, and it was. We invited current and retired science teachers from Harrison County and Doddridge County to come and bring students. We invited local Boy Scout and Girl Scout troops, from as far away as Parkersburg, several merit badges could be obtained during a wildlife weekend like this. We invited 4H groups, neighbors from Halls Run, and Salem, anyone and everyone who wanted to come and learn and help us count and collect. A few days before Bio Blitz we placed an invitation in a local weekly newspaper. WVDNR sanctioned the Lake Floyd Bio Blitz as training hours in the WV Master Naturalists Training Program.

5

Property Organized into Zones



To show where the various species would be found, we zoned the 700 acres of the Lake Floyd property. These Zones, Lake Zones 1- 4, North Zones 1- 6, Golf Course Zones 7-9, and South Zones 10-16, covered the entire 700 acres of the Lake Floyd Club property. The Zones roughly comprised mini-watersheds. We are listing all these zones in case anyone ever wants to do this again.

Lake Zones 1 - 4

The Lake itself, 36 acres, was divided into four zones.

Lake Zone 1 was from the dam to where the lake first narrows (Lot # 32 to Lot # 162).

Lake Zones boundary between Zone 1, right & Zone 2, left. Courtesy Richard Hunt.

Lake Zone 2 was from the first narrow to the picnic area (Lot # 68 to Lot # 190).

From Lake Zone 3. Courtesy Teresa Bragg Carter.

Lake Zone 3, from picnic area to where it narrows again below the old volley-ball court (near where fireworks are launched) (Lot # 104 to Lot # 210).

Lake Zone 4. Courtesy Teresa Bragg Carter.

Lake Zone 4, from that narrow to the Lake end, at the bridge by the golf course, and up the stream to # 1 Tee. (Lot # 249 to Lot # O and to #1 Tee).

Terrestrial Zones: All terrestrial zones, North, South and Golf Course, went to ridge top boundaries of the Lake Floyd property, except Golf Course Zone 9 which stopped at Halls Run Road on the south side. Collectors could divide these zones approximately into lower 1/3 (near the bottom), middle 1/3 (on the hillside), upper 1/3 (to the ridge-top).

North Side vs. South Side

As anyone who has lived at Lake Floyd knows, the North Side is sunnier, the South Side is cooler. The plants and animals on the north-facing side of Lake Floyd (South Zones 10-16) will be very different than south-facing side, (North Zones 1-6), because of sunlight, temperature and moisture.

North Zones 1 – 6

The North Side was designated zones 1-6. The zones are described as mini-watersheds, five of the six zones had a stream in the woods as its center-point, and the tops of the small steep hills ("hogbacks") on each side of the stream became the boundaries of the zone. So streams behind the Billingsley house (Lot # 21), the Jack Anderson house (Lot # 61), the Thorniley house (Lot # 90), the Boyd Warner house (Lot # 104) and the Ron/JeanTurner house (Lot # N) became focal points for the six North Zones.

North Zone 1 was from the Lake Floyd property line at the Route 50 exit below Lot # H to Lot # 28.

North Zone 2 from Lot # 28 to Lot # 44.

North Zone 3, from Lot # 44 to Lot # 63.

North Zone 4 from Lot # 63 to Lot # 92.

North Zone 5 from Lot # 92 to Lot # 121.

North Zone 6 from Lot # 121 to Hole # 1 Tee, beginning Golf Course Zone 7.

Golf Course Zones 7, 8, 9

The Lake Floyd Golf Course includes 150 acres, and was designated into three Golf Course Zones, numbered Zones 7, 8, 9.

Golf Course Zone 7 was the largest of all the zones on the Lake Floyd property. It was the land including and above # 1 and 2 fairways, all the way up to the ridge-top, to the stream in front of # 3 Tee.

Golf Course Zone 8 turned out to have the highest biodiversity and species counts of any zone. It encompassed holes #3, #4, #5 and #6, including the pond, the stream in the woods behind the pond and the hillsides all the way to the ridge-top. In other words, the holes up the hollow at the end of the golf course property. It shared the pond with Golf Course Zone 9.

Golf Course Pond Zones 8 & 9. Courtesy Teresa Bragg Carter.

Golf Course Zone 9 was large, it began at the pond, included holes #7, #8, upper #9 fairway and green #1. The hillsides were from #2 fairway and #9 fairway to the ridge-top, and from # 9 fairway to Halls Run Road.

Golf Course Zone 9 at Hole 8. Courtesy Steve Goff.

The stream along #9 fairway was divided between Zone 9 (upper half) and Zone 7 (lower half).

South Zones 9 – 16

Just as the North Zones, the South Zones were described as mini-watersheds, with a stream as a central focus for six of the seven zones. The streams were behind Lot # 243, Lot # 223, Lot # 198, Lot # 187, Lot # 165, Lot # 146, and the high points of the adjacent hogbacks were the boundaries of those zones.

South Zone 10 was from Lot # 250 to Lot # 233.

South Zone 11 was from Lot # 233 to Lot # 210.

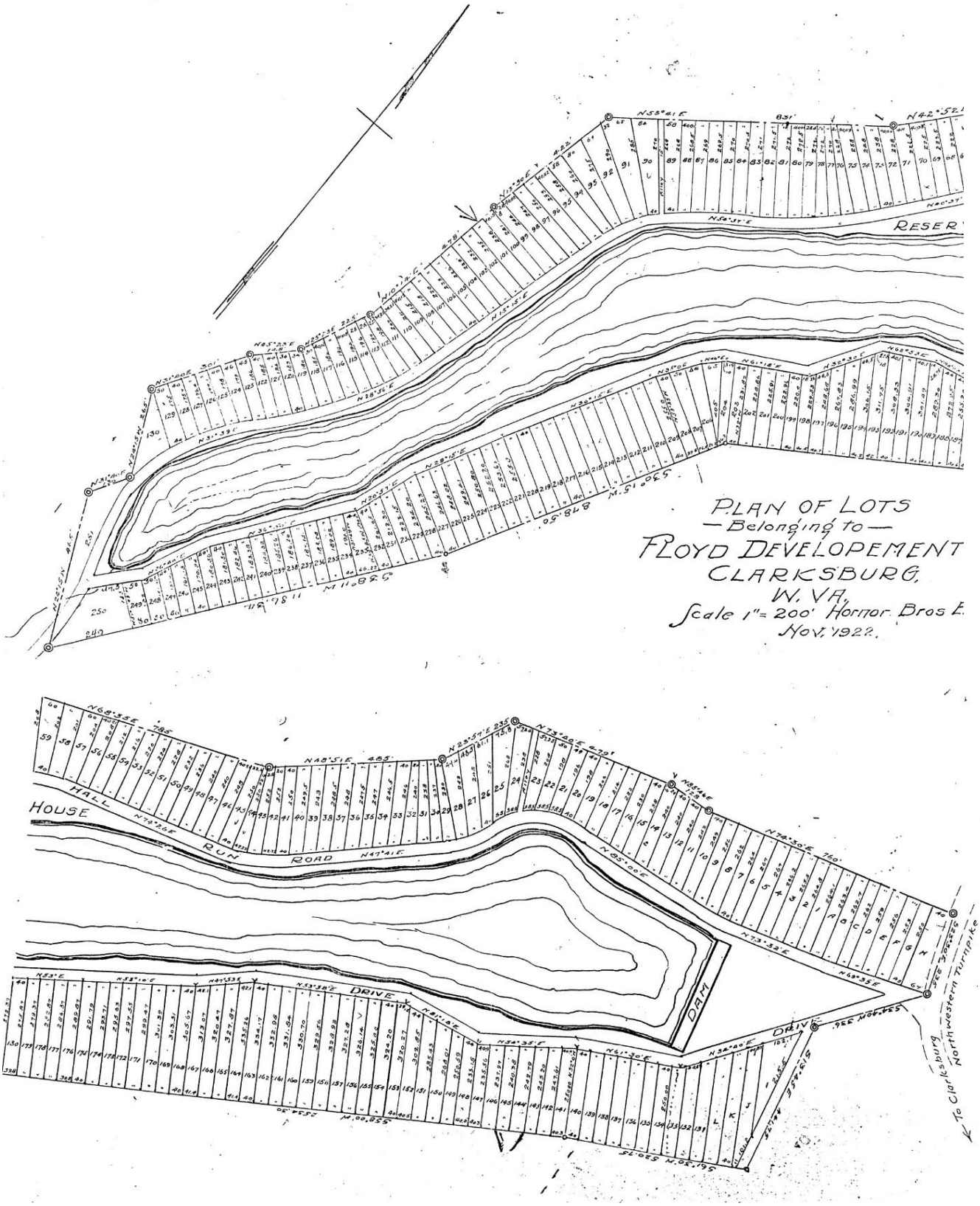
South Zone 12 was from Lot # 210 to Lot #191.

South Zone 13 was from Lot # 191 to Lot # 176.

South Zone 14 was from Lot # 176 to Lot # 161.

South Zone 15 was from Lot # 161 to Lot # 142.

South Zone 16 was from Lot # 142 to Lake Floyd property line below Lot # J.


PLAN OF LOTS
—Belonging to—
FLOYD DEVELOPEMENT
CLARKSBURG,
W. VA.
Scale 1"= 200' Hornor Bros E.
Nov. 1922.
HALL
HOUSE
RUN
ROAD
DRIVE
DAM
To Clarksburg
North Western Turnpike

Zone Leaders

We were able to recruit zone leaders, most of whom had houses in their zone. They could take volunteers into their zones, help guide Taxa Teams through their zones, not too many requirements, just enjoy themselves outdoors. There was a suggestion that everyone learn the tree species on their own lot. Our thanks to these Bio Blitz Zone Leaders:

Lake Zone 1 Dennis McAvey
Lake Zone 2 Kyle Gay
Lake Zone 3 George Owens
Lake Zone 4 Laurel Klein

North Zone 1 Earl Morris
North Zone 2 Al & Judy Trecost
North Zone 3 Donna and Glenn Snider
North Zone 4 Jeff and Kyra Schlosser
North Zone 5 Tim & Amy Bunch
North Zone 6 Paul & Teresa Carter

Golf Course Zone 7 Bill and Elaine Kapphan
Golf Course Zone 8 Brad Hickman
Golf Course Zone 9 Open

South Zone 10 Gary Winters
South Zone 11 Mark Hall
South Zone 12 Kim and Les Reaser
South Zone 13 Keith and Angie Parker
South Zone 14 Mark and Jill Lilly
South Zone 15 Barbara Allison
South Zone 16 Chris Jarom

Lake Zone 2 and Clubhouse. Courtesy Steve Goff.

Bio Blitz Central

Bio Blitz Central was at the Clubhouse and Picnic Pavilion and included Plant Zones Tables, Recording Tables, Scoreboard, Lake Floyd Zoo and Aquarium, Kids Corner.

Scoreboard. A large wooden Bio Blitz scoreboard was made on Friday by Lake Floyd Superintendent Jim Reaser and Jason Haynes. They attached it near the picnic pavilion and the big scoreboard with Taxa results was updated minute by minute as collectors brought in more plants, birds, reptiles and everything. The scoreboard became the focal point at the recording tables in Bio Blitz Central.

Plant presses. Thanks to Donna Ford-Werntz, WV Herbarium Curator, several large plant presses were brought and volunteers at the plant pressing table was kept busy recording and preparing plant specimens to go to the West Virginia University Herbarium Collection for Harrison County.

Children's Program

> *"Teaching children about the natural world should be treated as one of the most important events in their lives."*
>
> —Thomas Berry

> *"I like to play indoors better, 'cause that's where all the electrical outlets are."*
>
> —Paul, San Diego 4th grader,
> from *Last Child in the Woods: Saving Our Children from Nature Deficit Disorder,* by Richard Louv

From The Nature Conservancy: The reasons kids say they do not spend more time in nature. It's Uncomfortable (heat, bugs, etc.) 80%. No Transportation 62%. Don't Live Near Nature Areas 61%. Not Interested 49%. Gangs, Crime Make Them Unsafe 49%. Risk of Getting Hurt 45%. Don't Feel Welcome 43%. Health Issues 39%. Cost 39%. Family Won't Allow It 31%.

A high-energy lady, Barbara Seels, from Pittsburgh, provided Bio Blitz with a very professional children's nature educator and entertainer. Barbara came early Saturday in full costume as "the old lady of the woods … Granny Rhubarb," and set up her Kids Corner on a large picnic table in the shade alongside the Lake Floyd Zoo. Barbara quickly attracted a crowd of excited children too small to be out roaming the hillsides. She was constantly busy with kids at her table all day. She had so many different nature activities! Barbara easily handled a 45-minute downpour mid - day, she simply moved all games and fun indoors to the shuffleboard area until the rain stopped and all the kids followed her there. As I passed the Kids Corner throughout the day, I saw small children working on bird coloring books, using white butterfly nets and hand- held magnifying glasses. Barbara made balloon animals, the table was covered with story books, painting, nature stuff was going on. bseels@pitt.edu

From Barbara Seels on May 31, 2008:

> "How To: Children's Activities
>
> The purpose for these activities will be to raise children's awareness of elements in nature and to free their parents and siblings for work, and to make the experience fun. After some reflection, I've decided these activities should be kept as flexible as possible at least until I have a better idea of ages, numbers, interest.
>
> I think all I need is a table or ideally two, some chairs or a bench or two and a little shade if the sun is bright. I can bring a sign for "Kids Corner" and make additional signs

as needed for activities. Or a general sign “Kids Corner with Granny Rhubarb-Games, Activities, Balloons, Puppets, Stories.”

The activity possibilities will be outdoor games, table activities, balloon sculpture, bubble blowing, arm painting, storytelling, puppets. I will try to relate each of the activities to nature. Thus, I can make balloon animals and flowers and talk about animals and flowers in WV, have them make up little shows using animal puppets, have nature story books for children and tell stories relevant to WV, be prepared to play water snakes and blanket bounce and talk about snakes and insects, offer wildflower bingo and talk about WV wildflowers, have children follow the leader in moving like animals. Table activities could include bird coloring, identifying native foods or plants, animal mazes, matching animals and tracks, illustrating Indian myths after they are told. You do not need to worry about resources for any of this. I'll bring them and also incorporate what you bought from Oriental Trading. I have most of the resources needed already.

Some, all or none of these may be appropriate. I'll see and organize it as it evolves.”

Roy Moose Snake Man. Keith Parker made our Saturday even more exciting by arranging for Roy Moose, the Snake Man, to bring rattlesnakes, copperheads and blacksnakes to Bio Blitz. A circle of wide plastic barriers, too high for the snakes to crawl over, but low enough to easily see over, were placed in a circle in the clubhouse ballroom. The barriers kept the children well away and the poisonous snakes were free to safely crawl about on the dance floor. Roy’s exciting presentation with Questions and Answers drew a big crowd.

Thunder the Bald Eagle. After the Snake Man, the crowd went downstairs to the shuffleboard area where Thunder the Bald Eagle, handled by Michael S. Book, Director, was displayed by the WV Raptor Rehabilitation Center www.wvrrc.org.

Thunder the Bald Eagle was hatched and banded as a chick in a nest in New York State in the Spring of 1992. She was a victim of a gunshot wound from a high-powered rifle in Jackson County, WV, about 25 miles south of Parkersburg. The violator was never apprehended.

Female Bald Eagles are considerably larger than the males. Thunder has a seven foot wingspan and weighs 12 pounds.

She is a very large wild bird, making her difficult to work with. While she can be quite difficult at times and her intelligence making it an even greater challenge, she is a pleasure to work with.

At Lake Floyd, the eagle had to be displayed against a wall in the shuffleboard court, because with its keen eyesight a window behind it would be too distracting and frightening, making it unmanageable among so many spectators.

All was arranged and spectators were able to get close to a Bald Eagle to see what a big animal it was, and how difficult it could be to control even with the heavy leather handler gloves. Again there were many questions and Thunder the Bald Eagle was a delight for adults and children alike.

Mike told me on October 24, 2014, “Thunder recently passed away, she was a very large bird, at 13 pounds in the top 5 percentile of eagles. She never lost the wild, in fact we don’t want to take the wild out of our raptors, just make them comfortable while they are with us. She was all wild and not the least bit intimidated by any human. She just tolerated us, but taught so many children and adults about eagles.”

Photos courtesy WV Raptor Rehabilitation Center.

6

The Collecting Process

Because so many WVDNR scientists would be on site, we were able receive an exemption from obtaining a WV Scientific Collecting Permit. This allowed us to catch wild animals for the two- day Lake Floyd Zoo and Aquarium which sprang up at the picnic pavilion. We posted that WVDNR exemption letter beside the Bio Blitz scoreboard at the picnic pavilion.

After the 4:00 p.m. Sunday end of Bio Blitz, all animals were taken back to where they were caught and released.

Ways to Collect

The Bio Blitz collecting process was designed to be flexible and inclusive. Bio Blitzers had several ways of participating.

1. Zones
Collectors could spend as much Bio Blitz time as they wished only in their zone, which often began in or near their back yards. These land zones all reached up to the ridge tops, so an all-day hike collecting everything they saw could make a great expedition in the woods right behind their house.

2. Recording Data
Collectors could help at Bio Blitz Central, the clubhouse, where plant and animal species/data was incoming, and had to be classified and recorded. We placed the plant species on big tables labeled by zones in the picnic pavilion at the clubhouse.

Autumn clubhouse and picnic pavilion on left. Courtesy Steve Goff.

As animals were brought in, the Lake Floyd Zoo and Aquarium quickly formed, with fish in buckets, mice and chipmunks in small cages, very big snapping turtles and a tiny snapper too, Eastern box turtles, a stinkpot turtle, painted turtles, snakes and the big catch of the weekend, a confused opossum.

The Lake Floyd Zoo delighted all the children, we had to watch carefully to make sure the little ones did not try to pet the snapping turtles.

Snapping Turtle, Bio Blitz Central, Lake Floyd Zoo. Courtesy WBOY TV.

3. Join a Taxa Team *(From Taxonomy: the science dealing with the description, identification, naming, and classification of organisms.)*

Collectors could sign up for a Taxa Team. The Taxa Teams were led by our scientists and could freely roam anywhere across all zones. Taxa Teams searched for the species in their designated Taxa. For example, we had a South Zones Plant Taxa Team that hiked across most of the South (north-facing) Zones. At the same time an Aquatic Plant Taxa Team was paddling in kayak and canoe around all four Lake Zones, bringing in aquatic plants to the tables in the picnic area.

Choices were

1) In-Zone collecting,
2) helping record species at the clubhouse, and
3) following scientists leading Taxa Teams.

Many participants spent time doing two or all three, or

4) just strolling around enjoying the scene.

We handed out a Bio Blitz Plant and Tree Reporting Form in the prior week so anyone could survey their own property, particularly tree species, and hand in the form during Bio Blitz.

7

The Experts

"In nature's book of secrets a little I can read."

—William Shakespeare, *Antony and Cleopatra*

"To a person uninstructed in natural history, his country or seaside stroll is a walk through a gallery filled with wonderful works of art, nine-tenths of which have their faces turned to the wall."

—Thomas Huxley

"From wonder into wonder existence opens."

—Lao-Tzu

We had about 40 experts**,** from nationally and internationally known professional field biologists and botanists, such as Tom Pauley or Bill Grafton, to people who had been trained in a certificate program such as the Master Naturalists program to graduate students in sciences.

Caroline Baker, research docent, entomology, Smithsonian Institution
Kala Bassa, Oglebay Zoo
Michael Book, Director, WV Raptor Rehabilitation Center
Cynthia Brissey, botanist, WV Wesleyan College
Jay Buckelew, ornithologist, Bethany College
Larry Campbell, Master Gardener program
Rebecca Eneix Chong, Master Naturalist
Al Crum, plant/fungi Master Gardener program
Jack Daft, Buffalo Creek Dream-makers Conservation Group
Tonya Daft, Buffalo Creek Dream-makers Conservation Group
Pam Davey-Huggins, oceanographer, Fish-heads at Fairmont, Fairmont State University
James DeNucci, salamanders, Olgebay Zoo
Donna Ford-Werntz, WVU Herbarium Curator
Don Gasper, WVDNR fisheries biologist
Helen Gibbons, WV Native Plant Society
Harry Godwin, US Department of Agriculture entomologist
Bill Grafton, WVU School of Forestry
Joe Greathouse, Olgebay Zoo
Joey Herron, birding and plants, Fairmont State College, Master Naturalist
Cheryl Jennings, Potomac Valley Master Naturalist
Chad Kirschbaum, Ohio Native Plant Society, Wayne (Ohio) National Forest
Jon A. Lewis, USDA Systematic Entomologist, Smithsonian Institution
Laura Miller, WV Department of Agriculture, Taxonomic Entomologist
Penny Miller, Director, Olgebay Zoo
Donna Mitchell, WVDNR Non-Game Wildlife & Natural Heritage Program, fungi
Roy Moose, Snake Man, poisonous snakes interpreter
Ashley Tokas Ness, Lepidoptera presentation, Monarch Butterflies
Susan Olcott, WVDNR Odonata Atlas Project
Joy Pardue, Potomac Valley Master Naturalist
Jeff Patton, WV Native Plant Society
John Plischke, Pennsylvania biological survey
Thomas Pauley, herpetologist, Marshall University
William Roody, WVDNR Non-Game Wildlife & Natural Heritage Program, fungi
Jacob Saborse, Youngstown State Univ. bird thesis

Barbara Seels, Master Naturalist, children's nature interpreter
Danielle Snider, WVU grad student, biology
Kelley Smith, Cacapon State Park naturalist
Judi White, WV Native Plant Society
John Zaborsky, WV Native Plant Society

Taxa Team Leaders

From among these experts, our Taxa Team Leaders gave generously of their time teaching while at Lake Floyd.

