any of us recall the sideshow atmosphere created in 2002 when the first Maryland snakeheads were confirmed in that pond in Crofton. Well, this past summer, snakeheads were caught in the Jug Bay area for the first time. And though I had heard about this menacing fish, I hadn’t paid much attention until they were found in my river. The Northern Snakehead, *Channa argus*, has literally become Maryland Department of Natural Resource’s (DNR) poster child for the threats of non-native invasive species.

That being said, the Northern Snakehead is a remarkable fish. Native to the Yangtze River basin, they wear a black blotched camouflage pattern on their bodies, have enlarged scales on their elongated face which give them their name, and can reach three feet in length. They can also breathe air and survive out of water for several days if their skin stays moist. Their fins however, do not support overland movements. They are good eating. Snakeheads were originally brought to the US for the food market, and that’s how the Maryland infestation started.

The fish was assigned “injurious wildlife status” after the 2002 incident and an education campaign was launched. By 2006, research organizations had partnered to assess the new breeding population in the Potomac River and its tributaries.

The data are staggering. Since 2006, snakehead distribution on the Potomac River has rapidly increased. The DNR Tidal Bass Program found that: the number of sites with snakeheads has doubled to nearly 40% from 2010 to 2012; the relative abundance of snakeheads has doubled in most years; and at least 1290 snakeheads have been caught and killed by recreational and commercial anglers since 2011.

**Getting to Know the Northern Snakehead**

The first Patuxent River snakehead was confirmed in 2011 by Don Cosden, a fisheries scientist with DNR, in Middle Creek near the mouth of the river. In 2012, there were multiple captures: Golden Beach, Eagle Harbor, a pond at Merkle Wildlife Sanctuary, and three in the Jug Bay area.

Based on life history information and comments from Cosden (who gave a presentation at our February Soup & Science event), the Jug Bay area with it’s shallow, plant-filled wetlands and abundant fish, might be prime habitat for range expansion of snakeheads. Female snakeheads lay an average of 40,000 eggs and can spawn multiple times each year. Young snakehead eggs and larvae are guarded by one or both parents in a floating nest made of aquatic vegetation. After the yolk is absorbed, juvenile snakeheads begin to swim and feed on plankton.

The young snakeheads that survive their first two years grow to 12 inches and are sexually mature. If you do a few calculations, you can see why the Potomac River population trend line has started exhibiting exponential growth.
What will they do to the Ecosystem?

Fisheries biologists have been diligently studying the Potomac River snakehead infestation. Research conducted through Virginia Tech, funded by the U.S. Geological Survey (USGS) and the National Science and Engineering Research Council of Canada, and in cooperation with the Virginia Department of Game and Inland Fisheries (VDGIF), and the Maryland Department of Natural Resources (MDDNR), has led to many published reports and a resource website.

This research collaborative provides the most similar possible data on what to expect for a snakehead infestation of the Patuxent River watershed. Diet was compared to that of other predatory fish that occupy similar habitats: non-native Largemouth Bass, and native American Eel, Longnose Gar, and Yellow Perch. Over 20 prey items (and over 97% fishes) were detected for the snakehead, with Banded Killifish as the most common prey item by number, and Bluegill (a non-native species) as the most important prey item by weight. Perch, Pumpkinseed, and Goldfish were also frequently consumed prey. One study showed that diet overlap was biologically significant between snakeheads and Largemouth Bass; however, bass had a wider diet and a strong preference for crayfish. The importance of aquatic insects in Yellow Perch and American Eel diet helps to distinguish their niche from adult snakeheads.