Reptile and Amphibian Taxa Team Leader - Dr. Thomas Pauley, Marshall University, Huntington

Dr. Pauley is world-renowned herpetologist, recognized as a leading expert on the reptiles and amphibians of the Appalachian Mountains. Dr. Pauley has published hundreds of articles and several books. See 13 Bibliography below.

A member of the West Virginia Wildlife Biodiversity Advisory Council and the Declining Amphibian Task Force (Appalachian Working Group), Pauley has since the 1960s led field research and studies in West Virginia, home to 34 species of salamanders. He has specialties in ornithology, herpetology and conservation biology.


Cheat Mountain Salamander. Calherps

Dr. Pauley earned a bachelor's degree at the University of Charleston, a master's degree from Marshall University, and a Ph.D. from WVU, went on to teach biology-related courses at Salem College, the University of Pittsburgh and Marshall, where he spent 26 years as a professor. He also earned a reputation as the state's leading expert on salamanders, particularly the Cheat Mountain salamander, a threatened species known to exist only in five northeastern West Virginia counties.

Since 1976, Pauley has conducted Cheat Mountain Salamander surveys at more than 1,300 sites across northeastern West Virginia, finding populations of the threatened species in about 70 of them. Later, Pauley wrote the U.S. Fish and Wildlife Services recovery plan for the rare, gold-flecked, all-West Virginia salamander.

From Marshall University:

> The amphibian and reptile collection of the West Virginia Biological Survey Museum, located in the Science Building at Marshall University in Huntington, WV, is maintained by Thomas K. Pauley and his graduate students. There are currently over 15,000 specimens of amphibians and reptiles in the museum. Almost all of these specimens are from West Virginia, and are a result of 100 years of surveys mainly performed by herpetologists in the state. We are in the process of completing a statewide Atlas for the amphibians and reptiles in West Virginia. The museum serves as a storehouse for both

historical records of amphibians and reptiles as well as a depository for new county records.

Small-mouthed Salamander. Marshall Univ. Zach Loughman.

Salamander Hike Taxa Team Leader Joe Greathouse
Director of Conservation Biology at The Wilds in Cumberland, Ohio; an M.S. in Wildlife and Fisheries Resources Management from West Virginia University; PhD candidate in Animal Sciences at WVU studying the conservation of the Eastern Hellbender *Cryptobranchus alleganiensis alleganiensis* in West Virginia.

Hellbender. Marshall University (60 cm, two feet long). John White.

Bird Taxa Team Leader - Dr. Jay Buckelew, Bethany College, Wheeling, *West Virginia Breeding Bird Atlas*

From Bethany College:

> Bethany College Professor of Biology Albert "Jay" R. Buckelew joined the Bethany faculty in 1969 and is well-known nationally and internationally for his work in microbiology and ornithology. He has authored two books, more than 50 articles and abstracts and numerous book reviews. Buckelew serves as a section editor for the Proceedings of the West Virginia Academy of Sciences and is also editor of The Redstart journal of the Brooks Bird Club, headquartered in Wheeling, W.Va.

Buckelew served as Chair of the Bethany College Department of Biology from 1977-1978 and 1981-2010. He has taught courses such as cell biology, field botany, photography, environmental science, invertebrate zoology and ecology. He has also maintained a long-term study of breeding birds in Bethany's Parkinson Forest.

He has accumulated numerous honors, including the West Virginia Wildlife Federation's Conservationist of the Year award in 1996.

Darin Fields, Dean of Faculty, said, "For more than four decades, Dr. Buckelew has consistently dedicated himself to preparing students for careers in science and medicine. His passion for his subject matter is infectious and has had a profound and lifetime influence on his students." Fields continued, "I have found him to be one of the most remarkable, talented and committed teachers I have known.

Bethany College President Scott D. Miller stated, "Generations of students have passed through his classroom, and scores of students remember him as a wonderfully talented, compassionate teacher and lifelong learner who motivated them to pursue lives of scientific discovery."

South Zones Bird Taxa Leader - Joey Herron

Joey Herron's birding experience spans over four decades, sight and sound. In 1980 he earned a B.S. degree in Biology at Glenville State College. He has done extensive field work from studying nesting Red-tailed Hawks to migrating warblers, and has written over a dozen articles for Brooks Bird Club's quarterly publication, *The Redstart.* Since 2005 he has been operating a banding station each fall at Valley Falls State Park near Fairmont, WV, banding over 240 migrating Saw-whet Owls. He has published a book, *Birds of Prickett's Fort State Park,* showcasing the park's over 140 species of birds with photographs. The book is available on blurb.com. He is currently conducting banding demonstrations for spring and fall migrants at Tygart Lake State Park. He earned his master banding permit in 1997 through the Bird Banding Lab in Patuxent, Maryland. From WV State Parks.

South Zones. Courtesy Joey Herron.

Fish Taxa

Our Fish Taxa Team Leader had to cancel late because of a family matter so **WVDNR fisheries biologist Don Gasper** kindly came to Lake Floyd on Sunday with very short notice.

In Memory of Don Gasper 1931 – 2013

Don Gasper died on January 31, 2013, at 82 years of age a tireless advocate and active volunteer in support of all things environmental. Trained as a fish biologist and retired from the West Virginia Division of Natural Resources after 38 years of service to West Virginia. He was the first fisheries biologist assigned to the Monongahela National Forest.

A determined worker, he continued to practice fish and water related sciences throughout the rest of his life. Don was a 50-plus year member of the American Fisheries Society. He was also a longtime active member of Trout Unlimited, The W.Va. Highlands Conservancy, the West Virginia Environmental Council and The Buckhannon River Watershed Association.

Don served as a Cub and Boy Scout leader for many years taking the time from his weekends and evenings to bring his love of nature and the outdoors to the generations that followed. In 2011, "Don Gasper was honored as an 'Environmental Steward' for his work in supporting conservation education at the community, state, and national levels." Don as "a member of the Buckhannon Watershed Association, worked with Buckhannon-Upshur High School and West Virginia Wesleyan College students to measure water quality in the Buckhannon River."

2011 Tribute on the WV Environmental Steward Award
By Donald S. Garvin, Jr., WV Highlands Conservancy

"A native of Kansas City, Missouri, Don Gasper moved to Elkins in the 1950's after graduating with a fisheries biology degree from the University of Missouri. He immediately began his career as a fisheries biologist with the WV Division of Natural Resources. For a long while he was the only fisheries biologist covering the streams in the Monongahela National Forest. During his career he became the leading expert on acid rain impacts in West Virginia, and a leading opponent of bad timbering practices in the state. He has also worked on these issues on the national level.

His advocacy efforts have included work with Trout Unlimited, the WV Highlands Conservancy and the West Virginia Environmental Council. He has worked for years with workshops for teachers on environmental education. And his efforts in the local community on solid waste, litter control, and conservation education are well known.

So congratulations, Don Gasper! There is no one more worthy of this recognition.

I, for one, am honored to call Don Gasper my friend."

Insect Taxa Team Leaders -

Laura T. Miller, Taxonomic Entomologist/Museum Curator, Plant Industries Division, WV Department of Agriculture, Charleston

Laura Miller is the Taxonomic Entomologist for the West Virginia Department of Agriculture. She has served in this position for eleven years. Prior to that, she worked as the Agricultural Survey Entomologist for eight years. She got her Bachelor's Degree in Biology at the National University of Mexico (UNAM) and a Master of Science degree at Marshall University. As an entomologist, she has specialized in the study of *Tingidae*, commonly called Lace Bugs. She lectures about insects for the Master Naturalist program and for other naturalist groups.

From Laura Miller on website -

> "Froeschner, R.C. 1991, New insect species named after me, the Lace Bug*, Acalypta laurae,* (Heteroptera: Tingidae)."

Activities and Societies: Entomological Society of America, Entomological Society of Washington, American Entomological Society, International Heteropterists Society, Michigan Entomological Society, Maine Entomological Society, West Virginia Entomological Society, Center for Systematic Entomology, Entomology Collections Network.

Susan Olcott, WV DNR Wildlife Diversity Biologist, WV Odonata Atlas Project Leader

Susan Olcott has been a WV DNR biologist since 1995 with the Wildlife Diversity Unit. She earned wildlife management degrees from the University of Maine (B.S.) and Frostburg State University (M.S.). Her work includes surveys for a variety of taxa including birds, dragonflies and damselflies, moths and butterflies, mammals, and plants; education work with school and civic groups; writing articles; and helping citizens with wildlife problems and questions. She was project leader for the WV Dragonfly and Damselfly Atlas, is currently a regional coordinator for the WV Breeding Birds Atlas, and is heading up the WV Butterfly Atlas. She lives in southern Monongalia County.

Harry W. Godwin, U.S. Department of Agriculture, Beaver, WV, Lepidoptera

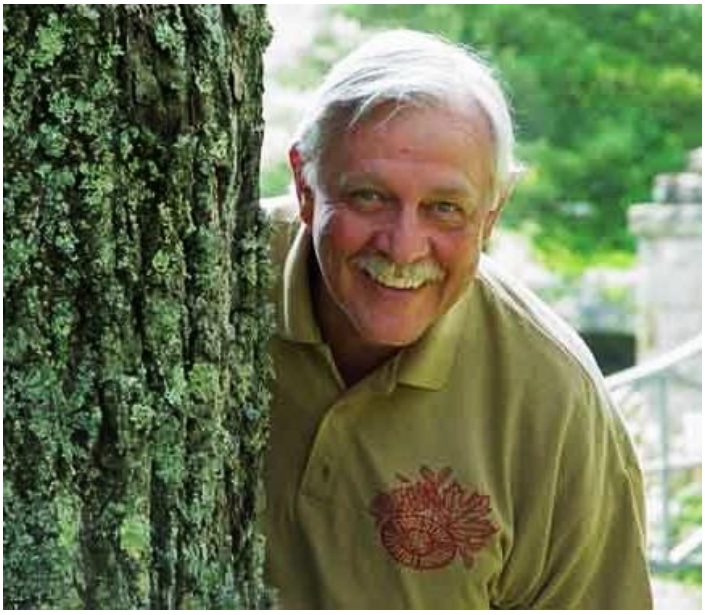
See Harry's autobiographical article at Attachment 10.

Plant/Botany Taxa Team Leaders -

William N. Grafton, WVU College of Agriculture and Forestry

In Memory of Bill Grafton 1938 – 2009

> "Sad news folks, Someone I always introduced as "West Virginia's Greatest Naturalist," Bill Grafton, forester and botanist extraordinaire, passed away unexpectedly last Friday. He was only 70 years old. He was well known all around the state. A friend and mentor of mine for many years, he was a kind and gentle soul, soft spoken but an excellent and passionate educator. Bill worked for the WVU Extension Service and was very active with the WV Native Plant Society, including as its long-time newsletter editor. He was instrumental in getting the Master Naturalist program up and running in West Virginia. Thoughts and prayers for his wife Emily and son Daniel."
>
> —Dave Saville



William "Bill" Grafton, 70, of West Virginia Avenue, Morgantown, passed away unexpectedly while at work at WVU on Friday, Sept. 11.

William was born in Lookout, W.Va., on Nov. 20, 1938, son of the late Albert and Esta Nutter Grafton. He served in the U.S. Army from 1961-1963. He graduated from WVU with his Bachelor of Science in wildlife in 1961 and his Master of Science in forestry in 1965.

Bill was an avid environmentalist and was considered an expert on the botany of the Appalachian region. He taught at WVU for 43 years, during which time he impacted the lives of many throughout the state and in the College of Agriculture and Forestry. Bill made major contributions to the state's botanical archives and helped found the WV Master Naturalist program. He was a constant presence at National 4-H Forestry contests, WV Forest Industries Camp and Conservation Camp. He was co-editor of the Checklist and Atlas of the Vascular Flora of West Virginia. He was active in the WV Native Plant Society, Wildlife Society, Forestry Alumni, American Forestry Association and The Nature Conservancy. Bill was inducted into the WV Agriculture and Forestry Hall of Fame and was an honorary member of WVFFA.

In his personal life, Bill was a loving husband, father, brother, uncle and friend. He was known for a wry sense of humor, joyful disposition and steadfast dependability in all aspects. A highly intelligent person, he traveled on five continents during his life and was exploring the world to the end. Known for orchid hunting, Bill was happiest surrounded by nature and friends.

Dr. Donna Ford-Werntz, WVU Herbarium Curator

From West Virginia University:

> Donna Ford-Werntz was born and raised in Cincinnati, Ohio. As a youth she developed an interest in nature, followed by degree work in botany. She was a Biology Assistant Professor and Herbarium Curator at Northeast Missouri (Truman) State University before coming to WVU in 1995. She currently lives in Morgantown with her husband and daughter.

Fungi Taxa Team Leaders – Bill Roody and Donna Mitchell

William C. "Bill" Roody, WVDNR biologist, Wildlife Diversity Program

About the author- William C. Roody is a seasonal biologist with the Wildlife Diversity Program at the WV Division of Natural Resources, a position he has held since 1987. He is author of *Mushrooms of West Virginia and the Central Appalachians.* He is the co-author of *North American Boletes: A Color Guide to the Fleshy Pored Mushrooms* and *Preliminary Checklist of Macrofungi and Myxomycetes of West Virginia*. Bill has won numerous awards for mushroom photography, and his photos have appeared in several mushroom guidebooks. In the year 2000, Bill was the recipient of the North American Mycological Association Award for Contributions to amateur Mycology. He is a Regional Trustee of the North American Mycological Association and frequently lectures at national and regional mycological meetings and mushroom forays. Bill and his wife, Donna Mitchell, live in Barbour County, West Virginia, where together they study and collect mushrooms for science and gastronomy.

Donna Mitchell, WVDNR biologist, Wildlife Resources Section

In addition to her extensive work on mushrooms, Donna conducts rare bird and other rare species surveys, writes for the West Virginia Breeding Bird Atlas II newsletter, has conducted studies on the federally endangered Northern Flying Squirrel, surveyed nesting pairs of bald eagles and peregrine falcons.

Donna and Bill were assisted by John Plischke on the Fungi Taxa Team.

John Plischke, chairman Fungi section, Pennsylvania biological survey

Mr. Plischke is an amateur mycologist who spends most of his free time hunting and photographing mushrooms. He is the walk and foray chairman and past president of the Western Pennsylvania Mushroom Club (http://wpamushroomclub.org/). He has given scores of mushroom lectures and slide presentations, has won over 50 awards for his mushroom photography, and has produced two programs for the North American Mycological Association (NAMA) Educational Series (http://www.namyco.org/). He is now chair of NAMA's Photography Committee and editor of the *Western Pennsylvania Mushroom Club Cookbook*.

Microbes Taxa Team Leader – Harry W. Godwin, USDA entomologist

See Harry's autobiographical article at Attachment 10.

8

The Schedule

The Bio Blitz began for the community at 8:00 a.m. Saturday June 14 and ended at 4:00 p.m. Sunday June 15. However, some scientists worked in the Lake Floyd valley a few days in advance, taking soil samples, exploring the property, preparing for the weekend.

In the week prior, June 6–13

I arrived one week ahead of time with a "To Do" list numbering hundreds of items. After dashing about for a couple days I realized I was in trouble getting ready for this thing and all the people arriving. As has happened many times before, my extremely capable cousins, Anita and Judy Burns, grabbed a big chunk of my preparations and with hardly a word got it all done quickly, once again rescuing me from disaster. We had to have signs all over the property at the road, showing the boundaries of the 16 terrestrial, and four lake zones. Anita not only produced all this signage quickly, but it was beautifully done and made the event understandable at a glance.

A logo was designed by Keith Parker. The logo included a bird, a mammal, an amphibian and a fish.

There were some costs to the Lake Floyd Club for the Bio Blitz, so an attractive lime green Lake Floyd Bio Blitz T-shirt was designed by Jani at Acorn Graphics in Fairmont and sold prior to and during Bio Blitz. Enough shirts were purchased to pay for the event. Extra T shirts were given to our scientists and other experts in appreciation.

Friday, June 13

Friday was a busy day, gathering loaned cages, traps, and other equipment at Bio Blitz Central, the clubhouse. The scientists/experts began to arrive on Friday, others on Saturday or Sunday. Many of them were on tight schedules because mid-June was high season for their own field surveys. Still they gave generously to this project, several making long drives through the mountains to attend.

6:00 p.m. Welcome and reception at clubhouse

Friday Reception. The clubhouse ballroom was filled with colorful displays on Taxa Tables organized by mammals, birds, reptiles, etc. Much of this material was donated by WVDNR Wildlife Resources as part of their public education program.

We had a large, curious crowd. Two documentaries featuring Dr. Edward O. Wilson, *Darwin's Natural Heir* and *Biodiversity vs. Extinction*, were shown in the card room. The just-released documentary *Darwin's Natural Heir* was granted to our use by the filmmaker himself, Neil Patterson, at its premier screening in Washington, D.C. A copy was sent from Windfall Films in London at no charge to Lake Floyd Bio Blitz.

From Neil Patterson, filmmaker:

"Dear David,

With a copy of this note, I'm asking my colleague David Dugan to make sure you receive a copy of Darwin's Natural Heir (the 63-minute version of our Wilson TV show) in time for you to show it to participants at your bioblitz on June 13, 14, and 15.

Ed and the rest of us at the E.O. Wilson Biodiversity Foundation applaud your work and hope that everyone there has a happy, inspiring, productive time searching the world of Lake Floyd to discover its creatures.

Best, Neil"

Saturday, June 14

Dawn – Taxa Teams and Zone Leaders began to survey at their discretion.

7:45 a.m. Check-in tables at picnic area were staffed beginning at 7:45 a.m.

8:00 a.m. Lake Floyd Bio Blitz begins.

A lot of fast explaining was going on, as many volunteers arrived ready to work and needed to learn what to do.

Bio Blitz Central came alive with a big crowd, the Lake Floyd Zoo and Aquarium began to grow, nature interpreters, Granny Rhubarb Barbara Seels, the Snake Man Roy Moose, Thunder the Bald Eagle with handler Michael Book and Heather Tokas-Ness with butterflies all arrived and set up their presentation areas. Taxa Teams formed and went out into the property. Semi-planned chaos ensued.

Noon to 1:00 p.m. We had a rain downpour but on a hot day everything dried quickly.

In the afternoon many people were out hiking, exploring the hillsides with experts, which was our goal. We had many children with white butterfly nets whirling in circles. The counters at the recording tables had reference books to help with identifications, but even so plant species began to pile up. The Bio Blitz scoreboard was updated every few minutes as more species came in. The water turtle traps were retrieved by the Reptile Taxa Team, turtles were recorded and taken to the Lake Floyd Zoo. Plant/ Botany Taxa Team went on a long-hike survey through all the South Zones. Two Fungi Taxa Team hikes went out.

Annual meeting of the West Virginia Native Plant Society in the clubhouse.

6:00 p.m. Buffet covered dish dinner was held at the clubhouse to thank scientists for their participation. Long tables filled with food, including Oyster Mushrooms collected that day, and a big double- sided Lake Floyd Club Bio Blitz Zones Map hung from the ceiling overhead. Another rain downpour during dinner.

Evening – Bat echo location equipment used in clubhouse parking lot, Mammal Taxa Team.

10:30 p.m. All boats should begin to come in, off the Lake by 11:00 p.m.

10:45 p.m. Picnic/check-in staging area will close.

Some overnight camping accommodations in the clubhouse.

Sunday, June 15

Dawn – Taxa Teams and Zone Leaders began survey at their discretion.