To clarify that; though adult snakeheads are eating native prey fishes, they do not appear to be in direct competition with native predatory fish. Time will tell how the prey fish fare with a new predator in the water. There is another small silver lining provided by the US Fish and Wildlife Service’s Maryland Fishery Resources Office. In June 2012 at Chopawamsic Creek, Virginia, fisheries biologists came across a Northern Snakehead nest and documented removal of the adults that guarded it. Native Eastern mosquitofish moved in and began

...the Jug Bay area with its shallow, plant-filled wetlands and abundant fish, might be prime habitat for range expansion of snakeheads.
FOJB President’s Message

The Good, Bad and Sometimes Ugly

‘Invasive’ describes a species that, when introduced into an ecosystem aggressively establishes itself at the expense of native plants or animals. Sometimes these are native species; Poison Ivy is a native species with a very invasive character. Kudzu and Ailanthus [Tree of Heaven] are examples of species that are both exotic and invasive. And we have plenty of both native and exotic invasive species at Jug Bay!

Humans have always carried plants and animals from their countries of origin to new homes in far-away places. For North America, this transport sped up during the 17th century with trans-oceanic commerce, and it continues today. In most instances, those plants and animals introduced to new habitats provided food, clothing, medicine and a touch of beauty from home for colonists, explorers and merchants. These introduced species survived because many were tended and cared for in their new surroundings. Many more recent introductions were accidental, hitching a ride in packing material, bilge water or on international cargo. The most troubling introductions are those that were likely done purposely by humans. And many of these were deemed “good ideas” at the time.

Let’s focus on aquatic vertebrates; nutria are a classic example of the ‘good turned ugly’. Large-mouth bass are still pretty much considered “good”, and are still introduced into new ponds and impoundments in our state. Those of you that attended our February Soup & Science event got to hear the story of the Northern Snakehead in our area, and the dramatic increase in recent surveys. Although very likely to turn out to be somewhere on the “Bad” scale, I for one would call them ugly!

In 2002, a reproducing population of Northern Snakeheads was discovered in a pond in Crofton, Maryland. The snakeheads were exterminated and subsequently assigned injurious wildlife status under the Federal Lacey Act which prohibits import and interstate transport. A mid-Atlantic Aquatic Nuisance Species council was formed and a management plan for Northern Snakeheads was drafted. Despite intense media and political attention, increased awareness did not serve to prevent further introductions. In 2004, Northern Snakeheads were found in the tidal freshwater Potomac River, and have since established a reproducing population. Northern snakeheads have also been found in Arkansas, Pennsylvania, and New York. As of 2012, we have a reproducing population in the waters around the Jug Bay area.

We also learned at Soup & Science from Don Cosden, Chief of Inland Fisheries for MD-DNR that the Patuxent River at Jug Bay is now home to another exotic invasive, the Blue Catfish. As with the Northern Snakehead, Blue Catfish were most certainly introduced by human hands into our local ecosystems.

Since Blue Catfish grow to a very large size [over 100 lbs.], and are primarily predators on other fish, the official policy is that they are invasive exotics in the Chesapeake Bay watershed and have the potential to do economic and/or environmental harm. As adults, they have few natural predators; a bit of good news is that the stomach contents of one adult from the Potomac had a part of an adult snakehead!

So what can we do about these, and other exotic invasives? Extirpation is rarely an answer, and can be quite expensive; a lot of money has been spent trying to eradicate nutria from the Eastern Shore of Maryland. In many cases, the best we can hope for is preventing more range expansion. We can encourage anglers not to release these fish when captured in our waters, but there is not a legislative mandate to kill them first. And we can educate folks that come to the Sanctuary about the problem of invasive species. Unfortunately, though, no magic bullet exists for these exotic fish.

Harry Coulombe, President
Welcome, Naturalist Heather Baden

Heather Baden joined the Jug Bay Wetlands Sanctuary staff in November of 2012. She began working in the Jug Bay region in 2005 as a part-time naturalist at Patuxent River Park, where she was involved in environmental education, Osprey banding, Wild Rice restoration, and directing summer camps. Through PRP, Heather was introduced to the Chesapeake Bay National Estuarine Research Reserve (CBNERR) and began working for the research team in 2010. She spent long summer days trudging through the marsh sampling emergent plants, SAV, water quality, and surface elevation tables, followed by long winter days entering, analyzing, and presenting data. The combined work experiences in environmental education and research has provided Heather with a broad background in Jug Bay and a deep appreciation for the region. She is excited to continue growing professionally as a naturalist at Jug Bay Wetlands Sanctuary.