6:00 a.m. Bird Taxa Team went out from clubhouse for major 4 ½ hour hike through all North Zones to the Golf Course.

7:45 a.m. Check-in tables at picnic area were staffed beginning at 7:45 a.m. Plant and animal specimens will be brought in and recorded and digital photographs also permitted.

Noon to 1:00 p.m. Many participants changed Taxa Teams, and new participants assigned.

4:00 p.m. Lake Floyd Bio Blitz ends. Collecting was stopped and all teams return to picnic/check-in area. Totals of species surveyed put on scoreboard and announced, in Mammals, Birds, Reptiles, Amphibians, Fish, and Crustaceans/Aquatic Invertebrates, but not Insects, Fungi, Plants or Microbes, just too many of them.

Sunday evening after 4:00 p.m. The Lake Floyd Zoo was disassembled, all animals returned to where they were found. Box turtles were taken back to their habitats by the adults and children who brought them, fish were released at the boat dock, and even the miscreant opossum was returned to his home in South Zone 14.

Days After

Several experts saw species, especially Birds, as they were leaving Lake Floyd Sunday and e mailed us with those sightings to add to the count.

Broad-winged Hawk seen while leaving Lake Floyd. Courtesy Joey Herron.

9

The Results by Taxa

Mammals

We did not have a professional mammal expert, so Brad Hickman, a Lake Floyd Club member with a degree in biology from West Virginia University, an avid birdwatcher who had explored the wooded hillsides for years, very ably became our Mammal Taxa Leader. Forty-two Sherman small mammal traps were kindly loaned to us by WVDNR. We baited them with peanut butter stuck to the trap ceilings. On Friday afternoon and evening we placed them in three different zones. One string of traps was set in a loop on the hillside behind Brad's house (Lot # 6) in lower North Zone 2. We chose lower South Zone 14 behind the Lilly house (Lot # 164) and placed a loop of traps on both sides of a small stream. We set a third string of traps in Golf Course Zone 8, up a small hogback along several hay bales leading to Hole # 5 tee, then across # 3 fairway, down to the pond.


Flickr.com

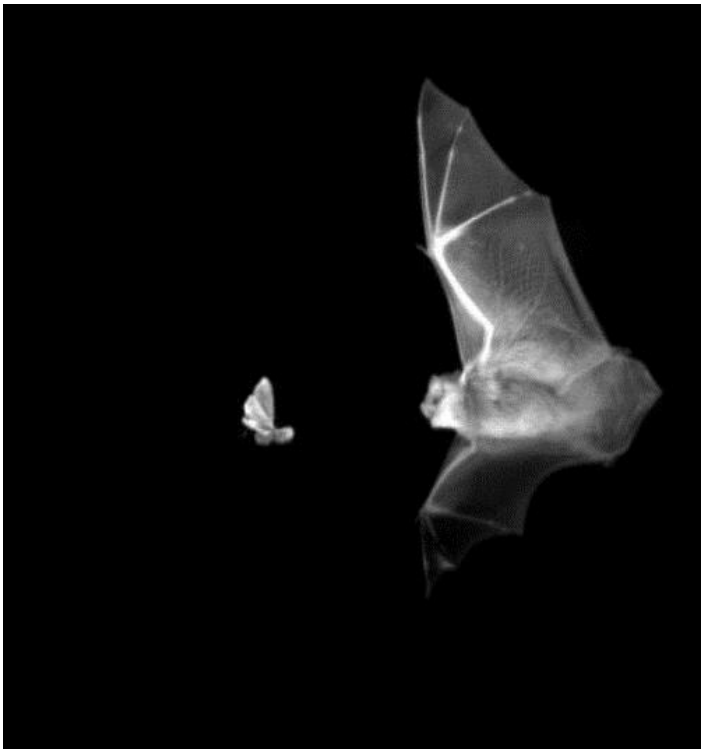
We checked the South Zone 14 traps at dawn Saturday morning and found to our surprise that most of the traps had been sprung and thrown all over the hillside. We reset them and suspected a raccoon as the culprit. The North Zone 2 traps did not yield many results, two or three mice when we checked. The South Zone 14 traps, having been tampered with, also yielded only a few more specimens. The Golf Course Zone 8 traps were the most productive. Along the hay bales we caught several mice, a small brown garter snake and a mole.

In the afternoon, Mark Lilly, South Zone 14 team leader, solved the mystery of the traps vandal, a large opossum was trapped in a HavaHart trap set among our small mammal traps, and brought to the Lake Floyd Zoo for incarceration. He/she became the big beast and star attraction of our Mammal Taxa.

Bat Species

Saturday evening after the dinner in the clubhouse our WVDNR bat biologist set up bat echolocation equipment on the corner of the porch by the light post and in the parking lot. No bats anywhere. It finally became dark enough for the automatic night light by the stone boat dock to come on. Within 90 seconds, bats everywhere! As the moths swarmed around the light, the bats swooped through in a feeding frenzy. Bat calls are too high-pitched to be heard by the human ear, but with the echo-locator and hand held microphones, those cheeps and screeches were loud and clear.

> *"David, start by setting the dial at 40KHz, you may need to dial up or down (25-60) to get the majority of the animals. Microphone on top, point toward target, slight upward tilt. Good luck."*
>
> —Jack Wallace, WVDNR



Bat Catching Moth www.sciencedaily.com

Bats capture moths in the dark by bouncing high pitch chirps off the moving moth, the bouncing sound comes back to the large ears and sensitive hairs on the bat's face, locating the moth. The bat then forms a concave with its two delicate-membrane wings, which are attached to elongated finger bones. The moth hits the concave wings and is knocked into the bat's mouth. All this happens at very high speed in fractions of a second. Moths and bats in aerial life-or-death struggles, right by the clubhouse!

What was amazing about hearing the calls, aside from how loud and distinctive, was that the bat calls from different species sounded very differently. We identified three species with three very different calls. As they swooped closer and then farther from the echo-locator, the high pitched chirps or screeches became louder and then more distant.

We could see them in and out of the light from the big nightlight and over the parking lot and picnic area, Zone 4, by the light of the moon. The more we listened to the distinct calls getting closer and louder, and watched them overhead, we could identify them as individuals, and our expert would call out on sight, "OK, that one straight overhead is a Big Brown Bat, that one to the left coming in is a Little Brown Bat. The third might be the Eastern Pipistrelle." I could see them as they screeched, and their calls were very distinct from each other. This batty echo-locating was fascinating, we watched in the parking area and picnic area for close to two hours, then reluctantly shut down operations and went home for sleep.

French Creek Freddie, WV State Wildlife Center. Courtesy WVDNR. Groundhog also known as a woodchuck, whistle-pig.

Gray Squirrel, South Zones. Courtesy Joey Herron.

Mammals				
Order	**Common Name**	**Scientific Name**	**Zone**	**Abundance**
Mammals	Big Brown Bat	*Myotis lucifugis*	4	
	Little Brown Bat	*Eptesicus fuscus*	4	
	Eastern Pipistrelle	*Eptesicus pipistrelle*	*4*	
	Chipmunk, Eastern	*Tamias striatus*	8	
	Deer, Whitetail	*Odocoileus virginianus*	8	
	Domesticated cat	*Felis catus (Scratch)*	4	
	Domesticated dog	*Canus lupus familiariaris (One-Eyed Jack)*	2	
	Goundhog with pups	*Marmota monax*	8	
	Horse, Tennessee Walking	*Equus caballus*	6	
	Humans	*Homo sapiens*	all	
	Mouse 1		8	
	Mouse 2		1	
	Opossum	*Didelphis virginiana*	14	
	Rabbit, Eastern Cottontail	*Sylvilagus floridanus*	8	
	Shrew, Northern short-tailed	*Blarina brevicauda*	3	
	Squirrel, Gray	*Sciurus carolinensis*	8	
	Squirrel, Red	*Tamiasciurus hudsonicus*	1	

[a] Three different echolocation calls on bat sonar at picnic area.

Birds

"Birds are the most vivid expression of life."

—John James Audubon

"Prettier than a redwing blackbird setting on a yellow pumpkin."

—Granny, The Beverley Hillbillies

"Birds are Nature's most eloquent expression of beauty, joy and freedom."

—Frank Chapman, American Museum of Natural History

Birds Taxa Team Leader: Dr. Jay Buckelew, Bethany College

There were three major birding walks during the weekend, two led by Dr. Jay Buckelew, our Bird Taxa expert.

On Saturday afternoon about 4:00 p.m. Dr. Buckelew led a group including Laurel Klein, Diana Barker, Josh Barker, Jacob Saborse, Judy Burns, on a walk along the lake, on the lake road close to the water's

edge. Josh Barker identified a Cerulean Warbler in the top of a pine tree in lower Zone 4, Lot 90. Several species were seen in the pines on the dam spillway, South Zone 16, and a highlight was a flyover by a Great Blue Heron.

Sunday 6/15 Bird Taxa Team hike through North Zones – Dr. Jay Buckelew, Diana Barker, Josh Barker, Judy Burns, Bill Kapphan, Barbara Allison, Laurel Klein, David Powell

On the long Sunday hike, Diana and Josh were both expert birders, and Bill has spent many hours walking and hunting through the Lake Floyd woods North Zones and kept us from getting lost.

Sunrise. Courtesy Steve Goff.

Sunday morning at 6:00 a.m. ("late for birders," Jay told us) we set off from the clubhouse on what became a truly memorable experience, and opened my eyes to the fact that bird watching is about far more than just birds, when led by such an experienced expert. We walked down the lake road, then followed the stream at the Billingsley property (Lot # 21), climbing up into North Zone 2. Hiking up that stream, Dr. Buckelew could look ahead, tell us what the trees and shrubs and other plants were, then predict the birds we would see and hear. It was uncanny, we would quickly see the birds he predicted. This happened every few feet we climbed. I had not realized that plant species change so much based on such slight altitudinal changes. We learned that bird watching was as much about botany and ecology as about birds. Bird watching with an expert can teach anyone all about the forest, about much more than just the birds themselves.

Pileated Woodpecker. Courtesy Alan Dyck, USDA Forest Service.

When we reached the ridge top, in North Zone 1 and 2, we soon came upon two pair of Pileated Woodpeckers, male and female vs. male and female, in a loud and angry battle over territory. It was a thrill to watch them chasing each other from tree top to tree top, trying to settle which pair would take over that territory. This spectacular display lasted nearly 30 minutes. We then hiked on through the North Zones 1-6, and soon began to rely on Josh Barker's keen eyesight. Josh was able to quickly spot birds that the rest of us could see only with binoculars.

Dr. Buckelew was able to identify birds by their calls. He could describe the slight variations between the calling warblers we heard, and was particularly glad to identify a rare Kentucky Warbler that he did not expect to find at Lake Floyd. Dr. Buckelew told us with some study it was not that difficult for anyone to learn bird calls. We heard the unmistakable call of a cuckoo.

Black-Billed Cuckoo. www.audubon.org

As we proceeded farther along the ridge we gradually climbed higher. Bill Kapphan spends a lot of time in the Lake Floyd woods, and had a GPS locator on this hike. In North Zone 6, approximately behind the Ron and Jean Turner house (Lot # N) Bill told us we had reached the highest point on the Lake Floyd property, at about 1300 feet**.** As we approached this remote location Dr. Buckelew predicted we would see several colorful Eastern songbirds, including the Baltimore Oriole. First we found its hanging nest far out on the end of a thin branch, then Josh spotted the black and orange Baltimore Oriole coming to and

going from the nest. Dr. Buckelew predicted a Scarlett Tanager, sure enough we quickly saw that brilliant black and deep red songbird overhead.

Baltimore Oriole. John James Audubon

American Redstart. www.birdspix.com J. Schwarz

The Brooks Bird Club in Wheeling, founded in 1932, is one of the oldest and most respected in the USA. Dr. Buckelew has been the editor of its journal "The Redstart" for many years, and sure enough we did see an American Redstart directly above us in a sapling at that high point in our hike. By then it was late morning and the sun was almost directly overhead. We were very quiet and the Redstart soon spread it tail feathers broadly. Looking straight up, the sun streaming through those tail feathers illuminated colors, almost like looking at a colored glass window in a church, or into a kaleidoscope. For me, that sun-lit Redstart was one of the most memorable moments in the entire weekend.

We continued on out the ridge, until we thought we were in Golf Course Zone 7. We ended the Bird Taxa hike climbing and sliding down a steep damp fern-covered hillside until we popped out of the bushes half way up Hole # 1 fairway, much to the surprise of four golfers ready to tee off at # 1 tee. Our 6:00 a.m. hike down the Lake road, and then following the ridge top the entire length of the lake through six zones, had taken about 4 ½ unforgettable hours.

Laurel Klein told me, "These walks with Dr. Buckelew got me started in birding. I have made several trips to Lake Erie since then to see migrant songbirds which are easy to approach there because they are so exhausted from flying across the lake. Locally I attend presentations on birding by Joey Herron at Pricketts Fort in Fairmont, and his Saw-whet Owl Banding Program at Valley Falls State Park in October/ early November."

South Zones Bird Taxa Leader: Joey Herron

While Dr. Buckelew led his birding group through the North Zones, Joey Herron made a solo birding trek through the South Zones, photographing birds and plants.

Yellow Throated Warbler from flickr.com.

Same Bird? South Zones. Courtesy Joey Herron

"Signature Bird." After spending two full days identifying the birds of the Lake Floyd valley, Dr. Buckelew suggested that Lake Floyd Club designate the Yellow Throated Warbler, *Dendroica dominica*, as a "signature species" of Lake Floyd, just as the Redstart symbolizes the Brooks Bird Club. Dr. Buckelew said because of its attractive coloration, beautiful song, relative rarity, and its thriving numbers at Lake Floyd, this bird would be a good "signature species" for Lake Floyd.

South Zones. Courtesy Joey Herron.

Birds				
Class	**Common Name**	**Scientific Name**	**Zone**	**Abundance**
Accipitriformes	Broad-winged Hawk	*Buteo platytypterus*		
	Red-tailed Hawk	*Buteo jamaicensis*		
	Turkey Vulture	*Cathartes aura*		
Anseriformes	Mallard	*Anas platyrhynchos*	L1	
Apodiformes	Ruby-throated Hummingbird	*Archilochus colubris*		
Columbiformes	Mourning Dove	*Zenaida macroura*		
Coraciformes	Belted Kingfisher	*Ceryle alcyon*		
Cuculiformes	Black-billed Cuckoo	*Coccyzus erythropthalmus*	5	
Galliformes	Wild Turkey with poults[a]		6	
	Wild Turkey-male	*Meleagris gallopavo*	10	
Passeriformes	Acadian Flycatcher	*Empidonax virescens*		
	American Crow	*Corvus corax*		
	American Goldfinch	*Carduelis tristis*		
	American Redstart[b]	*Setophaga ruticilla*	4, 6	
	American Robin	*Turdus migratorius*	4	
	Baltimore Oriole	*Icterus galbula*	6	
	Black & White Warbler	*Mniotilta varia*		
	Blue Jay	*Cyanocitta cristata*	13	
	Blue-gray Gnatcatcher	*Polioptila caerulea*		
	Brown-headed Cowbird	*Molothrus ater*		
	Carolina Chickadee	*Poecile carolinensis*		
	Carolina Wren	*Thryothorus ludovicianus*		
	Cedar Waxwing Warbler	*Bombycilla cedrorum*		
	Cerulean Warbler	*Dendroica cerulean*	4	
	Chimney Swift	*Chaetura pelagica*		
	Chipping Sparrow	*Spizella passerina*		
	Common Grackle	*Quiscalus quiscula*		
	Common Raven[c]	*Corvus corax*		
	Common Yellowthroat	*Geothlypis trichas*		
	Eastern Phoebe	*Sayornis phoebe*		
	Eastern Towhee	*Pipilo erythrophthalmus*	4	
	Eastern Wood Pewee	*Contopus virens*		
	European Starling	*Sturnus vulgaris*	13	
	Gray Catbird	*Dumetella carolinensis*		
	Great Crested Flycatcher	*Myiarchus crinitus*		
	Hooded Warbler	*Wilsonia citrina*	4	

	House (English) Sparrow	*Passer domesticus*	
	House Finch	*Carpodacus mexicanus*	
	Indigo Bunting	*Passerina cyanea*	
	Kentucky Warbler[d]	*Oporornis formosus*	
	Louisianan Waterthrush	*Seierus motacilla*	
	Northern Cardinal	*Cardinalis cardinalis*	10
	Northern Mockingbird	*Mimidae family*	4
	Northern Parula Warbler	*Parula americana*	
	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	
	Orchard Oriole	*Icterus spurius*	4
	Ovenbird	*Seiurus aurocapillus*	5
	Red-eyed Vireo	*Vireo olivaceus*	
	Red-winged Blackbird	*Agelaius phoeniceus*	L3, L4
	Scarlet Tanager	*Piranga olivacea*	4,6
	Song Sparrow	*Melospiza melodia*	
	Tufted Titmouse	*Braeolophus bicolor*	
	Warbling Vireo	*Vireo gilvus*	
	White-breasted Nuthatch	*Sitta carolinesis*	
	Winter Wren	*Troglodytes troglodytes*	
	Wood Thrush	*Hylocichia mustelina*	4
	Yellow Throated Vireo[e]	*Vireo flavifrons*	6
	Yellow Warbler	*Dendroica petechio*	
	Yellow-throated Warbler[f]	*Dendroica dominica*	6
Pelicaniformes	Great Blue Heron[g]	*Ardea herodias*	4
Piciformes	Downy Woodpecker	*Picoides pubescens*	
	Hairy Woodpecker	*Picoides villostus*	
	Northern Flicker	*Colaptes auratus*	
	Pileated Woodpecker[h]	*Dryocopus pileatus*	3
	Red-Bellied Woodpecker	*Melanepes carolinus*	4

[a] Poults are young turkeys.
[b] Sunlight streaming through the outstretched red-orange tail feathers in a tree straight overhead was one highlight of the Sunday hike.
[c] South zones facing north.
[d] Possibly most rare bird species found at Lake Floyd.
[e] At 1262 ft., one of the highest points at Lake Floyd.
[f] Dr. Buckelew suggested because of its attractive coloration, beautiful song, relative rarity, and its thriving numbers at Lake Floyd, this bird would be a good “signature species” for the Lake Floyd community.
[g] Flyover.
[h] Two pairs squabbling over territory.

Reptiles and Amphibians

Reptiles: Turtles, Snakes, Lizards
Amphibians: Toads, Frogs, Salamanders

Reptiles

> *"Turtles are one of three groups of reptiles that occur in West Virginia. Other reptiles include lizards and snakes. … Turtles are among the oldest land vertebrates and fossil turtles over 200 million years old have been discovered. … The age of most turtles can be determined by counting the growth-rings on the scales of the carapace. Most aquatic species live 30 to 35 years, but terrestrial species may reach 100 years or more. … Thirteen species of turtles are known to occur in West Virginia. "*
>
> from *Turtles and Lizards of West Virginia* by Thomas K. Pauley and Michael Seidel

Reptiles and Amphibians Taxa Team Leader: Dr. Thomas Pauley, Marshall University

Eastern Snapping Turtle. Lake Zone 2, South side. Summer 2014. Courtesy Lisa Black.

Water Turtles. Friday evening Dr. Tom Pauley and I set five turtle traps, three in Lake Zone Three, and two in Lake Zone Four. The traps were made of wooden hoops covered by cord netting. The entrances on each end were cord funnels which allowed the turtles in, but not out. They were staked in shallows with part of the trap above the water so the turtles would not drown. I thought, how will they find the

bait so quickly, we only have about 24 hours, but when Dr. Pauley opened a can of sardines, threw them in the trap, and the sardine oil spread quickly and broadly on the surface of the water, it was easy to see that turtles would come hungry and fast to investigate all that fish oil. Sure enough when we checked the next day, all those traps had from three to five turtles each, of various species.

The Reptile Taxa Team, Dr. Pauley, Master Naturalist Rebecca Eneix Chong, David Powell and several children brought the water turtles to shore behind the tennis court and loaded them into buckets and barrels for the Lake Floyd Zoo.

Dr. Pauley explained that all day the Lake's water turtles rested, floating in deep water, or at water's edge below steep or inaccessible banks, deep in thick aquatic vegetation or in other safe hiding places, mostly near the South side of the Lake. Only after dark do all these various water turtles swim *en masse* to the shallows on the North side where they more easily catch fish, minnows, tadpoles, snakes and other food in the shallow water. At dawn all these turtles swim back to float in deeper water or to the safety of the South bank.

Water Turtle safe havens. Lake Zone 4. Courtesy Teresa Bragg-Carter.