Heather has a Bachelor of Science in Natural Resources Management from the University of Maryland.

“The Patuxent Water Trail” cover story

A tour-of-the-trail article was recently featured in Sea Kayaker magazine. Author Ralph Heimlich takes readers on a multi-day camping tour of the lower Patuxent, describing features, amenities, and history along the way. This article is a good resource for paddlers planning to camp along the river. View the full article on our website at www.jugbay.org/boating-fishing.
Results of 2012-2013 Deer Management Season

Adam Smith, Deer Project Manager and Resource Conservation and Protection Park Ranger

This season marked the third year for managed deer hunting at Jug Bay. The Glendening Preserve, main Sanctuary, and River Farm were hunted for a total of 12 days during the winter. Due to the success of our program here, it has expanded to two other county parks. The results are summarized below.

Jug Bay
22 Antlerless (12 Doe and 10 Button Buck)
5 Antlered
Total of 27 Deer

Beverly Triton
40 Antlerless (31 Doe and 9 Button Buck)
7 Antlered
Total of 47 Deer

Magothy Greenway Natural Area
31 Antlerless (19 Doe and 12 Button Buck)
4 Antlered
Total of 35 Deer

Grand Total 109 or 114 (with embryos added)

Highlights from the 2012 Christmas Bird Count

Summarized by Sam Droege

Volunteer birders gathered on Sunday, December 16th to participate in the annual Christmas Bird Count. Highlights from the Jug Bay count are below; over 88,000 birds were seen. The search area is centered around Jug Bay and includes eastern Prince George’s county to the north and south, and east to the Bay.

In all, 115 species were detected; which is seven more species than in an average year, and seven fewer than the 122 record high of 2001. 34 species had counts below their overall average and 42 species had counts above their overall average.

A new species for the count, Yellow Warbler, was added. And an uncommon species, Rufous Hummingbird was seen at a feeder. Woodland species appear to be doing quite well. Despite past lows Eastern Meadowlark, Horned Larks, Northern Flicker, and Water Pipits were out in higher numbers than normal along the PG side of the lower Patuxent. Gulls, other than Great Black-backs were down, along with most waterfowl numbers. Common Loons had surprisingly high totals.

New high counts were recorded for the following nine species:
• Black Vulture 444
• Purple Sandpiper 12
• Great Black-backed Gull 287
• Pileated Woodpecker 69
• Blue Jay 520
• White-breasted Nuthatch 150
• Gray Catbird 33
• Water Pipit 288
• Red-winged Blackbird 23,195

Jug Bay Summer Camps

GIVE YOUR CHILD A NATURAL ADVENTURE at Jug Bay Wetlands Sanctuary’s Summer Day Camp! Our camps are designed to introduce campers to the fascinating world of wetland ecology. During these outdoor, all-day programs, campers explore the natural world through hands-on activities. For more information call the Sanctuary at (410) 741-9330, email programs@jugbay.org or visit www.jugbay.org.

Wetland Eco-Adventure
(for children entering 5th or 6th grades in Fall 2013)
Monday, July 8 – Friday, July 12
9:30 am – 3:30 pm
Fee: $150 per session ($130 for FOJB members)

A River Runs Through It
(for children entering 7th or 8th grades in Fall 2013)
Monday, July 29-Friday, Aug 2
9:30 am – 3:30 pm
Fee: $150 per session ($130 for FOJB members)

Explore the Patuxent: Teen Leadership Paddle
(for students entering 9th – 12th grades in Fall 2013)
Monday, Jul 22 – Friday, Jul 26
Monday, Aug 12 – Friday, Aug 16
Fee: $200 ($180 for FOJB members)
Reservations and entrance fees are required for all events, unless otherwise noted.