Dr. Pauley told us that the snapping turtle is amazingly adaptable, it thrives equally well living in the most sluggish, polluted water, near a city, in a farm pond or in high-altitude pristine clear mountain streams. If it needs to change habitats, it can simply walk away overland and find a different body of water.

I held the largest snapper by its tail but I could see Dr. Pauley was not thrilled by that method, it could hurt the big turtle, so instead I held it by the back of the shell. I was in no danger of being bitten, but did get a few light scratches on my wrists from its hind claws. These turtle tracks became my badge of honor wrestling with wild beasts at the Lake Floyd Bio Blitz.

In the traps were a Midland Painted Turtle and an Eastern Painted Turtle. Dr. Pauley showed us how to distinguish the two species by the different patterns of scale-like plates ("scutes") on their shells

("carapace"). Since Lake Floyd is west of the Eastern Continental Divide in the Ohio River watershed, it is highly likely the Eastern Painted Turtle was somebody's pet released in Lake Floyd.

Dr. Pauley let me in on a trade secret. "You know Dave, at the end of a long day on the water, when we are still in the boat, miles away from our car and dinner, those sardines begin to look pretty good to us. They make a handy end-of-day snack for biologists. But we got so tired of the plain sardines that we decided to get some spiced versions, other flavors, anything but those same plain sardines. It did not work. The turtles only liked the straight plain sardines. They would not go for the spiced versions, we got empty traps. So glumly, we had to give in to the turtles, we went back to the plain sardines, their favorites."

Eastern Box Turtle. Dr. Pauley mentioned that Doddridge County and Harrison County were hot spots in West Virginia for Eastern Box Turtles, which supported my experience finding speed racers for the Lake Floyd Turtle Derbies years ago.

Eastern Box Turtles. Two Males in a Roll-over Rumble. Courtesy Aaron C. Gooley, Wildlife Biologist.

Snakes. "Some cool facts about snakes" sent to Bio Blitz from the Nature Center at Cacapon Resort State Park. Thank you Kelley Smith, Naturalist, www.wvstateparks.com.

There are 22 kinds of snakes that live in West Virginia. Snakes are carnivorous, there are no vegetarian snakes. There are only two venomous snakes in West Virginia, the Northern Copperhead and the Timber Rattlesnake. Baby Copperheads have green- tipped tails. When a snake sticks out its tongue, it is tasting the air. Many other snakes have patterns on their backs confusing them with Copperheads. Eastern Hognose Snakes can play dead to ward off predators.

Lizards. There are only six species of lizards in West Virginia: Eastern Fence Lizard, Eastern Six-Lined Racerunner, Little Brown Skink, Common Five-Lined Skink, Broad-headed Skink, Northern Coal Skink.

Black Rat Snake aka Black Snake. snaketype.com

Eastern Hognose Snake. Virginia herpetological society

Blacksnake. A couple days before Bio Blitz, at the water pump in Golf Course Zone 8, Brad Hickman and I caught a blacksnake about five feet long. (He was a little angry but got over it.) I took him to the clubhouse to begin the Lake Floyd Zoo. I placed him in a large rectangular cage of wire so he was very visible and placed it close to the entrance sign-in table. Knowing that snakes are brilliant escape artists, I latched the cage door and then taped the edges of that door tightly with electrician tape. The next day we still had our big blacksnake and the next day too. He was absolutely tireless in raising up and tap tap tapping his nose around that taped door trying to figure out, a way out. On Friday, I had some box turtles, knowing that they would not bother the snake I opened the door and placed them inside. I pressed the tape down around the door but did not re-tape it. The tape was still there but it had been compromised, that is all he needed. Minutes before our welcoming reception Friday evening, a little blond girl found me, "Did you know your blacksnake was gone?" "No, I did not." was all I could reply.

I quickly looked through all the shrubbery near the sign-in table then looked across the road to shrubbery in the Jack Anderson (Lot # 61) and Jim Allen (Lot #60) lawns. "Well, have a happy life," I thought, because I had to get in to the reception. I saw no need to advertise that a 5-foot blacksnake had escaped at the clubhouse minutes before a very large welcoming reception of maybe 200 people. Blacksnakes are fine animals and do a lot of good in the world.

Happily the next day someone brought in another blacksnake, I re-taped the cage and the Lake Floyd Zoo still had this beautiful creature for the big Saturday event.

Reptiles				
Order	**Common Name**	**Scientific Name**	**Zone**	**Abundance**
Snakes	Black Rat Snake	*Elaphe obsoleta*	8	
	Common Garter Snake	*Thamnophis sirtalis*	8	

	Northern Water Snake	*Nerodia sipedon*	L2
Turtles	Eastern Box Turtle	*Terrapene carolina carolina*	14,8,3
	Eastern Painted Turtle[a]	*Chrysemys picta picta*	L4
	Eastern Snapping Turtle	*Chelydra serpentina serpentina*	L3,L4
	Midland Painted Turtle	*Chrysemys picta marginata*	L3,L4
	Stinkpot Mud Turtle	*Sternotherus odoratus*	L2, L4

[a] Probably a released family pet.

Amphibians

All amphibians breathe through their skin. Nearly one third of the world's more than 6,000 amphibian species are in danger of extinction.

Salamanders. Salamanders are important for medical research, as they are the only vertebrates that can regenerate lost limbs. They can even regenerate eye and brain tissue. The Smithsonian Institution has a new salamander conservation lab in their Reptile Discovery Center. *Smithsonian Zoogoer,* June 2012.

In the Appalachians, "the plethodont salamanders had their origin, the only family of vertebrates to arise in these ancient hills." *The Appalachians* by West Virginia naturalist Maurice Brooks.

Millions of years ago, Diploceraspis, a prehistoric amphibian with a boomerang head, Greererpeton, a fish that crawled onto land, and 3-foot long Proterogyrinus, an air-breathing amphibian predator, all lived in West Virginia. www.dinosaurs.about.com.

The Appalachian Mountains remain the world's hotspot for salamanders. Appalachia is home to 77 salamander species, more than anywhere else in the world. Between 1,000 and 4,000 salamanders can live in an acre of Appalachian forest. *Smithsonian Zoogoer,* June 2012.

At Lake Floyd, feeder streams in the North Zones, Golf Course Zones and South Zones contain many salamanders. They also can be found under rotting logs and in moist leaf mold away from streams.

From Joe Greathouse:

> "For the salamander hike, from what I remember from back then, we went into the forest on the right side of the lake up a small first order stream behind the tennis courts (Thorniley Lot #90, North Zone 4) After looking at Google Earth, it would have been approximately near the coordinates of: 17 542137 E, 4348518 N. I enjoyed speaking with Dr. Pauley there as he and I have been colleagues several times in the past, and events like the BioBlitz enabled me to see him there. I also enjoyed the insect surveys that were conducted. If I can be of any further help, please let me know."

Eastern Redbacked Salamander (above and left). Virginia Herpetological Society.

Northern Dusky Salamander with eggs. Karen C. Rice, USGS Amphibian Research and Monitoring.

Northern Slimy Salamander. Todd Pierson. www.discoverlife.com

Northern Two-Lined Salamander. www.fordham.edu

Seal Salamander. www.ohio.edu

Frogs and Toads. A group of frogs is called an army. A group of toads is a knot. Frogs and toads lay their eggs in water, frogs in a ball of eggs, toads in a string of eggs. Toads live on land, in cool damp places, such as a shaded yard or garden, frogs prefer ponds and other still water. Toads hop or walk, frogs jump. Frogs and toads use the inside of their eyes to push food down their throats, so they blink while they swallow. Matt Evans, Smithsonian National Zoo.

The spring peeper is West Virginia's most common frog. WVDNR Watchable Wildlife Program.

Spring Peeper. Virginia Herpetological Society.

Amphibians				
Class	**Common Name**	**Scientific Name**	**Zone**	**Abundance**
Anura	American Toad	*Bufo americanus*	3	
	Bullfrog	*Rana catesbeinna*	L4	
	Northern Green Frog	*Rana clamitans*	L4	
Caudata	E Red Backed Salamander	*Plethodon cinereus*	4	
	Northern Dusky Salamander	*Desmognathus fuscus*	4	
	Northern Slimy Salamander	*Plethodon glutinosus*	4	
	Northern Two-Lined Salamander	*Euryccea bislineata*	4	
	Seal Salamander	*Desmognathus monticola*	4	

Fish

For years, Lake Floyd Club traditionally stocked fish in early April, then closed fishing for two weeks. Species stocked were large-mouth bass, rainbow trout, catfish and other game fish. One year muskellunge were introduced.

Grass Carp/ White Amur

Fish Taxa Expert. We had a professional field biologist coming as our Fish Taxa Team Leader, who unfortunately had to drop out on short notice because of a family matter. Without a fish expert on Saturday, and with so many other Taxa Teams hiking all over the property at once, our fish data results were comparatively slight.

We did have several fishermen in all four Lake Zones, many of whom probably would have been fishing on the weekend whether or not we had a Bio Blitz. They brought fish to be recorded.

On Sunday Don Gasper, a senior fisheries biologist from WVDNR came to the clubhouse. He brought a large seine net and waders, and Don took in minnows, crustaceans and aquatic insects making several passes through the shallows near the boat dock in Lake Zone 2.

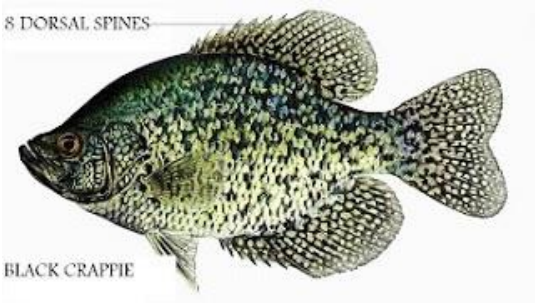
Don recorded water quality at 1:00 p.m. June 15, 2008 as:

Alkalinity 35 ppms
PH 9.2
Conductivity 96

Additionally Boy Scouts of America Troop 34, Ethan Carder, Larry Carder, Matthew Vest, Eric Vest, Jesse Myers, Becky Myers, Josh Pitcock, Alex Pitcock, John Pitcock, Belinda Vest, Trey Allison, and Jerry and Barbara Allison, contributed several fish species to our Lake Floyd Aquarium.

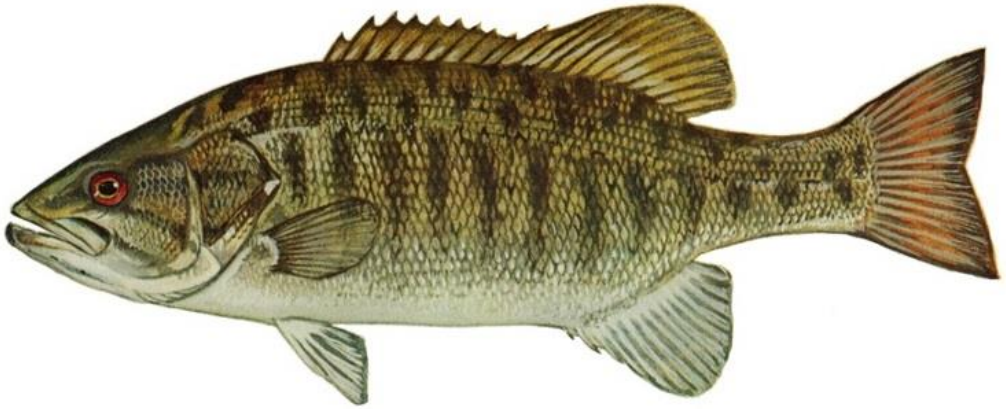
We did not have around-the-clock fishing, for safety all boats were asked to be off the Lake by 11:00 p.m. Saturday night.

For many years Lake Floyd held the USA record for Black Crappie. It was mounted and hung in the card room at the club house.



Black Crappie. Pictofly.com

Largemouth Bass (Micropterus salmoides). www.pictofly.com



Smallmouth Bass (Micropterus dolomieu). www.kingstonlakenh.com

Fish				
Order	**Common Name**	**Scientific Name**	**Zone**	**Abundance**
	Largemouth Bass	*Micropterus salmoides*	L4	
	Smallmouth Bass	*Micropterus dolomieu*		
	Grass Carp/White Amur	*Ctendopharyngodon idella*	L4	
	Black Crappie	*Pomoxis nigromaculatus*		
	White Crappie	*Pomoxis annularis*		
	Koi	*Cyprinus carpio haermatopterus*		
	Minnows	*Pimephales notatus*	L2	
Sunfish	Bluegill	*Lepomis macrochirus*	L4	
	Pumpkin Seed	*Lepomis gibbosus*		
	Sunfish	*Centrarchus macropterus*		

Crustaceans and Aquatic Invertebrates

Cambarus bartonii bartonii, AKA crayfish, crawdads, at Lake Floyd we called them crawl-crabs. These little mini freshwater lobsters, are fierce, always angry, and pinch a lot of fingers, but nevertheless are prime game for kids capturing critters in the creeks. They walk forward and swim backward.

Tonya and Jack Daft brought youth from the Buffalo Creek Dream Makers 4H Conservation Club to help with the Sue Olcott Odonata survey. They also brought insect nets and did seine-netting for crustaceans and aquatic invertebrates in Lake Zone 3.

West Virginia and the Central Appalachians are a global “hotspot” for freshwater mussel diversity. Mussels are a good indicator of water quality. The Pink Mucket Pearly Mussel, the James Spinymussel, the Clubshell Mussel, the Fanshell Mussel, the Northern Riffleshell Mussell are federally endangered species found in West Virginia. The Tuberculed-Blossom Pearly Mussel, the White Wartyback, the Orange-footed Pimpleback, and the Ringback probably are extirpated from the state. WVDNR

Tonya and Jack Daft, Family, Friends, Faith and 4-H Forever
Buffalo Creek Dream Makers Conservation Club

Crustaceans and Aquatic Invertebrates				
Class	**Common Name**	**Scientific Name**	**Zone**	**Abundance**
Oligochaeta	Aquatic Worm		L4	
Decapoda	Crayfish	*Cambarus bartonii bartonii*	L4	
	Egg Pouch Aquatic		L4	
	Leech[a]		L4	
	Mollusk shell		L3, L4	
	Mussels		L4	
	Freshwater Snail	*Planorbis*	L4	
	Pond Snail		L4	

[a] On a snapping turtle.

Insects

Insects Taxa Team Leaders: Laura Miller, Taxonomic Entomologist, WV Department of Agriculture
Susan Olcott, Odonata Atlas Project leader, WVDNR
Harry Godwin, USDA entomologist

Laura Miller. After spending part of her day teaching children how to use the big white butterfly nets, Laura found that the best habitat for insect diversity at Lake Floyd was in shoulder high grass and weeds along Halls Run Road in Golf Course Zone 9. Laura brought loads and loads O' bugs to the counting tables. We appreciate Laura's drive up from Charleston and her all day work for the Bio Blitz.

From Laura - "What stayed with me the most was the excitement I felt to be with other scientists from around the State and how the bio-blitz brought us all together with the Lake Floyd community and other citizens, all with the same purpose of learning about nature in such an enjoyable way for all."

Harry Godwin. On Friday 6/13, Harry Godwin and I took about 60 red and blue plastic beer-sized cups into lower North Zone 3 by the clubhouse. These became insect "pitfall" traps, with water poured in. Using a post-hole digger, we dug holes and distributed the plastic cups equally in three areas, a dry area, a damp area and very close to the stream to capture insects from different habitats, marking the traps with florescent orange plastic pin flags. I was surprised how carefully Harry placed the cups, the rims had to fit very tightly in the hole, and the hole above the rim was carefully and smoothly sloped to the rim. I asked about that and Harry told me, "Insects are just as smart as any other animal you are trying to catch, if the trap is not designed correctly, you won't fool an insect into falling into it!" I gained new respect for bugs that day, and the tightly placed traps with carefully smoothed slopes at just the correct angle did capture insects for Bio Blitz.

Lepidoptera. In addition to the amazing information about microbes, on June 15 Harry brought 6 or 8 large glass display cases filled with colorful, beautifully preserved moths and butterflies. The cases were laid out on picnic tables in the pavilion. These cases were only a part of his Lepidoptera collection bigger than any university collection in the mid-Atlantic states.

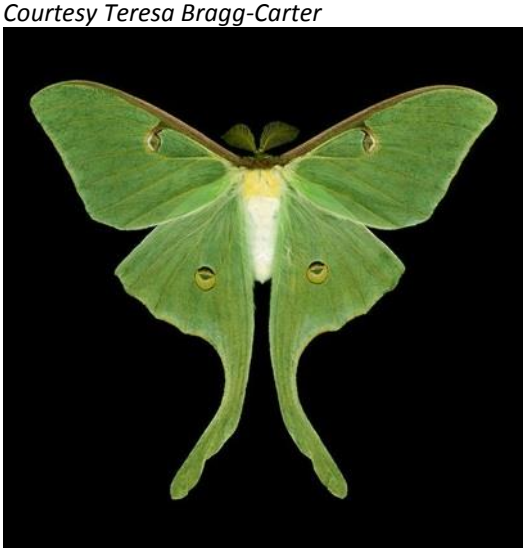
In the display case, Harry showed me a specimen from a species that was bitter-tasting to birds and so was avoided, and a specimen next to it which looked exactly like the first species, but actually was very different, not at all related. It had evolved to mimic the appearance of the first. Then next to that, a third unrelated species which could only "mimic the mimic" since its habitat never came into contact with the habitat of the first species. When these beautiful specimens are displayed side by side by side, it is easy to see how these identical appearances in three different species evolved in the struggle for survival. I regretted not having more time to hear more Lepidoptera stories.

Walking with Harry in the golf course parking lot was interesting, his head would suddenly swivel as he called out a vivid blue butterfly fluttering by that, without Harry, you would never see. For Harry, they were everywhere.

Harry identified 36 Total Lepidoptera, noting the moths were seen during daylight hours.

Photo Harry W. Godwin, courtesy USDA.

Courtesy Teresa Bragg-Carter



Luna Moth. Etsy.com Heidi Young

Butterflies. Heather Tokas-Ness set up a butterfly display in the clubhouse, and collected insects from the plants along the picnic area.

Moths. From Jon "Buck" Lewis, entomologist who brought an ultra violet light moth trap to Bio Blitz:

> "The light trap uses Ultraviolet light, not Infrared light. Ultraviolet most closely resembles moon light to attract cold-blooded insects and other arthropods. Infrared light reflects heat, and is used for mammals, birds and warm-bodied animals. Unfortunately, the moth trap will probably not help to attract bats except for insectivorous bats hunting for insects will be drawn in because they attack the insects attracted to the ultraviolet light. It is not uncommon to hear or see bats swish by above your head, catching insects as they come in. The fewer bats in the area the better for insect collectors.
>
> Sorry, but I prefer not to be close to bat sonar used to lure bats as I am trying to attract their prey. The bats may catch insects which I am trying to collect."

Susan Olcott. WV DNR Wildlife Diversity Biologist Susan Olcott got involved in late February and became invaluable, unfailingly patient answering my many calls and questions through the winter and spring about how to do a big Bio Blitz when everyone had so little experience with field studies. Sue explained detail after detail, loaned us mammal traps, she was the DNR go-to biologist for me during months of planning.

Thanks to Susan Olcott, some Lake Floyd critters, Dragonflies and Damselflies, found a new home in the Smithsonian Institution! Slightly dead, they still made it.

From Sue Olcott, February 26, 2008:

> "Hello Dave- Donna Ford Werntz sent me the info on the bioblitz you are planning at Lake Floyd. I'm the project leader for the WV Odonata Atlas (dragonflies and damselflies). I received permission from the property manager (?) late last summer to survey around Lake Floyd but wasn't able to get it scheduled in. So I'd like to participate if you'd like to get some information on odonates. I can ID many species without catching them, and most others in hand. A few require some close magnification work. I'd like to keep a selection of individuals for vouchers – I'll process them and retain them for the Atlas project. Most will likely be deposited at the Smithsonian, although the DNR will be keeping enough for a reference collection. Let me know if you'd like me on board. Look forward to hearing from you. Best, Sue Olcott"

Sue surveyed for Odonates at Lake Floyd during the week prior to, then led a Bio Blitz Odonata Taxa Team gathering these colorful insects. Susan's know-how and enthusiasm drew a big crowd, kids and adults, chasing colorful dragonflies all day at Bio Blitz.

The Vesper Bluet turned out to be a particularly rare species.

Vesper Bluet. *Courtesy Stephen Cresswell.*

From Odonata Central – The Vesper Bluet is an unusual species in that it is most active in the late evening, as its name implies, and often does not appear over water until sunset.

"Susan Olcott
WV DNR

Rare Odonata at Lake Floyd – Vesper Bluets

> Hi Dave - Attached is the odes spreadsheet from the bioblitz. Remember that picture of a damselfly that one of the residents showed me that got me all excited? Well, I was finally able to confirm it yesterday. You do indeed have Vesper Bluets at Lake Floyd. One of only 5 confirmed sites in WV. They are likely more widespread, but since they fly in the evening, they're under- reported. But a very good find nonetheless. Sue"


Large Lace-Border Moth. rare flickr.com

Insects—Butterflies, Moths				
Order	**Common Name**	**Scientific Name**	**Zone**	**Abundance**
Lepidoptera from Harry Godwin	Spicebush Swallowtail	*Papilio troilus*		Common
	Tiger Swallowtail	*Papilio glaucus*		Abundant
	Tiger Swallowtail – Dark Phase (f)	*Papilio glaucus*		Uncommon
	Hobomok Skipper	*Poanes hobomok*		Uncommon
	Peck's Skipper	*Polites Peckius*		Common
	Northern Cloudy Wing	*Thorybes pylades*		Common
	Viceroy	*Limenitis archippus*		Common
	Red-Spotted Purple	*Limenitis arthemis astyanax*		Common
	Silvery Checkerspot	*Chlosyne nycteis*		Common
	Great Spangled Fritillary	*Speyeria cybete*		Common
	Spring Azure	*Celastrina argiolus*		Very Abundant
	Hackberry	*Asterocampa celtis*		Uncommon
	Harvester	*Feniseca targuinius*		Uncommon
	Little Wood Satyr	*Megisto cymeia*		Very Abundant
	Northern Pearly Eye	*Enodia anthedon*		Common
	Silver-Spotted Skipper	*Epargyreus clarus*		Common
	European Skipper	*Thymelicus lineola*		Abundance
	Least Skiper	*Ancyloxypha numitor*		Abundance
	Two-Spotted Skipper	*Euphyes bimacula*		Uncommon
	Alfalfa Butterfly	*Colius eurytheme*		Common
	Cabbage Butterfly	*Pieris rapae*		Common
	Clouded Sulfur	*Colias philodice*		Uncommon
	Meadow Fritiallary	*Boloria bellona*		Common
	Monarch	*Danaus plexippus*		Uncommon
	Carolina Satyr	*Hermeuptychia sosybius*		Uncommon
	Juvenal's Dusky Wing	*Erynnis juvenalis*		Uncommon
	Anna Tiger Moth	*Grammia anna*		Rare
	Leconte's Haploa	*Haploa lecontei*		Abundant
	Ipsilon Dart	*Agrotis ipsilon*		Rare
	Tothed Somberwing	*Euclidia cuspidea*		Common
	Ferguson's Scallop Shell	*Hydria prunivorata*		Rare
	Large Lace-Border	*Scopula limboundata*		Rare
	The Beggar	*Eubaphe mendica*		Rare
	Bluish Spring Moth	*Lomographa semiclarata*		Common

	Four-Spotted Itame	*Itame coortaria*		Rare
	Dogbane Tiger Moth	*Cycnia tenera*		Rare
	- from Jon “Buck” Lewis -			
	Milkweed Tussock Moth	*Lymantriidae family*		
	Eastern Tent Caterpillar	*Malacosoma americanuum*	1	
	Leconte’s Haploa	*Haploa lecontei*	1	
	Harnessed Moth	*Apantesis phalerata*	1	
	Contracted Datana	*Datana contracta*	1	
	Hebrew Moth	*Polygrammate hebraeicum*	1	
	Pale-Marked Angle	*Macaria signaria*	1	
	Hemlock Looper Moth	*Lambdina fiscellaria*	1	
	Grape Leaffolder Moth	*Desmia funeralis*	1	
	Pure Lichen Moth	*Crambidia pura*	1	
	grass moth	*Crambidae*	3	
	Micro-moth	*Gelechioidea*	3	
	American Lady Caterpillar	*Vanessa virginiensis*		

Insects—Dragonflies, Damselflies

Order	Common Name	Scientific Name	Zone	Abundance
Odonata/ Dragonflies and damselflies	**Ebony Jewelwing**	***Calapteryx maculata***	**1 & 7**	
	Variable Dancer	***Argia fumipennis***	**L1, L2, 7**	
	Double-striped Bluet	***Enallagma basidens***	**7**	
	Fragile Forktail	***Ischnura posita***	**L2**	
	Slender spreadwing	***Lestes rectangularis***[a]	**L1, L2**	
	Eastern Pondhawk	***Erythemis simplicicollis***	**L2**	
	Blue Dasher	***Pachydiplax longipennis***	**L2**	
	Widow Skimmer	***Libellula luctuosa***	**L1**	
	Eastern Forktail	***Ischnura verticallis***	**L1, L2**	
	Common Baskettail	***Epitheca cynosura***	**L1, L2**	
	Prince Baskettail	***Epitheca princeps***	**L1, L2**	
	Dot-tailed Whiteface	***Leucorrhinia intacta***	**L2**	
	Skimming Bluet	***Enallagma geminatum***	**L2**	
	Spiketail species	***Cordulegaster sp.***	**4**	
	Blue-fronted Dancer	***Argia apicalis***	**L2**	
	Spiketail species	***Cordulegaster sp.***	**4**	
	Turquoise Bluet	***Enallagma divigans***	**L1**	
	Vesper Bluet[b]	***Enallagma vesperum***	**L1**	
	Unicorn Clubtail	***Arigomphus villosipes***	**L4**	

	Orange Bluet	***Enallagma signatum***	**L4**
	Spangled Skimmer	***Likellula cyanea***	**L4**
	Common Whitetail	***Plathemis lydra***	**L3, L4**
	Eastern Amberwing	***Perithemis tenera***	**L3**
	Black Saddlebags	***Tramea lacerata***	**L3**
	Spreadwing species	***Lestes sp.***	**8**
	Common Green Darner	***Anax junius***	**L4**
	Damsel Fly Nymph		**L4**
	Epitheca Nymph Dragonfly		**L4**

[a] *Enallagma trarsatum*?
[b] Susan Olcott, WVDNR reports Lake Floyd only one of five sites in WV. More likely widespread but since they fly in the evening they're under reported. But a very good find.

Odonates, dragonflies and damselflies, are ancient insects, the earliest fossils were formed 325 million years ago. They were the first group of animals that developed flight. Their flight mechanisms remain primitive, yet they are among the most acrobatic and fastest flying insects. Susan Olcott, WVDNR.

Insects—Other

Order	Common Name	Scientific Name	Zone	Abundance
Bees, ants, wasps	Bee, Bumble		3	
	Bee, Honey		3	
	Giant English Hornet		L4	
	Sand Hornet		L4	
	Yellow Jackets, Eastern		5	
	Yellow Jackets, Southern		5, 7	
	Wasps	*Ophian sp.*		
Beetles	Riffle		L4	
	Water		7, L4	
	Leaf	*Chrysomelidae family*		
	Large Elm Leaf		7	
	Pennsylvania Leatherwing		7	
	Tiger		7	
	Water Penny			
Bugs!	Lightening	*Pyropyga sp.*		
	Leaf-footed	*Acanthocephala*		
	Seed	*Oedancala dorsalis*		
	Stink	*Mormidae lugens*		
	Tarnished Plant	*Lygus*	9	
	Ambush		7	
	Saw		3	
	Damsel	*Nabicula subcalamptrata*		

	Spittle	*Cercopidae family*	
	Milkweed	*Lygaliis kalmii*	
	Four-lined plant	*Poecilacapsus lineatus*	
Flies/mosquitoes	Deer flies		3
	Marsh fly	*Euthycera arcata*	
	Three spot Horsefly		7
	Scorpion fly		7
	Robber fly	*Assilidae family*	9
	Fruit fly	*Tephnitidae family*	
	Caddis flies & larvae	*Trichptera*	7
Grasshoppers/ crickets	Candy-striped leaf hopper	*Graphocephala sp.*	9
	Katydid	*Tettiigonidae family*	9
Mantises	Praying Mantis	*Mantidae family*	
Other	Earthworm		
Spiders	Orb-shaped Web spiders	*Araneidae (five species)*	1
	Nursery Web Spider	*Pisauridae*	7
	Hammock Spider	*Pilyohyphanter costatus*	7
	Jumping Spider	*Salticidae*	3
	Wolf Spider	*Lycosidae (two species)* *Pardosa hyperborea*	1

Plants/Botany

"There is not one sprig of grass that shoots uninteresting to me, nor anything that moves …."
—Thomas Jefferson, letter to his daughter

"In 1770, George Washington was impressed by a sycamore along the Kanawha River measuring two inches short of forty five feet in circumference."
—Chris Bolgiano, *The Appalachian Forest*

To measure the girth of a tree, wrap a tape around the tree at exactly 4½ feet above ground (called breast height), do it again on the opposite side of the tree and average the two measurements. At Lake Floyd, the Silver Maple in Marie Powell's front yard is 13' 8" in circumference. It is uncertain whether or where there is a bigger tree at Lake Floyd.


Rhododendron maximum. www.prestoncounty.com

About 3,000 species of flowering plants are found in West Virginia. Sixteen species of rhododendron are in North America, 350 species are known in the world. West Virginia's state flower, Rhododendron maximum, can be identified by the green-yellow splashes in the blossom.

Plants/Botany Taxa Team leaders: William N. Grafton, WVU extension, School of Forestry

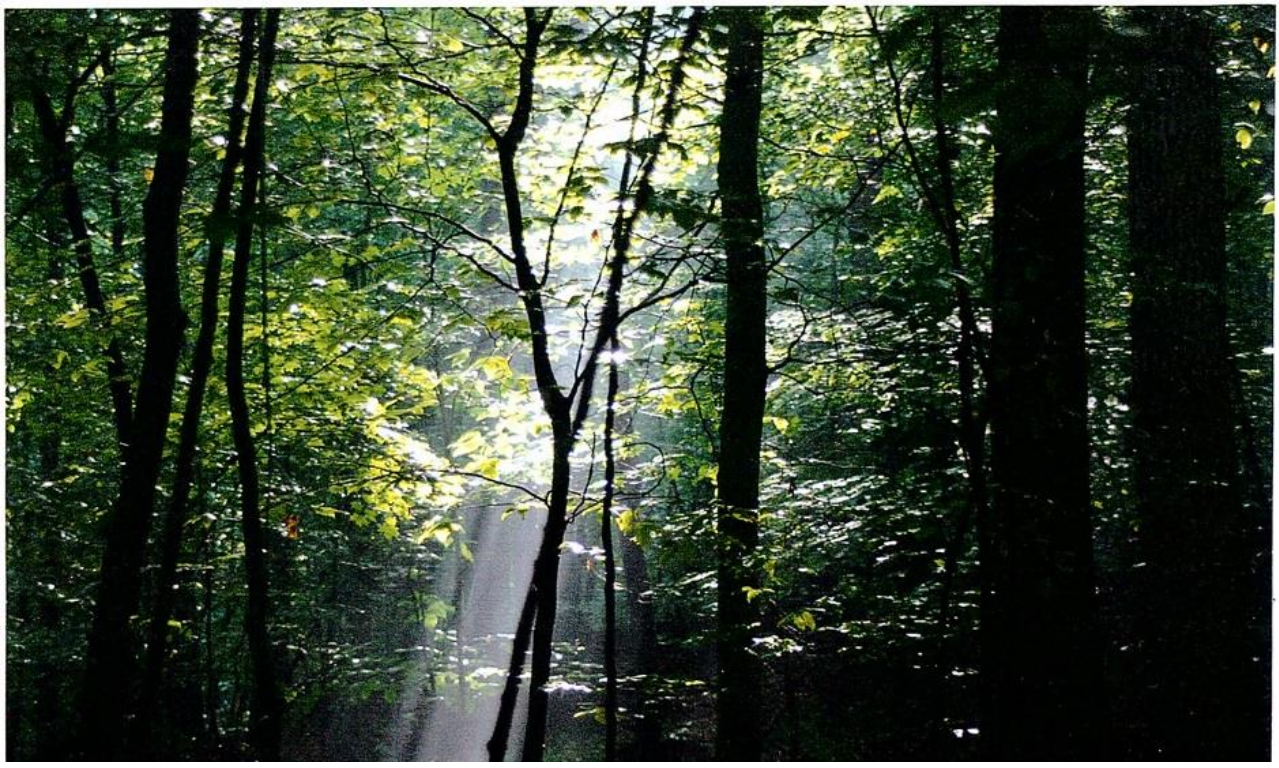
Donna Ford-Werntz, WVU Herbarium Curator

Saturday the upstairs card room was reserved for the annual meeting of the West Virginia Native Plant Society. They somehow managed to hold their meeting and help us identify plants in the midst of all the surrounding hubbub.

> To: WV Native Plant Society from Donna Ford-Werntz, WVU Herbarium curator
> "Hi Board Members,
>
> I've attached a spreadsheet of Harrison Co. flora (731 spp.) that you might want to print out and bring along as a checklist (I'll try to have a few extra copies on hand). Anything not on this list should be collected as a herbarium voucher, since it will be a county record. I've looked at the missing list and, based on abundance and proximity, made a "wish list" of the species we might most expect to find. Just a reminder to come prepared for the field rain or shine. Bring your Flora or other plant books, knife/clippers and plastic bags for collecting, and GPS if you have one. Cheers!"

Bill and Donna led the long Plant/Botany Taxa hike on the old oil-well road through the South Zones Saturday morning and afternoon.

More info - (Ed. Note - I was not able to go on that hike but I heard it was extremely interesting and would appreciate hearing any details of the walk with Bill and Donna through the South Zones. For example who went, what interesting or unusual plants were found.)



South Zones. Courtesy Joey Herron.

The South Zones are north facing, that side of the Lake is cooler because it does not get the morning sun, so we learned that the plants in South Zones were very different from plants in the south-facing North Zones.

Terrestrial Plants

"The creation of a thousand forests is in one acorn."

– Ralph Waldo Emerson

Bill and Donna came to Lake Floyd to collect for the WVU Herbarium. Plants are listed by county and many counties have not been extensively surveyed. For example, poison ivy had not been recorded for Harrison County, so Lake Floyd gave them an opportunity to fill in plant records for Harrison County. Large wooden plant presses were in production all day staffed by Salem Garden Club at a table at Bio Blitz Central, to take specimens back to WVU.

During Bio Blitz they and their team recorded:

Total fern, flower and woody species: 129 (with 30 new Harrison County records)

Mysterious Ginseng. Ginseng was found at Lake Floyd during the Bio Blitz. Ginseng, *Panax quinquefolius*, known in China and Korea for medicinal benefits, is the only plant regulated by the U.S. Fish and Wildlife Service. Ginseng is native to Lake Floyd and throughout the Appalachian mountains. If growing conditions are not suitable, the root does not send up a plant, sometimes for years, so it seems to suddenly appear from nowhere. *Ginseng, the Divine Root,* David A. Taylor.

Moss and Ferns with Hickory Shells. South Zones. Courtesy Joey Herron.

Courtesy Teresa Bragg Carter.

Aquatic Plants

Lillypad blossom (left) Cattails (right). Lake Zone 4. Courtesy Teresa Bragg-Carter.

Courtesy Kevin Seamon. Lake Zone 4.

Laurel Klein and Joy Pardue spent all day Saturday paddling in a canoe through all four Lake Zones, bringing a steady stream of aquatic plants to the picnic pavilion.

Purple Loosestrife, invasive. Lake Zone 1. Courtesy Teresa Bragg Carter.

Plants				
Order	**Common Name**	**Scientific Name**	**Zone**	**Abundance**
	Ajuga		14	
	Allium, Ornamental		2	
	Arburvitae			
	Ash, Green			
	Ash, White		5	
	Ashleaf Spirea			
	Astilbe, garden			
	Azalea			
	Azalea-appleblossom			
	Azalea Klondyke			
	Balloon Flower			
	Baptisia			
	Barberry		1, 5	
	Barberry, Japanese			
	Bedstraw, Great			
	Berginia cordifolia		15	
	Bindweed/Mile A Minute		14	Invasive
	Bishop Weed, green		15	
	Bishop Weed, varigated		15	
	Bleeding Heart		15	
	Blueberry, Pallidum			
	Bluets		7	
	Bonica Rose		15	
	Boxwood, Wintergreen		11,15	
	Brunnera	*Boaginaceae macrophylla*	15	
	Buckeye Tree			
	Buckthorn		7, 15	
	Burdock		15	
	Burning Bush		7	
	Buttercup, Creeping		14	
	Clover, Red, Purple, White		3, 7	
	Cinquefoil		3	
	Chamlean Vine		14	
	Columbine, Nora Barlow		14, 15	
	Coreopsis, thread leaf		15	
	Cotoneaster-coral beauty		15	
	Cherry, Black		1	
	Chestnut, Chinese		4	

	Crabapple		
	Creeping Charlie		
	Croscomia		15
	Dandelion		3, 4
	Dogwood, White Wild		14
	Dogwood		1, 5
	Dewberry, Running		4
	Dianthus		
	Dock		4
	Daffodil, King Alfred		
	Daffodil, Peeping Tom		15
	Daisy fleabane		7
	Cypress Spurge		
	Comfrey, Wild		
	Clematis, Nellie Mosser		15
	Colts Foot		7
	Chickweed, Nodding		7
	Elm		15
	Evening Primrose		15
	Euphorbia		7
	Euronimus		7
	Fern, Sensitive oe Bead	*Onoclea sensibilis*	
	Fern,Christmas	*Polystichun acrostichoides*	4
	Fern, New York	*Thelypteris noveboracensis*	
	Fern, Shield or Wood	*Dryopteris carthusiara*	
	Fern Moss		
	Forget-Me-Nots		
	Forsythia		7
	Ginseng	*Panax quinquefolius*	classified
	Greenbrier		4, 15
	Hawkweed, Field		4
	Hawthorn		5, 15
	Hazelnut, American		
	Heatherbun Cypress		15
	Hemlock		7, 11
	Hickory, Pignut		5
	Hickory, Shagbark		15
	Hibiscus		
	Holly, American		1, 5, 14
	Honeysuckle, artarian		7, 14

	Horse Chestnut		15
	Hosta		7, 15
	Hounds tongue		
	Hydrangea, Climbing		15
	Hydrangea		15
	Indian Hemp		6
	Indian Pipe		
	Indian Tobacco		
	Ironwood		1, 15
	Itea Virginia		15
	Ivy, English		14
	Ivy Ground[a]		14
	Ivy, Poison		4
	Jack-In-The-Pulpit		15
	Japonica, Peris		15
	Japonica Syntax[b]		10
	Juniper		7
	Juniper, Sabina	*Tomisci folia*	15
	Lamb's Ear		15
	Lamium Labiatae[c]		15
	Laurel, Elf Mountain	*Kalonia latifolia*	15
	Laurel, Mountain		
	Liatris spicata		15
	Lenten Rose	*Helebore*	15
	Lettuce, Wild		4
	Lichen, Reindeer	*Cladonia*	
	Lilac		7, 15
	Lillies, Orange Day		3, 15
	Lily of the Valley		15
	Lily Pads		L3
	Lungwort	*Pulmonaria*	
	Magnolia, Umbrella tree		15
	Mallow		15
	Maple, Acer Specatom		1
	Maple, Black		7, 15
	Maple, Norway		4
	Maple, Red		7
	Maple, Soft Silver		1, 5
	May Apple		7
	Milkweed		6
	Moneywort		14

	Mossy Stonecrop		14	
	Multiflora Rose		15	
	Narcissus		4	
	Ninebark		15	
	Oak, Chestnut		15	
	Oak, Pin		7	
	Oak, Red		4, 5, 15	
	Oak, White		1, 7, 15	
	Olive, Autumn		5, 11, 15	Invasive
	Olive, Russian		15	
	Oxalis stricta		3	
	Pachasandra		3, 7	
	Penstemon-Beard Tongue			
	Peony		4, 7, 15	
	Phlox paniculator			
	Pine, Virginia		7, 15	
	Pine, White		1	
	Pokeweed			
	Poplar		4, 14	
	Poplar, Yellow		1, 5	
	Purple Coneflower		15	
	Quaking Aspen		15	
	Ragwort, Golden			
	Ramps			
	Redbud		4, 5, 7	
	Reingold Arborvite		15	
	Rhododendron, Purple		15	
	Rhododendron, White		4, 15	
	Rhododendron Maximum		4	
	Rose of Sharon			
	Rose, Shrub		7	
	Rubis Althea	*Hibiscus syriacus*	15	
	Sand Cherry, purple leaf		15	
	Sassafrass		1, 4, 5, 15	
	Serviceberry		5	
	Solomon Seal		15	
	Sourweed			
	Spirea, Japanese		7, 15	
	Spruce, Alberta		15	
	Spruce, Bird's Nest		7	
	Spruce, Blue		7	

	Spruce, Norway		7
	Squawroot		
	Squawroot	*Conopholis*	
	Stonecrop Sedum[e]		4, 15
	Strawberry, Indian		
	Sumac Tree		4
	Sweet Shrub	*Clethra alnifolia*	15
	Sweet Shrub	*Calycanthus floridus*	15
	Sycamore		1
	Tree of Heaven		
	Trillium, Great Flower		
	Trumpet Vine		15
	Tulip Poplar		15
	Vetch		7
	Vibernum Juddi		15
	Vinca		7, 11
	Violet		
	Virginia Bluebell		15
	Virginia Sweetspire	*Itea virginian*	15
	Walnut, Black		1, 15
	Water-willow (Justica)		16
	Weigela Florida	*Elvera*	15
	White Coneflower		
	Wild Cherry		15
	Wild Strawberry		4, 14
	Willow, Corkscrew		15
	Witch Hazel		15
	Wolf's Bane/Monkwood		

[a] Mint Family.
[b] Japanese Bells.
[c] White Nancy Dead Nettle.
[d] Parasite on oak tree.
[e] Vera Johnson.