Join staff and volunteer naturalists for nature programs.

- Reservations and entrance fees are required for all events, unless otherwise noted.
- Call 410-741-9330 or e-mail programs@jugbay.org
- Check www.jugbay.org for information, directions and updates to our schedule.
- Open to the public 9:00 am – 5:00 pm Wednesday, Saturday, and Sunday.
- Glendening Preserve open daily at Wrighton Road entrance.
- Programs are open to families and individuals. An adult must accompany children under 13.
- Groups must call to arrange a separate event, unless otherwise noted.
- Please note age limits for each program.

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mareH notes

FOJB family membership (providing free admission): $25

Adults: $5 • Children under 18: $3 • Families: $10 • Over 60: $3

The Fascinating World of Fairy Shrimp

Saturday, Mar 9; 2:00 – 3:30 pm
Yes fairy shrimp are real, but they appear for a brief time in the spring, in special temporary ponds called vernal pools. We’ll learn about the vernal pool habitat, then take a hike to visit with some fairy shrimp where they call home. Meets at the Plummer House, 5702 Plummer Lane, 20711. For adults and families with children 6 years and older.

Psanky Egg Decoration

Sunday, Mar 17; 10:00 am – noon
Instructor: Coreen Weilminster
Create a beautiful egg in the time-honored Ukrainian tradition of Pysanky. Pysanky eggs are created using motifs rooted in nature and the cycles of life, including spiders, sheaves of wheat, spirals, stars and circles, bees, flowers, grapes, birds, and mammals. Each participant will receive an egg and a Pysanky kit containing the basic tools and materials required for the class. Bring a bag lunch. For adults only. Pre-registration and pre-payment is required. Space is limited.
Fee: $20 per person ($15 for FOJB members)

Children's Discovery Series: Pre-school Nature Programs

Salamanders
Friday, Mar 22; 10:00 – 11:00 am
Butterflies
Friday, Apr 19; 10:00 – 11:00 am
Bluebirds
Friday, May 24; 10:00 – 11:00 am
Participants will learn about nature through an interactive craft, game, and story. Ages 3 – 5.

Spring at the Sanctuary

Saturday, Mar 23, 5:30 – 8:00 pm
There should be a lot happening at the Sanctuary on this early spring evening. We’ll wander the trails and visit some prime amphibian breeding sites to experience the sights and sounds of the season. Dress appropriately and bring a flashlight. We go rain or shine. For adults and children 8 years and older.

Ospreys Are Back!

Sunday, Mar 24; 2:00 – 4:00 pm
Welcome our ospreys back from their winter migration in South America. We’ll learn a bit about these amazing birds, then go for a short hike to look for them. Free. All ages.

Spring Break in the Park

Thurs, Mar 28; 9:30 am – 3:00 pm
Spend a day exploring Jug Bay Wetlands Sanctuary. Participants will hike to a vernal pool and investigate its inhabitants. A scavenger hunt, nature craft, and roasting marshmallows over a campfire will complete the fun. Bring a bag lunch and a pair of waterproof boots or a footgear that can get wet. Children ages 8 to 12. Fee: $10 per child.
To reserve a space, mail your payment of $10 per person in advance to the Sanctuary.
Download Public Programs Registration Form here: www.jugbay.org/education

Spring Peepers

Sun, Apr 7; 3:00 – 5:00 pm
Join a Jug Bay naturalist for a hike to the Sanctuary’s ponds, where we’ll listen and look for Spring Peepers and other amphibians that call in early spring. Dress for the weather, with footgear that can get wet. Adults and children ages 5 and older.