Fungi

Fungi Taxa Team Leaders: Bill Roody, WV DNR Wildlife Diversity Program
Donna Mitchell, WV DNR Wildlife Diversity Program

Laetiporus sulphureus. *Courtesy Bill Roody. North Zone 4.*

Trametes versicolor. *Courtesy Bill Roody, North Zone 4.*

Donna Mitchell and Bill Roody arrived mid-day Friday and scouted the Bio Blitz property. They took a hike into Golf Course Zone 8, up the stream behind Hole # 6 Tee.

Then on Saturday, Donna and Bill led a Fungi Taxa Team which included Jana and Bruce Thompson, Al Crum, Judy Burns, Bill Plischke, chairman for the Fungi section of the PA biological survey, on two hikes, North Zone 4 and South Zones 13 & 14.

They returned with an incredible array of fungi of every size, shape and color. The fungi filled four large tables in the clubhouse ballroom, placed on white paper plates which were labeled. Talk about color in nature, who knew fungi could be so spectacular!

The Lake Floyd fungi specimens went to the Davis & Elkins College Herbarium collection, Elkins, WV. There had been very little collecting in Harrison County. 79 species were identified, and 49 were new Harrison County records. One species, *Nectriopsis tremellicola*, had not been previously collected in West Virginia. See Donna's letter below.

From Donna Mitchell, April 4, 2008:

> "Hi David,
> I received your phone message yesterday concerning the Bio-blitz at Lake Floyd. Bill and I would be happy to attend and cover the fungi. Although mid-June is not the optimum time for fungi, if conditions are good, we should find a few things. We are atlasing the fungi of the state by county and we would like to accession the collections in the D & E college herbarium if they are county records. If they aren't county records we could just record the finds. We have done very little collecting in Harrison county (87 species) so this would be a good opportunity for us.
>
> Perhaps one day might suffice for covering the area at that time of the year. Please keep us in the loop.
>
> Donna Mitchell
> WV DNR Wildlife Diversity Program"

Blue Green Wood Stain. Courtesy Bill Roody.

Pinwheel Marasmius. Little Wheel. Courtesy Bill Roody

Comments from Jana Beth Thompson:

> "There were two hikes. First we went behind the Thorniley house (Lot #90) (ed. Note – a long stream and valley in North Zone 4.) A second hike was behind Mom's (Judy Burn's) house (Lots # 144 and # 145) I believe it was on that second hike we found the oyster mushroom later served at the dinner. I think there were two other non-lake fungi enthusiasts on the first walk. The mycologist kept talking about stuff growing under oak and mature hardwood, which we were not getting in the shadowed side of the valley, which caused the second walk. (on ridge top upper South Zones 14 & 13).
>
> Fungi is everywhere. We found small things with marvelous colors, red, blue, green, orange. Some we turned over rotting logs, most was just out in the open.
>
> We had a great time. So did the leader, Bill Roody, he said he was very happy with us being so interested in small unsexy stuff. We did learn that a great number of little brown mushrooms are called LBM. Little Brown Mushroom. We still joke about that.
>
> What I didn't know: that it's not a problem to harvest all the fungi you can find. The spores have escaped from the mushroom as it grows. The mushroom isn't a fruit with seeds that must repopulate. The act of picking it and brushing it into a collection bag is enough to assure the release of spores.
>
> You can't over-pick morels or any other mushroom, you can destroy habitat and disturb the actual plant growing underground to have adverse effect on the population but mushroom picking can't be overdone. Jana"

Courtesy Teresa Bostian. South Zone 15.

DIVISION OF NATURAL RESOURCES
Wildlife Resources Section
Operations Center
P.O. Box 67
Elkins WV 26241
Telephone (304) 637-0245
Fax (304) 637-0250

Joe Manchin III
Governor

Frank Jezioro
Director

Mr. David Powell
1425 17th Street N. W. #701
Washington, DC 20036
19 August 2008

Dear Mr. Powell,

We were pleased to participate in the Lake Floyd Bioblitz and appreciate the opportunity to survey the fungi of the area. We had an enthusiastic collecting group and despite the early season we were able to document 79 species including 49 that were Harrison county records. They were vouchered in the Davis & Elkins College Herbarium (DEWV) in Elkins, WV. *Nectriopsis tremellicola* (Ellis & Everh.) W. Gams had not been previously collected in the state.

Thank you for all your efforts to organize this event.

Sincerely,

Donna Mitchell
Bill Roody

Donna Mitchell and Bill Roody
WV Division of Natural Resources
Wildlife Diversity Program
donnamitchell@wvdnr.gov
williamroody@wvdnr.gov

Nectriopsis tremellicola. *North Zone 4. Mushroomobserver.org*

Nectriopsis tremellicola never before collected in West Virginia.

From John Plischke**,** chairman for the Fungi section of the Pennsylvania Biological Survey:

John found *Xylobolus frustulatus* (below),

> "on a stump at the beginning of the valley [Ed. Note - behind Thorniley house Lot # 90, North Zone 4] growing like a roof-tile instead of growing flat and spreading. It was a form of the species I had rarely seen before.
>
> I really like it at Lake Floyd. It was for me one of my favorite weekend trips. I would love to come back sometime for another bioblitz. When you called I remembered about the Xylobolus from there. It's different than the typical ones. The common name for it is ceramic parchment and it typically grows flat and not shelf like. It typically resembles an antique crazed ceramic plate with all the cracks. The ones growing at Lake Floyd were shelf like and non-cracked. I do not see that form of it often. That was my favorite mushroom from Lake Floyd. It's not a bright colored beautiful mushroom but it stuck in my mind because of its unusual form. It may be *Xylobolus frustulatus* but I have also heard other names used. I think at Lake Floyd Bill was calling it *Xylobolus subpileata."*

Xylobolus frustulatus. *North Zone 4. Courtesy John Plischke,*

Bill Roody set us straight on mushroom hunting, “Well you know those birders, we feel sorry for them on field studies, they get up before dawn, rush out into the field at first light, because a big percentage of bird calls and bird sightings occur in the first hour and a half of daylight. Then they hike back to camp hungry for breakfast, and try to get back to sleep in the middle of the morning.”

“Fungi researchers, on the other hand, get up whenever they want, have a nice leisurely breakfast, then head out at a reasonable, civilized pace - because those fungi ain’t going anywhere!”

Stalked Scarlet Cup. Courtesy Bill Roody

Judy Burns commented that after her fungi expedition into the valley in North Zone 4, she returned several times after the Bio Blitz with her grandchildren, always finding fungi, and once a box turtle.

Fungi				
Order	**Common Name**	**Scientific Name**	**Zone**	**Abundance**
		Armillaria sp.		
		Bolbitius sp.		
		Boletus pulverulentus		
		Calocera cornea		
		Carcinomyces effibulatus		
	Blue-Green Wood Stain	*Chlorociboria aeruginascens*		
	Crown-tip coral	*Clavicorona pyxidata*		
		Coprinus micaceus		
		Coprinus variegatus		
	Soft Slipper Jelly Orange Crep	*Crepidotus crocophyllus*		
	Bird's Nest	*Crucibulum laeve*		
		Daedaleopsis confragosa		
		Daldinia concentrica		
		Diatrype stigma		
		Exidia nucleata		
		Galiella rufa		
	Artist's conk or bracket	*Ganoderma applanatum*		
		Gymnopilus sapineus		
		Gymnopus alkalivirens		
		Gymnopus dichrous		
		Gymnopus dryophilus		
		Gyromitra fastigiata		
	Slime mold	*Hemitrichia sp.*		
		Hirneola auricula-judae		
		Hohenbuehelia petaloides		
		Hygrocybe flavescens		
		Hygrophorus pratensis var. pratensis		
		Hymenochaete olivaceum		
		Nectriopsis tremellicola		
		Inonotus dryadeus		
		Irpex lacteus		
		Lachnum virgineum		
	Chicken of the Woods or Sulphur Shelf	*Laetiporus sulphureus*		
		Leccinum nigrescens		
		Lepiota cristata		
		Marasmiellus candidus		

	Marasmius rotula
	Megacollybia platyhylla
	Microstoma floccosum
	Panellus stipticus
	Phaeocalicium polyporaeum
	Phellinus gilvus
	Pleurotus ostreatus
Destroying Angel[a]	*Amanita bisporigera*
Deer mushroom	*Pluteus cervinus*
Spring poly pore	*Polyporus arcularius*
	Polyporus badius
	Polyporus craterellus
	Polyporus mori
	Polyporus squamosus
	Polyporus varius
	Psathyrella delineata
	Psathyrella echiniceps
	Psathyrella piluliformis
	Punctularia strigosozonata
	Pycnoporus cinnabarinus
	Rickenella fibula
	Russula vinacea
	Sarcoscypha occidentalis
	Schizophyllum commune
Eye lash fungus	*Scutellinia scutellata*
	Scutellinia umbrorum
Woodhair slime mold	*Stemonitis sp.*
	Stereum complicatum
False turkey trail	*Stereum ostrea*
	Stereum straitum
	Trametes gibbosa
Turkey tail	*Trametes versicolor*
	Tremella fuciformis
	Tremellodendron pallidum
	Trichaptum biforme
	Ustulina deusta
	Venturia liriodendri
	Xeromphalina tenuipes
	Xerula furfuracea
Dead man’s fingers	*Xylania polymorpha*
	Xylobolus frustulatus

	Candle snuff	*Xyleria hypoxylon*
		Xylobolus subpileatus
		Xylocoremium flabelliforme

[a] Deadly, toxic.

Microbes

Microbes Taxa Team Leader: Harry W. Godwin, USDA

At the Microbe Taxa Table, Harry displayed his own homemade low-cost alternative to some very expensive scientific equipment which effectively dried a soil sample at a carefully controlled rate, so that the microbes had time to migrate downward to moisture in the soil, finally all concentrating in the last lowest band of moisture, where the micro-fauna could be extracted and counted.

Harry provided a microscope for everyone to use at the Microbe table. Harry said that examining micro-fauna under the microscope is very rewarding. Even though microbes are too small to be seen by the human eye, when seen through a microscope, their bodies have every bit as much detail "as an elephant, or giraffe, or any other animal." Imagine this other rich world of micro-fauna that very few ever see!

Orabatida

Mesostigmata

No wonder that E.O. Wilson said if he had another life to live, he would concentrate all his study on microbes rather than insects or larger animals, since microbes are the last great frontier of unknown species, with the vast majority unknown to man.

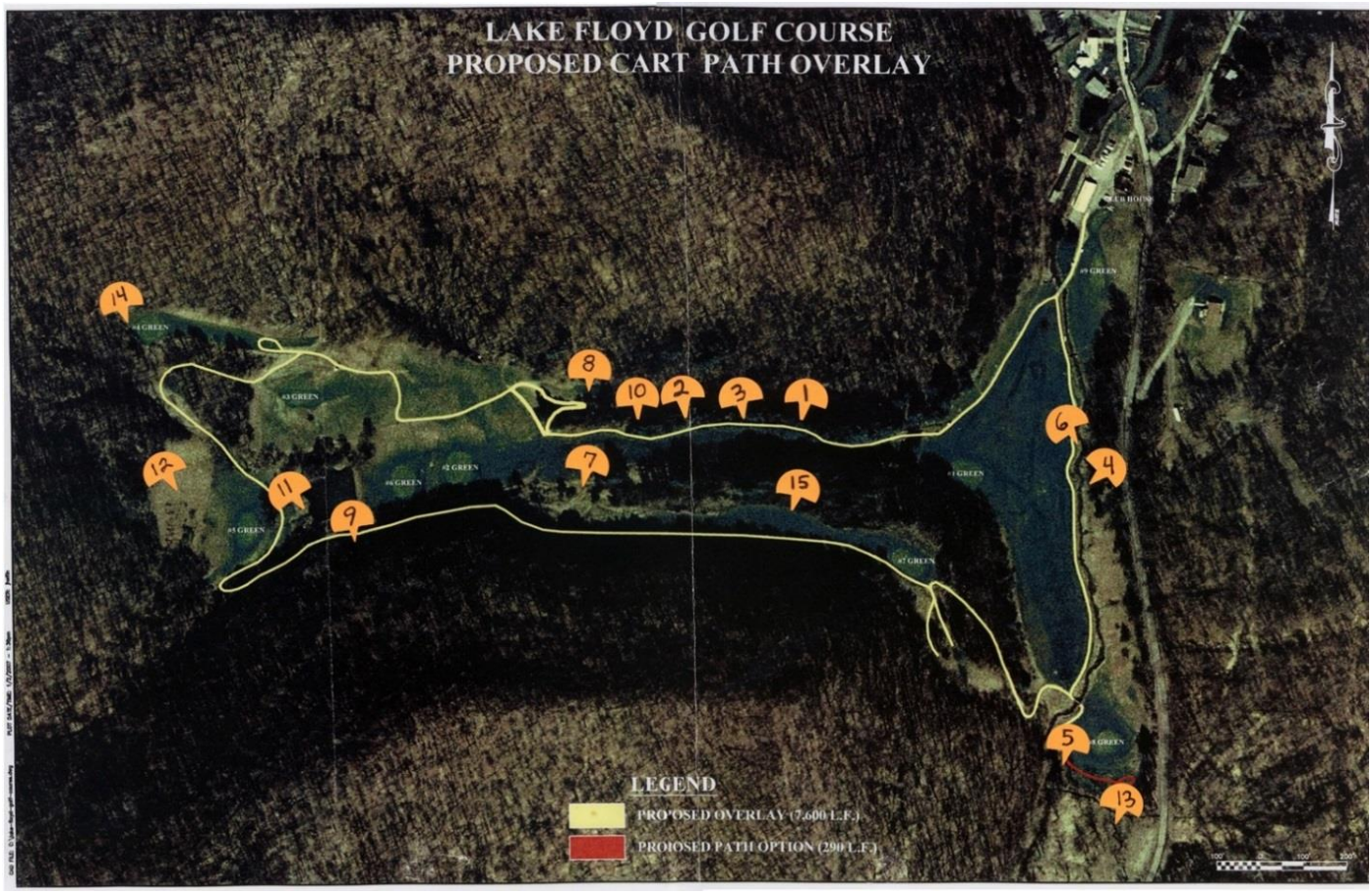
Harry told me that if one soil sample from a series of samples has the highest diversity of microbes, you can predict that the site from where it was taken will also have the highest diversity of fungi, plants, crustaceans, insects, reptiles, amphibians, birds, mammals all the way up the food chain! Microbes to man, amazing to consider. Harry told me soil sample 13 "Waste field south of Green # 8" (see map below) had the highest micro-fauna diversity.

Collembola

Podura aquatica

Soil Samples

Harry Godwin arrived on the June 7-8, 2008, weekend and collected soil samples at 15 sites in Golf Course Zones 7, 8 and 9 (map below). Then he returned the next weekend for Bio Blitz. Harry said that the Lake Floyd (Ed. note "Billy Goat") Golf Course had the most diverse ecology of any golf course he had ever seen. "It has weedy fields, grass fairways and woods, three very different habitats." He did survive a golf cart ride down Hole # 8 cart path, see his comments below.



Fifteen soil samples taken on Lake Floyd Golf Course for Microbes Survey. Courtesy Harry Godwin.

1. Dry woods off #2 Fairway (North hillside).
2. Drier Mixed woods between #1 and #2 green (North hillside).
3. Damp woods ravine #1 & #2 Greens (North).
4. Woods-edge by creek # 1 Green (East).
5. Creek edge by # 8 Green (Southeast).
6. Flood-plain by creek # 1 Green (East).
7. Grassy edge by # 2 Green (South).
8. # 3 tee –off Brushy area (North).
9. Secondary woods-edge by pond (South) base of steep bank.
10. Mixed woods fairway # 2 (North).
11. Marshy area flowing into pond Green # 5 (West).
12. Grassy, weedy field west of # 5 (West).
13. Waste field south of Green # 8 (South).
14. Damp fringe of #4 Green (West).
15. Fairway coming into # 7 Green (South).

From Harry Godwin, June 10, 2008:

> "David,
> I spent the entire day (Saturday) at Lake Floyd. Was able to rent a golf cart and tour the entire golf course area. Due to size of Lake Floyd and time allowed, I will be concentrating on zones 7, 8, and 9. These are the most diverse in ecosystems (flora & fauna). On Saturday, I collected 15 soil samples from a wide variety of ecosystems surrounding the golf course and adjoining fields, woods, wet & dry meadows, and creek bottoms (also grassy meadow you mentioned above green # 5). I was pleased to find these varied environments. Most golf courses are much more restricted to surrounding environments of a sole ecosystem. I would have increased my life insurance if the steepness of those golf paths had been known (wow! a real thrill ride on some areas). But, I had a large cooler filled with ice to put my samples on, plus equipment, so without the cart, it would have been a difficult if not impossible task. With the cart, it was a pleasant assignment with no hangups. Did see a quite a few butterflies and other insects in the different areas.
>
> This week I am extracting the micro-fauna from these samples and hope to have results to present by Friday when I visit. My wife will not be able to come with me (our daughter is expecting her baby any day). So, I'll be on my own. I plan to be there Friday morning early and stay through Saturday (just need rooming Friday night). If a problem, I can find a motel in the area. Could you get back to me on this please.
>
> Hope all goes well with the event! Harry"

From Harry Godwin, July 10, 2008:

> "David,
> Good! With the Excel version, you can add comments, lines, arrows, etc. about certain areas to the map. This helps with future references to unique finds or ecosystems that are noteworthy. Also, as to the questions in your e-mail: The zone system was not only

a good idea, but necessary in such a large area with so many different ecosystems. As to next time, simple printed maps (like the one I sent) of the zones (or groups of zones) would be a plus in informing people where they saw or captured a certain specimen. As to "good" catches or unique ones: the Hackberry Butterfly and Silvery Checkerspot were a surprise. Not that they are rare, but "local" is a better description of finding them. They are not usually found in a one or two day search of an area unless it just happens to be their habitat. Also, the "Anna" Tiger Moth was a very good catch along with the Lecanto's Haploid (saw several). One would not expect to encounter these in a one day search. On the micro-fauna: finding five Mesostigmata Camerobiidae mites in one sample was certainly noteworthy. I haven't seen that many in 30,000 samples from our area. But, if I need some good specimens in the future, I'll know just what spot to sample thanks to my recording it on the map.

The key reason for recording specifically where something was captured so one may return at a future date and test again. Is it there? Has it increased, declined, or remained stable?

That is a key purpose of a Bio-blitz...a historical record.