Breakfast and Birding on the Boardwalk

Sat, Apr 27; 8:30 – 11:00 am
Sat, May 18; 8:30 – 11:00 am
Join us for spring birding and hiking through meadow, forest, and marsh as we make our way to the new boardwalk at the Glendening Preserve. Enjoy a continental breakfast and a beautiful view of Old Galloway Creek and the river. Meet at the Plummer House. Distance: 2 miles. Directions: www.jugbay.org/visit_us/direc-

Spring Festival

Saturday, May 4; 10:00 am – 2:00 pm
Celebrate spring with us at the Glendening Nature Preserve. Enjoy a hayride, take a hike with a naturalist, sit in on a gardening workshop, make crafts, and much more, ALL FREE! Help the Friends of Jug Bay raise money by purchasing refreshments, buying native plants for your garden, finding a bargain at the Nature’s Market, or bidding for nature items at the silent auction. Rain or shine.
Come to the Plummer House (on the corner of route 4) at 5702 Plummer Lane, Lothian.

Download Public Programs Registration Form here: www.jugbay.org/education

Spring 2013 Public Programs at Jug Bay
Catch the Light: A Photography Workshop  
Saturday, Apr 13  
Photographers often take their best pictures in the sunrise or sunset hours. On this day, the Sanctuary opens one hour before sunrise (5:30 am) and closes one hour after sunset to give photographers this opportunity.  
10:00 am Hike with a naturalist to photograph amphibians and salamanders at a vernal pool.  
12:00 - 2:00 pm Photographer Wayne Bierbaum will be available to critique photos and discuss his approach to nature photography.  
You can come and leave at any time. The $20 fee gives you access to the Sanctuary outside of normal hours, a guided excursion to a vernal pool, and admission to the workshop. Limited to 20 participants.  
To reserve a space, mail your check of $20 per person before April 6 to the Sanctuary. Write “April 2013 Photo Workshop” in the memo field and carefully print your email address in the upper left corner. Download Public Programs Registration Form here: www.jugbay.org/education.

WOW! Women on the Water  
Saturday, May 11; 9:30 am – 3:30 pm  
This program is for women to explore and enjoy a peaceful day in the outdoors. We’ll take a leisurely canoe trip through the marshes of Jug Bay to see wildlife and spring flowers, then take a lunch break on the scenic overlook at Mount Calvert Historical Park. Nature journaling will round out the day, leaving participants feeling rejuvenated. All equipment provided. Bring plenty of water, sunscreen, a lunch, and shoes that can get wet. To reserve a space, mail your payment of $25 per person in advance to the Sanctuary. (make check payable to Friends of Jug Bay) Download our Public Programs Registration Form at jugbay.org/education.

Cool Facts about Box Turtles  
Sunday, May 19; 2:00 – 3:00 pm  
What can freeze solid in winter, hear through its feet, no vocal cords to make a sound, and walked the earth with the Dinosaurs? Box Turtles, of course! Come and find out cool and amazing facts about this small forest gem that we often take for granted but is disappearing from our landscape. Experience how scientists use special detection equipment to follow and study the life of box turtles in the wild, and meet live adult turtles up close and personal. The program will end with a walk to nearby areas where box turtles might call home. Refreshments provided. Adults and children ages 6 and older.

Marsh Ecology by Canoe  
Saturday, May 25; 4:00 – 8:00 pm  
(Full Moon)  
Sunday, Jun 16; 9:00 – 1:00 (Father’s Day)  
Discover the abundant wildlife in the Patuxent River wetlands. We’ll paddle up some of the smaller branches of the river to look for beavers, birds, and flowering wetland plants. Please arrive promptly at the starting time. Bring plenty of water, sunscreen, a lunch, and shoes that can get wet. Children must be at least 7 years old and accompanied by an adult.  
To reserve a space, download and complete our Public Programs Registration Form here: www.jugbay.org/education and mail with your payment of $10 per person (including FOJB) in advance to the Sanctuary.