Any additional comments or questions, feel free to contact me. Have a great summer! Harry"

Microbes

Common Name	Family	Zones 7, 8, 9	Abundance Total # per species	Morpho Series ID
Collembola	*Onychiuridae*		191	13
Mite	*Scutacaridae*		160	22
Mite	*Oribatulidae*		78	8
Mite	*Scutacaridae*		78	23
Mite	*Camisiidae*		44	29
Mite	*Scheloridatidae*		42	5
Mite	*Galuminidae*		40	2
Mite	*Tectochepidae*		40	6
Collembola	*Entombryidae*		38	6
Collembola	*Tomoceridae*		33	15
Collembola	*Anuridae*		29	12
Collembola	*Isotomidae*		27	2
Collembola	*Sminthuridae*		26	11
Mite	*(Prostigmata)*		23	17
Mite	*Tectochepidae*		22	12
Mite	*Nothridae*		21	1
Mite	*Uropodidae*		21	63
Mite	*Trhypochthonidae*		21	94

Symphyian	*Symphyia*	20	
Elong	*Tomoceridae*	19	8
Mite	*(Astigmata)*	19	19
Mite	*Nothridae*	19	37
Mite	*Carabodidae*	19	38
Fly Maggot	*Diptera*	19	
Mite	*Mesostigmata*	17	27
Mite	*(Oribatida)*	16	3
Mite	*(Mesostigmata)*	16	30
Ant (2-node)	*Formicidae*	16	
Mite	*Daemeidae*	13	34
Collembola	*Entombryidae*	12	17
Mite	*Carabodidae*	12	33
Mite	*Euphthiraracaridae*	11	4
Mite	*Zeronidae*	11	7
Mite	*(Astigmata)*	11	11
Mite	*Eremaidae*	11	11
Mite	*Eniochthoniidae*	11	4
Beetle larvae	*Coleoptera*	11	
Thrip nymph	*Thysanoptera*	11	
Roundworm	*Nematoda*	10	
Mite	*(Oribatida)*	9	93
Homptera nymph	*Homoptera*	9	
Collembola	*Isotomidae*	8	14
Collembola	*Tomoceridae*	7	4
Collembola	*Tomoceridae*	7	9
Collembola	*Entombryidae*	7	18
Millipede	*Diploda*	7	
Mite	*Rhagidiidae*	6	18
Mite	*Daemeidae*	6	48
Mite	*Camerobiidae*	6	56
Mite	*(Prostigmata)*	5	15
Mite	*Camisiidae*	5	28
Mite	*Camisiidae*	5	35
Mite	*Lealapidae*	4	9
Mite	*(Mesostigmata)*	3	16
Mite	*Zeronidae*	3	31
Mite	*Ascidae*	3	59
Mite	*(Prostigmata)*	3	79
Mite	*(Mesostigmata)*	3	80
Centipede	*Chiopoda*	3	

Diplura	*Diplura*	3	
Earthworm	*Lumbriculidae*	3	
Mite	*(Mesostigmata)*	2	10
Mite	*(Oribatida)*	2	21
Mite	*(Oribatida)*	2	24
Mite	*(Mesostigmata)*	2	25
Mite	*Ascidae*	2	36
Mite	*Tryhypochthonidae*	2	60
Mite	*(Oribatida)*	2	73
Mite	*(Mesostigmata)*	2	85
Mite	*Camisiidae*	2	89
Isopoda	*Isopoda*	2	
Protura	*Protura*	2	
Lep. Larvae	*Lepidoptera*	2	
Psedoscorpion	*Chelonethida*	2	
Collembola	*Entombryidae*	1	1
Collembola	*Tomoceridae*	1	7
Mite	*Carabodidae*	1	13
Mite	*Licaroid*	1	20
Mite	*(Mesostigmata)*	1	39
Mite	*Tryhypochthonidae*	1	41
Mite	*(Mesostigmata)*	1	47
Mite	*Zerconidae*	1	55
Mite	*Uropodidae*	1	67
Mite	*(Mesostigmata)*	1	76
Mite	*(Mesostigmata)*	1	95
Beetle adult	*Coleoptera*	1	
Spider	*Araneida*	1	
Bee adult	*Hymenoptera*	1	
Flatworm	*Platyhelminthes*	1	

Grand Total	1,393
Total Species	89
Average per Sample	93 Micro-fauna

Billions of years ago, microbes converted the Earth's entire atmosphere from nitrogen-based to oxygen-based. www.national-academies.org

10

Lessons Learned, What You Can Do

Lessons Learned

Our mostly successful first time Bio Blitz proved that any community, with pre-planning, can have its own Bio Blitz, without sponsors, at a very low cost.

We had 193 participants recorded and no doubt more than 200 Bio Blitzers total. Of these about 116 were residents at Lake Floyd.

Weather: Bad News and Good News

Bad. We had two rain downpours on our big day Saturday. Rain interfered with our plan to set up the ultraviolet light moth trap in Golf Course Zone 7, which would have been spectacular for the kids after dark. Rain also interfered with our plan to set up bat mist netting near the clubhouse in lower North Zone 3.

Good. However the two downpours occurred conveniently during lunch, 12:00 – 1:00 p.m. and during dinner at the clubhouse 6:00 – 7:00 p.m. Immediately after both rains the sun began to dry everything so people could go out again quickly and continue to collect.

Field Survey Process

We could have been more clearly explained the field survey process to Lake Floyd members prior to Bio Blitz. We did distribute flyers with guidelines and descriptions in advance, but most Lake members who came ready to help that weekend were learning for the first time. We had a couple training meetings at the clubhouse during the winter and spring, but were unlucky with bad weather and they were sparsely attended.

We had a wealth of various field survey forms provided by WVDNR. Some Zone Teams and Taxa Teams did use them, but many were not picked up in all the rush.

Experts' Schedules

Just one day before Bio Blitz we lost, to a family reunion he had forgotten about, an enthusiastic owl ornithologist who had planned a 2:00 a.m. hike on the golf course.

The schedule of arriving experts was somewhat fluid, and so we were not able to post a definite schedule of Taxa Team hikes until late morning Saturday. Many had driven a long distance that morning and as the expert arrived, she/he gathered their Taxa Team and took off into the woods, lake or streams. We encouraged volunteers to just spend the day, or both days on site and be prepared to hike out quickly as the scientists arrived.

Nearby Communities

The Shinnston News & Journal published a front page feature on the Bio Blitz (Attachment # 9).

Clarksburg WBOY TV came Saturday evening to interview two of our top experts, Bill Grafton, leader of the Plant Taxa Team, and Dr. Tom Pauley, Leader of the Reptile Taxa Team. See www.lakefloyd.com.

What You Can Do

Corrections or other comments are appreciated from Lake Floyd Bio Blitzers, club members, experts or anyone interested; no doubt mistakes in this Biological Survey Report need to be corrected.

We are seeking comments, from Lake Floyd members or anyone who participated in the Lake Floyd Bio Blitz. Please tell us about your experience. We particularly would like an account of the Trees and Plants Hike through the South Zones led by Plants Taxa experts Bill Grafton of WVU Forestry and Donna Ford-Werntz, WVU Herbarium. Please forward comments to David Powell wdp320@aol.com, or Anita Burns prunweed42@yahoo.com.

Anyone who took photographs during Bio Blitz weekend, please forward them to David Powell wdp320@aol.com, or Anita Burns prunweed42@yahoo.com, along with permission to use them in the Lake Floyd Biological Survey Report and/or in the website www. LakeFloyd.com. We will credit all photos.

Website. We will have a Guestbook/comments page on the web site www.LakeFloyd.com where the Bio Blitz dialogue can continue. Please send any comments, Bio Blitz photos or other Lake Floyd nature photos to web site editor Jeff Schlosser Jeff@aagg.com.

11

Recommendations from Bio Blitz experience

In wildness is the preservation of the world.

—Henry David Thoreau

I go to nature to be schooled and healed and to have my senses put in tune once more.

— John Burroughs

The Lake Floyd valley is filled with natural riches, the variety of its deciduous hardwood trees, the colors of its Eastern songbirds, a world hotspot for salamanders, and much more. As hunters know, anyone who walks quietly through the woods soon will see interesting and unusual things. Why not walk these hills like the silent Indians used to do, but with binoculars, GPS, cameras, 21st Century technology, and get to know our wild neighbors. Many Lake members already do this, our Bio Blitz experience could encourage more.

Courtesy Teresa Bragg Carter.

Another Bio Blitz – The Lake Floyd Biological Survey Report can act as a baseline study and how-to model for future wildlife and nature projects at Lake Floyd.

The next Lake Floyd Bio Blitz could be more manageable, for example, survey one North Zone, one Golf Course zone, one South Zone and one Lake Zone, not 20 zones. Or just one Taxa, *e.g.,* Birds for a weekend, or Reptiles and Amphibians, could be counted.

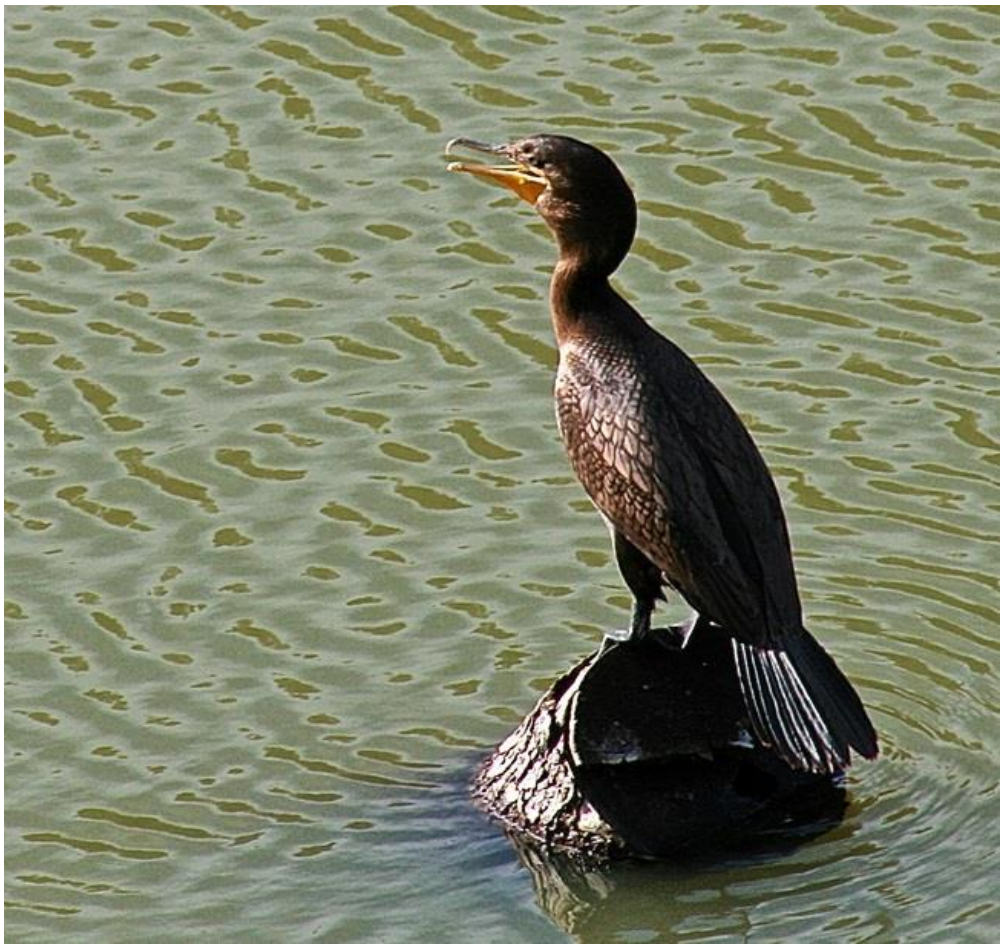
Mark Hiking Trails

Clearly mark a bird watching trail on the ridge top from North Zone 1 to the Golf Course Zone 7. In other words, the entire length of Lake Floyd on the North side.

Also, trail-blaze a bird watching trail through the South Zones 10-16, on the ridge top or on the old oil well road half way up the hillside, or both. Each could go the entire length of Lake Floyd on the South side.

Snags and Stumps

Resist cleaning up every tree that falls in the lake – place a few snags or stumps several feet away from the water's edge, so water birds can safely perch and rest at the Lake.



Cormorant. Lake Zone 2, South side. Summer 2014. Courtesy Lisa Black.

Stumps are a good place for waterfowl, a big snapper or painted turtle to be visible and feel safe in the sun.

Standing dead trees are the number one resource for "housing" for many bird and mammal species – leave a few visible dead trees standing, and monitor for the species which live there.

Place 3 or 4 osprey nesting boxes at strategic places around the Lake – ospreys have been at the Lake periodically – easy to build, why not encourage osprey breeding at Lake Floyd. WVDNR could advise on this.

"The bluebird boxes near tees on the golf course away from the edge of the woods need raccoon guards." (Unsigned message left in Bio Blitz register.)

Camera Trap. Set up a remote camera(s) to photograph wildlife. The Smithsonian Institution project, eMammal Wildlife Camera Tracking, will help and advise communities on setting up a camera trap. Photos will go into a national Mammal database, Smithsonian eMammal. The agreement does not permit any publication or distribution of photos of humans. www.eMammal.org.

A permanent display in the clubhouse which might include a community bird list, a nature library.

A nature and wildlife book club at Lake Floyd.

One day a year for Wild Neighbors Day – with covered dish dinner?

West Virginia Division of Natural Resources. WVDNR:

Wildlife Diversity Program and Natural Heritage Program

Wildlife Resources Section Watchable Wildlife Program

Backyard Bird Count www.wvdnr.gov/Wildlife/WinterBirdCount.shtm.

Master Naturalists Program http://www.wvdnr.gov/wvmn/index.shtm

Nominations for Lake Floyd "Signature Species"

a) **Mammals**

nominated by

b) **Birds**
Yellow Throated Warbler- *Dendroica dominica*, nominated by Dr. Jay Buckelew, ornithologist, Brooks Bird Club, "because of its attractive coloration, beautiful song, relative rarity, and its thriving numbers at Lake Floyd, this bird would be a good 'signature species' for Lake Floyd."

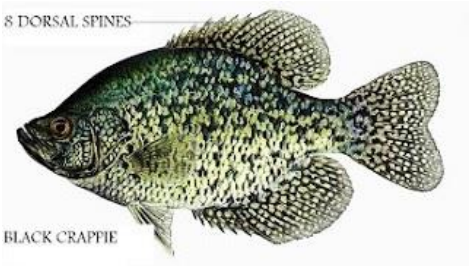
Yellow Throated Warbler
www.pinterest.com

c) **Reptiles**
Eastern Box Turtle- *Terrapene carolina carolina,* nominated by David Powell –"five, count them five, Lake Floyd Turtle Derbies 1960–64, in memory of Dolly, Thunder, Big Flame and Jupiter."

Female Eastern Box Turtle at Bio Blitz Central.
Courtesy WBOY TV.

d) **Amphibians**
nominated by –

Nominations for Lake Floyd "Signature Species"



Black Crappie. Pictofly.com

e) **Fish**
nominated by - need a fisherman here
(possibly Black Crappie*, Pomoxis nigromaculatus*, the American record was held by Lake Floyd Club for many years, the fish is mounted in the clubhouse card room)

f) **Crustacean**
nominated by

g) **Insect**
The Vesper Bluet damselfly - *Enallagma vesperum,* nominated by Susan Olcott, WVDNR Director of West Virginia Odonata Atlas Project, "The Vesper Bluet turned out to be a particularly rare species."

h) **Fungi**
Nectriopsis tremellicola, nominated by Donna Mitchell, WVDNR Nongame Wildlife and Natural Heritage Program "*Nectriopsis tremellicola* had not been previously collected in the state."

i) **Micro-fauna**
Mesostigmata Camerobiidae mites, nominated by Harry Godwin, USDA, "finding five *Mesostigmata Camerobiidae* mites in one sample was certainly noteworthy. I haven't seen that many in 30,000 samples from our area."

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Thanks and Acknowledgments

Mea Culpa. First I must apologize to everyone connected with Lake Floyd Bio Blitz for allowing the report to lapse for so long. I know people really enjoyed the Bio Blitz weekend but experts and novices alike expected that the report would be published and deserved to see it. In retrospect I should not have tried to compile and draft all this material by myself. I have no good excuses other than that the project seemed huge and other work intervened.

Thanks to my Nature-loving cousins, Anita and Judy Burns, the Lake Floyd Biological Survey Report with Bio Blitz results has a second life. Special thanks to Anita Burns who has devoted many hours this fall cross-referencing hundreds of species, from many field sources, checking Latin names, compiling all data in Taxa Results spreadsheets, a huge amount of work. Thanks for most able technical assistance from Lisa Black. Thanks to Anita for her editing and always sound suggestions, and to Anita and Judy Burns for their review and helpful comments.

We are thankful for our mother Marie Burns Powell, then age 85, who had far more Bio Blitz than she ever bargained for and still made it through the weekend, our family misses her every day. She saw beauty everywhere. “On a beautiful day like this, what are you doing indoors! Get up and get outside.”

We are thankful for the Lake Floyd volunteers Judy Schillace, Jim and Connie Reaser, Brad and Debbie Hickman, Bill and Elaine Kapphan, Anita and Judy Burns, Linda Smith, Keith Parker, Donna and Glen Snider, Diana Barker, Les and Kim Reaser, Barbara Allison, Beth Allen, Charlotte Cobos, Sadie Graham, Marie Powell, Jason Haynes, Mark and Jill Lilly, Jeff and Kyra Schlosser, and many other Lake Floyd members were 100% supportive of an ambitious and admittedly experimental community project. I am sure some names who worked hard on Bio Blitz are omitted and they can be added online.

I owe infinite thanks to Judy Mize for her infinite patience and support. Much appreciation to Chester Zhivanos for skillful editing of this survey.

Thanks to Steve Goff, Teresa Bragg-Carter, Richard Hunt, Teresa Bostian, and Kevin Seamon for use of the wonderful Lake Floyd photos in this report.

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The West Virginia Biological Survey Museum, located in the Science Building at Marshall University in Huntington, WV, is maintained by Thomas K. Pauley and his graduate students. There are currently over 15,000 specimens of amphibians and reptiles in the museum. Largest collection of West Virginia animals anywhere. http://www.marshall.edu/herp/pages/MUSEUM.HTM

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The Brooks Bird Club was founded in 1932 by John W. Handlan and a group of enthusiastic young people. Mr. Handlan led the group on weekly bird walks in Oglebay Park, Wheeling, West Virginia with A. B. Brooks, a well-known West Virginia naturalist. A. B. had a great influence on the club's knowledge and philosophy, thus the club's name. There are chapters in Charleston and Pipestem. The Club sponsors classes and field work in birds, ferns, mosses, flowers, grasses, trees, geology, fungi, herptiles, and small mammals.

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West Virginia Native Plant Society www.wvnps.org

WV Master Gardeners Program
WVU Extension Service Agriculture & Natural Resources
Ag. Sciences Building, Mira.Danilovich@mail.wvu.edu

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NatureServe and its network of natural heritage programs and conservation data centers are the leading source for information about rare and endangered species and threatened ecosystems.
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- Butterflies (You may make copies)

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Attachments

1. Invitation to Scientists
2. Flyer and Poster for Lake Floyd community
3. Homeowners' Tree Reporting Form
4. Lake Zone 1 sign
5. Request for Materials
6. Taxa Team Sign-Up Form
7. a) Request for Boats (Lake Floyd Navy)

   b) Request for Admirals (Lake Floyd Navy)
8. Request for Cages and Traps
9. Shinnston News & Journal feature article
10. Harry W. Godwin article
11. Federally Endangered and Threatened Species in West Virginia
12. After - Words

Attachment 1 – A description of the event and invitation to scientists and experts (sent out several months prior to the Bio Blitz)

Invitation to Scientists: Come and Have Fun

2008 Lake Floyd Bio-Blitz

Inspired by biologist Edward O. Wilson www.eowilson.org

To Create a Biological Inventory of Plants and Animals in the Lake Floyd valley – in 32 hours!

June 13, 14, 15, 2008.

First Ever Bio-Blitz in West Virginia

Family Fun, Go Into the Woods, Go Into the Lake, Get to Know Your Wild Neighbors!

Community web site - www.lakefloyd.com

Lake Floyd was built in the early 1920s as a fishing camp, now it is a community of summer cottages and year-around homes. It is a beautiful setting, a lake surrounded by wooded slopes with a 1930s-style clubhouse, on U.S. Route 50 between Clarksburg and Salem in north central West Virginia. From Pittsburgh, take I-79 South to Clarksburg, Rt. 50 West 14 miles to Lake Floyd. From Washington, DC, take I-270 North to Frederick, I-70 West to Hancock, I-68 West through Cumberland to Morgantown, I-79 South to Clarksburg, Rt. 50 West 14 miles to Lake Floyd.

Lake Floyd Bio-Blitz is an all-volunteer community project to teach children and adults about nature.

Primitive camping on Lake Floyd property, clubhouse open all night, many hotels in Clarksburg/ Bridgeport/Meadowbrook. For information call David Powell 202 387 1680 wdp320@aol.com, cell 202 905 1959, Judy Schillace 304 782 1936, Judy Burns 304 782 3021 jburns@cebridge.net. Community web site - www.lakefloyd.com

All species identified at Picnic Pavilion to produce a permanent Biological Inventory. WVU Herbarium, scientists and Master Naturalists, Brooks Bird Club, WV DNR, WV Native Plant Society and many others are helping.

Birders, botanists, amateur naturalists, insect-, reptile/amphibian-, tree-, flower-, mushroom- bio - enthusiasts please contact us. Come to collect and count species at the Lake Floyd Bio-Blitz!

** All guests please come directly to the Lake Floyd Clubhouse to be registered and signed in.

Wildlife Photo Ops Wildlife Films Refreshments/Covered Dish Picnic

Attachment 2 – A flyer and a poster we put up at Lake Floyd to publicize the event to the community.

2008 Lake Floyd Bio-Blitz

Inspired by biologist Edward O. Wilson www.eowilson.org

To Create a Biological Inventory of Plants and Animals in the Lake Floyd valley – in 32 hours! – June 13, 14, 15, 2008.

First Ever Bio-Blitz in West Virginia

Come One, Come All, Family Fun, No Experience Necessary Go Into the Woods, Go Into the Lake, Get to Know Your Wild Neighbors!

All species identified at Picnic Pavilion to produce a permanent Biological Inventory. Photograph wildlife!

Lake Floyd is on U.S. Route 50 in north central West Virginia. From Washington take I-270 North to Frederick, I-70 West to Hancock, I-68 West through Cumberland to Morgantown, I-79 South to Clarksburg, Rt. 50 West 14 miles to Lake Floyd. Camping on Lake Floyd property, clubhouse open all night, many hotels in Clarksburg/Bridgeport. For information call David Powell 202 387 1680 wdp320@aol.com, Judy Schillace 304 782 1936, Judy Burns 304 782 3021 jburns@cebridge.net.

Photo Contest Wildlife Films
Refreshments /Covered Dish Picnic

Lake Floyd Club 2008 Bio-Blitz Committee

Why Do A Bio Blitz?

Make an Inventory of Biological Diversity at Lake Floyd

Educate Kids (and Adults)

A Time to Explore Lake Property

Provide Field Data to W.V.U. (plants),
Marshall U. (reptiles and amphibians),
D&E College (fungi),
WVDNR (heritage plants and rare animals),
Smithsonian Institution (aquatic insects),
and others.

Identify Harmful Invasive Species.

Have Fun!

See www.lakefloyd.com

Attachment 3 – Home Owners' Tree Reporting Form

Lake Floyd BioBlitz Plant and Tree Reporting Form

June 14 - 15, 2008 ◆ Lake Floyd, West Virginia

FOR YOUR PROPERTY RETURN TO CLUB HOUSE

Taxon: _____ Reporter: _____

Property Location: _____

Observation Session Start / End Date and Time: _____

Use the back of this form for any additional notes about species listed.

	Genus	Species	Common Name	Common / Uncommon / Rare	Location
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

☐ Data Entered into Master List
By

Page ___ of ___

Attachment 4 – Lake Zone 1 sign

Attachment 5 – Request for materials we needed

Bio Blitz Materials List

Lake Floyd Bio Blitz needs the following materials. Please check your basements/attics and if you can loan the following items, please put your name on them first. Bring them to the clubhouse Friday, Saturday Sunday, June 13, 14 or 15. Items can be picked up/will be returned Monday June 16.

Cages

Wash tubs, plastic tubs, fish tanks

Havahart traps

Fish nets; Dip nets; seine nets; insect nets

Canoes and boats (as needed)

Microscopes

GPS units

Laptop computers

Digital cameras/cell phones & Walkie Talkies

Plant presses

Styrofoam scraps from packing

Field Guide Books (plants and animals)

Waders

Attachment 6 – Taxa team sign-up sheets

Lake Floyd Bio Blitz

Taxa – Ondanata & Aquatic Insects

Susan Olcott, WV DNR, Farmington

Taxa Leader(s): _____ **Taxa Leader(s):** _____

Taxa Group: Please be ready to leave as a group promptly at _____, supervised by Taxa Leader. At noon lunch break, can sign on with a different Taxa Group.

Saturday June 14	**Sunday June 15**
9:00 AM	2:00 PM
Name and Phone #	**Name and Phone #**

Notes:

Burn

Attachment 7.a – Recruiting boats for the Lake Floyd Navy

Lake Floyd Bio-Blitz

The Lake Floyd Navy Needs You!

If You Cannot Fish, Can You Loan a Boat, Canoe, Kayak, Anything that Floats. We Will Need Boats for Visiting Fish and Aquatic Insect Biologists

Name, Phone # and Type of Boat

Saturday June 15	Sunday June 16

Attachment 7.b - Enlistment into Lake Floyd Navy

Lake Floyd Bio-Blitz

Lake Floyd Navy

All You Have to Do Is Fish – Fish Anywhere on Lake Floyd - Record Where the Fish Is Caught (Lake Zone 1, 2, 3, 4) - Bring Fish To Picnic Pavilion for Species Identification, Measurement and Check In

Saturday June 14

Admiral(s)_____

Sunday June 15

Admiral(s)_____

Captains:

Attachment 8 – Request for cages and traps

Lake Floyd Bio-Blitz

In the Basement Do You Have Cages, Aquariums, Tanks, Nets, No-Harm (Live) Traps, Anything to Catch and Hold Critters for a Couple Days?

Please Put Your Name on It and Loan to Lake Floyd Bio-Blitz

Name, Phone # and Item

Saturday June 15

Sunday June 16

'Wild & Wonderful' Discoveries At Lake Floyd

The "flora & fauna find" at Lake Floyd last weekend produced so many species of plant life, they have not yet been fully tabulated! Pictured above are a few of the sample gathered during the 32-hour Bio Blitz. *Photo courtesy of Anita Burns.*

By LEIGH C. MERRIFIELD
News & Journal Editor

The "Bio Blitz" held at Lake Floyd last weekend was a bona fide eye-opener to just how wild and wonderful West Virginia really is! To define what a "bio blitz" is in simple terms would be to say it is like a nature scavenger hunt. And it drew the attention of not just Lake residents, but also scientists, specialists, and renowned experts. Nearly 200 participants took part in the 32-hour blitz, and during that time, they scoured the area, combing backyards, the woods, the lake, the golf course pond … you name it.

"We had some of the best experts with us during this study – people who are very knowledgeable, and we were lucky to have them," said David Powell, who organized the group of scientists who attended. David grew up at Lake Floyd, and although his mother and other family members still reside there, he has moved on to the DC area where he does freelance research finding film and photographs for wildlife films.

David said he was approached last summer by Judy Schillace, another Lake Floyd resident, who asked if he would lead some sort of wildlife/nature project as a way to interest both the adults and children who live there and help them appreciate their surroundings. Through e-mails and phone calls to experts he knew throughout West Virginia, he extended invitations to participate in the first "Bio Blitz" to take place in the state.

Numerous acceptances were received! Some of those attending included: Donna Ford Werntz, curator of the WVU Herbarium; Bill Grafton, from WVU Forestry; Jay Buckelew, a bird expert and biology professor from Bethany College; Dr. Tom Pauley from Marshall University; Laura Miller, an entomologist from the Division of Agriculture in Charleston; Harry Godwin, from the US Dept. of Agriculture in Beckley; Penny Miller, head of Oglebay Park's Good Zoo; Joe Greathouse, a scientist from Wheeling; Don Gaspar, a fish biologist from Elkins; Susan Olcott and John Lewis, who collected dragonflies and moths for the Smithsonian Institute; Pamela Davies, an oceanographer from Fairmont State University; and Bill Roody, who collected mushrooms for D&E College.

"The objective is to look in the woods and water for a specific amount of time and find all you can to observe and identify – not to catch," Powell said. "We found a storehouse of biological diversity in our backyard!"

Why did they spend 32 hours – even after sunset – looking for turtles, bats, plants, snakes, animals, birds, butterflies, frogs, toadstools, etc.? Because to get a clear picture of what an area has, it must be done over an extended period since different organisms are likely to be found at different times of day.

Here's what they found in those 32 hours – 10 different species of mammals, 64 species of birds, 10 different reptiles, 27 types of aquatic insects, tables full of fungi of all different colors, hundreds of insects, and they are still tabulating the plant life! With microscopes, binoculars, cameras, and the human eye, they observed many specimens, the findings of which will later be viewable by visiting www.lakefloyd.com.

A real hands-on experience, some of the kids attending enjoyed holding the baby snapping turtle shown here. *Photo courtesy of Anita Burns.*

A get-acquainted reception was held on Friday evening for all the visiting scientists, and a covered dish dinner was hosted on Saturday evening to thank them for their participation.

Judy Schillace, who suggested the "Bio Blitz" idea, said, "The point of this for me wasn't so much the number of species that could be identified, but that the kids could enjoy a hands-on experience and perhaps become a little more interested in earth sciences. They got very involved and in touch with nature and were diverted from video games at least for a while."

Poster exhibits were available prior to the blitz to stir some interest, Powell said. "It was a great experience for the children to travel with experts who could answer all their questions. And this kind of event can also help in a small way with scientific studies."

He explained that there is a decline in amphibians all over the world that is stirring interest. "Scientists know that the skin of frogs and salamanders, for instance, is very sensitive to the

Continued on Page 2A.

'Wild & Wonderful'

Continued from 1A.

Obviously a great place for birdwatching, a bald eagle was captured on camera perched in a Lake Floyd tree. *Photo courtesy of Pam Reaser.*

environment and a good indicator of air and water cleanliness," he noted. "It might be pesticides or it could be pollution that is causing this decline … and it might affect birds next, and so on. So there is an interest throughout the world in why we're losing many of these species. Medical discoveries are being derived from the skin of their bodies, so although this was not a heavy scientific study, it may help in some small way."

Powell continued, "West Virginia has a world-class bio diversity, the highest diversity of plants and animals of anywhere in the world that has a temperate climate. The whole state of West Virginia is a 'nature paradise'! People in other countries are even aware of that fact. We just don't realize that it is in our own backyard."

The Bio Blitz was a success and a unique opportunity for Lake Floyd residents to explore with experts and see first-hand what scientists do. And it was a first for West Virginia!

Already plans are being made for a nature and wildlife book club at Lake Floyd's clubhouse. Perhaps some will enroll in the state's Master Naturalist Program run by the DNR. Another added feature of combining the public with professionals is that perhaps it will popularize the field of science for some of the youth who were involved. Whatever happens, it certainly proved that West Virginia is indeed "wild and wonderful"!

Attachment 10 – article by Harry W. Godwin

SOUTHERN LEPIDOPTERISTS' NEWS VOLUME 26 N0.4 (2004), PG. 101

THE OFFICIAL PUBLICATION OF THE SOUTHERN LEPIDOPTERISTS' SOCIETY ORGANIZED TO PROMOTE SCIENTIFIC INTEREST AND KNOWLEDGE RELATED TO UNDERSTANDING THE LEPIDOPTERA FAUNA OF THE SOUTHERN REGION OF THE UNITED STATES (WEBSITE: www.southernlepsoc.org/)

J. BARRY LOMBARDINI: EDITOR

GEMS ON THE WINGS OF TIME

BY HARRY W. GODWIN

"Hey Harry, what's the most exciting catch you ever made?" I pause in deep thought. Fifty-plus years of pursuing butterflies and moths streak through my mind. My first impulse is to answer, I hoped it hadn't happened yet. Then a broad grin spreads across my face, a sparkle appears in my eyes. "An eastern tiger swallowtail," comes the reply.

A deafening stillness fills the room. "Papilio glaucus, you've got to be kidding!" Bewildered silence again prevails. "That butterfly is probably one of our most common. How can that be exciting?" My smile broadens. "Yes, I'm certain that was my most memorable capture." My friend's face expresses even a more confused disbelief that confirms a favorite adage of mine: naive, first experiences are often your best and most enduring, sticking in your mind throughout life ... hence, the Eastern Tiger Swallowtail erupted from my deepest memory.

It was the Spring of 1951. At age ten, my eleventh birthday was six months distant. My parents and I had now resided in the little town of Springboro, Pennsylvania, 40-miles south of Erie, since the previous August. We had moved from a farm some two miles away into a large, tum-of-the-century, double house on Main Street on the north side of town. The house backed up on fields and woods that ran for miles, to a boy often ... forever. Without the sight of civilizations encroachment, these deserted wastelands only lacked my exploration. As a "farm boy," this was a place of delight, a setting where a young boy enthralled with the magic of nature could pursue the endless discoveries awaiting him without limits. Pursue them I did!

Although, those pursuits would later in life encompass numerous facets of biology leading to a career in the field, for now, my satisfaction was provided by just roaming over those beautiful fields of alluring discovery, soaking in all that nature had to offer. In this Appalachian-like environment, nature offered a full array of her best, a great diversity of species of both plants and animals, especially Lepidoptera. This time period is remembered as a thrilling period in my life, a time of joyful bliss. A part of that bliss involves one particular Tiger Swallowtail butterfly and what would become a life-long adventure touching the contiguous United States, the jungles of Panama and Puerto Rico, and boreal forests of lower Canada.

But focusing back on Springboro, the credit for starting this life-long trip resides with the individual living next door, a girl my age with two hobbies: collecting stamps and butterflies. Both of her pursuits would occupy extensive portions of my future life, resulting in the accumulation of large collections. But overall, the butterflies and moths have a cherished status spanning those many years, today comprising

tens-of-thousands of specimens housed in museum drawers. To me, each elicits a very special day, a trip, an adventure, a time of pursuit and capture of those "gems on the wing." They are not viewed as "dead objects." Rather, they represent "life," with all their uniqueness, their individual beauty, their representation of the wonderful habitats where they called home. It was my privilege to have experienced them and their world. Each one, from the tiny blue of the salt marshes of California, to the brilliant-blue Morpho of Panama, to the dull-brown skipper in my backyard in West Virginia, recalls a special day, an exciting moment, a cherished time to reflect back to an instant in life that will never return ... yet, which memories will last throughout your life. It's special! It's the good stuff in our lives. It's the stuff you can't buy at Wal-Mart or with a credit card through an on-line store.

Speaking of memories, "Harry, what about that exciting moment with the Tiger Swallowtail? Explain that please."

"Well Walter, it was my first great moment in collecting Lepidoptera. It was my very first capture. I remember the occasion well."

She was a beautiful female. A very large individual of her species, very wary, difficult to approach, and especially challenging for a novice in the skills of capturing butterflies. This elusive beauty was feeding on phlox flowers in the neighbor's field, but her divided attention was also targeted on one small, red-headed, blue jean clad, lacking in stealth, inexperienced boy. She wasn' t about to let me get close enough to swing the crude net I had made the previous night. Wow, this was more difficult than anticipated. Little did I know then, in future times, there would be encounters with extremely wary butterflies and moths. Ones that would present a challenge to the most seasoned Lepidopterist. This was as easy as it would get. Yet, somehow, even the clumsy, crude, attempts of the beginner are rewarded. Yes, the first is truly exciting. The key to a life-time of continued thrills is never losing that "first" enthusiasm, that primary emotion of success.

So, as the years pass, we live again that first catch. Oh yes, the individual specimen may change to that record Erynnis funeralis caught in Beckley, West Virginia, with two plastic drink cups, to your first Erora laeta captured with a styrofoam cup in the city park in Bluefield, West Virginia, to the Pontia occidentalis taken in the high mountains of California with a natural gas detection cone while surveying a transmission line, to the Cat ocala taken off a downtown Philadelphia, Pennsylvania, building after dashing into a nearby pharmacy and requesting the aid of the pharmacist for a specimen bottle.

It still amazes me how complete strangers get into the spirit of the moment. The excitement is contagious. Yet, the same blood-rushing excitement continues to this day. The thrill of that "first catch" lives on as vividly today as when a much younger, less experienced, boy of ten attempted, and after many foiled tries, succeeded in his first capture of the Tiger Swallowtail. For me, that was a proud accomplishment.

Thinking back to my second catch, a perfect White Admiral, that wasn't bad either considering I haven' t caught one in Springboro since my boyhood days in the 1950's. Also, in my early childhood collection of about one-hundred specimens were great catches like the Compton Tortoise Shell, again a species not collected in Springboro since those boyhood days.

Today, my recollections of collecting span not only many years, but numerous and varied habitats ranging from the bogs of Lakehurst, New Jersey, the Everglades of Florida, the jungles of Panama, the Pine Barrens of New Jersey to countless "Dollars" of West Virginia, North and South Carolina. If it were

not for those evil foes, time and money, the scope of my travels would have been extended even more. Recently, approaching sixty-five (presently sixty-four), I have acquired a century-old farm in Beckley, West Virginia. There, with my loving companion, Teresa Walls, my plans are to continue collecting both butterflies and moths (Cypraeidae too) until I no longer have the strength to sally forth over field and dale in their pursuit. The Appalachian region is a great environment for my chosen endeavor, of seeking those "Gems on the Wings of Time."

Good "leping" to you all! (Harry W. Godwin, Beckley, West Virginia)

Attachment 11 — Federally threatened and endangered species in West Virginia

Endangered Species

Virginia big-eared bat (*Corynorhinus townsendii virginianus*)
Indiana bat (*Myotis sodalis*)
West Virginia northern flying squirrel (*Glaucomys sabrinus fuscus*)
Gray bat (*Myotis grisescens*) (Accidental, not seen since 1991)
Eastern cougar (*Puma concolor couguar*) (Considered extirpated)
Pink mucket pearly mussel (*Lampsilis abrupta*)
Tubercled-blossom pearly mussel (*Epioblasma torulosa torulosa*) (Considered extirpated)
Northern riffleshell (*Epioblasma torulosa rangiana*)
James spinymussel (*Pleurobema collina*)
Fanshell (*Cyprogenia stegaria*)
Clubshell (*Pleurobema clava*)
Snuffbox (*Epioblasma triquetra*)
Rayed bean (*Villosa fabalis*)
Spectaclecase (Cumberlandia monodonta)
Sheepnose (Plethobasus cyphyus)
Shale barren rockcress (*Arabis serotina*)
Running buffalo clover (*Trifolium stoloniferum*)
Harperella (*Ptilimnium nodosum*)
Northeastern bulrush (*Scirpus ancistrochaetus*)

WV Northern Flying Squirrel. National Park Service.

Threatened Species

Flat-spired three-toothed land snail (=Cheat Threetooth) (*Triodopsis platysayoides*) (lives only in WV)
Cheat Mountain salamander (*Plethodon nettingi*) (lives only in high elevation forests in WV)
Madison Cave isopod (*Antrolana lira*)
Virginia spiraea (*Spiraea virginiana*)
Small whorled pogonia (*Isotria medeoloides*)

Proposed Endangered

Diamond darter (*Crystallaria cincotta*)

Peregrine falcon (*Falco peregrinus*) was removed from the list in August 1999.
Bald eagle (*Haliaeetus leucocephalus*) was removed from the list in August 2007.

Attachment 12 – After - Words

19 June 08

Dear David,

Thank you and your team for dreaming up the idea of a BioBlitz and then making it happen! I am grateful to have been a part of this worthwhile project which was educational & fun.

Lake Floyd is a special place but what can I tell you about the beauty of the surroundings or warm & welcoming folk who live there. Such a place fully deserves to host the first BIOBLITZ in West Virginia.

Congratulations on a job WELL DONE!

Jay Pardue

Look forward to learning about the data, etc.

Plant/Botany group:
(Sat AM/PM)

Total fern, flower + woody species
129 (≈30 new county records)

Donna Ford-Werntz WVU Herbarium curator

Thank you David & co. for your efforts! This was a great project for the community, and an excellent model for others in the state.

23 June 2008

Harry W. Godwin
ARS USDA AFSRC
1224 Airport Rd.
Beaver, WV 25813

David Powell
1425 17th St. NW
Apt. 701
Washington, DC 20036

Dear David,

Enclosed is my list for soil micro-fauna and Lepidoptera found during the Lake Floyd Bio-blitz on 13-14 June 2008. If you would, please forward to the proper channels.

Hope it all went well and you are satisfied with the results.

If you would, please give my thanks to all those of Lake Floyd that provided the food and facilities for such a pleasant event. Also, the house provided was certainly beyond what was expected. Thank you. It was most enjoyable. Several people invited me back to collect. I may accept that invitation at a later date.

Most sincerely,

Harry W. Godwin
Biologist, USDA

November 11, 2014

Hi Dave - Looking forward to seeing the finished report.

Special places at Lake Floyd - the lake (Vesper Bluet), and streamlets running down from the hills (elusive dragonflies called spiketails that I never did net). Most enjoyable was the enthusiasm of the residents.

Ways to maintain/increase engagement - get involved and educated about natural history and conservation - citizen science projects like project Monarch Watch, WV Master naturalist program, Cornell's project feeder watch, DNR's WV Butterfly Atlas, etc.

Cheers, Sue

Courtesy Kevin Seamon.