Kayak the Patuxent  
Saturday, Jun 1; 10:00 am – 3:00 pm  
Saturday, Jul 3; 3:00 – 7:00 pm  
Explore the Patuxent upstream of Jug Bay. We’ll put in at Patuxent Wetland Park by Rte. 4 and paddle to the new boardwalk at the Glendening Preserve for a lunch stop and a brief hike. We’ll paddle back to the Wetland Park. Kayaks, life jackets, and paddles provided. For experienced paddlers. Directions: http://www.jugbay.org/visit_us/directions, option E. Children must be at least 12 years old and accompanied by an adult.  
See information and registration directions for canoe trips above.

Family Camp Out  
Saturday, Jun 22; 6:00 pm – Sunday, Jun 23; 10:00 am  
Camp out with Sanctuary naturalists for a night of frogs, fun, and fire. We’ll cook dinner over the campfire, then take a night Supermoon hike to listen for choruses of frogs. Later, we’ll return to the campfire for s’mores and stories. In the morning we’ll start with a light breakfast before closing with a bird walk. For families with children at least 6 years old. Bring your own camping gear. Some gear available to borrow.  
Fee: $15/person. Make checks payable to Friends of Jug Bay. ($10/person if attending volunteer event from 3:00 – 5:00)

Hike by the Light of the Supermoon  
Saturday, Jun 22; 8:00 – 9:30 pm  
Astronomical events converge on June 22. A “Supermoon” occurs when the Moon’s closest point of approach to the Earth coincides with the full moon. On this night the Moon appears to be larger and brighter than normal. In addition, this is the time of the summer solstice, the longest day of the year. Join a volunteer naturalist to hike the trails for some good views of the sunset and then the rising Strawberry moon. Flashlights recommended. All ages.
**Upcoming Volunteer Events**

- Most of our projects require no experience, come to learn!
- To sign up or for more information, call 410-741-9330 or e-mail volunteers@jugbay.org
- Groups must call to arrange a separate event, unless otherwise noted.
- Please note age limits for each event.

**Stewardship: Garden Club**  
*Tuesdays & Thursdays; visit www.jugbay.org/volunteer for the schedule*  
Join fellow gardeners, butterfly watchers, and native plant enthusiasts in our garden maintenance club. Volunteers weed, water, prune, and otherwise maintain several plantings around the Wetlands Center and the Plummer House. Bring work gloves, lunch or a snack, a refillable water bottle, hat and sun screen, and clothes and shoes that can get dirty. Open to anyone willing to work. Walk-in’s welcome.

**Research: Phytoplankton Monitoring**  
*Fridays; visit www.jugbay.org/volunteer for the schedule*  
Phytoplankton—the microscopic algae on which the entire aquatic food web depends—are also indicators of water quality. Volunteers are needed to help collect a sample from the river’s edge, then back in the lab the phytoplankton are identified and counted. For teens and adults. No experience necessary.

**Research: Vernal Pool Survey**  
*Saturday, Mar 9; 9:30 am – 12:30 pm  
Saturday, Apr 13; 10:00 am – 3:00 pm  
Saturday, May 11; 10:00 am – 3:00 pm*  
Volunteers are needed to help survey the vernal pools of the Sanctuary and Glendenning Preserve. These special temporary ponds are critical breeding habitat for several amphibian species. Prior experience is preferred but not necessary. For adults and families with children 10 years and older.

**Research: Biological Stream Monitoring**  
*Saturday, Mar 16; 10:00 am – 4:00 pm*  
Join us to learn about stream ecology and assist with our research, focused on three streams flowing through the Sanctuary. We’ll hike to a stream, sample for aquatic insects, then bring them back to the Wetlands Center by noon for the afternoon sorting and identification session. For teens and adults. No experience necessary.

**Research: Herp Survey of the Shepherd Property**  
*Tuesday, Mar 26; 9:30 – noon*  
Join naturalists for a morning of exploration on this recently acquired farm. We’ll explore pools and streams for amphibians, and any early season reptiles that might be moving around. We’ll provide equipment, but bring your own boots, nets and bins if you have them. For adults and families with children at least 8 years old. Meets at Wetlands Center then we’ll carpool to the Shephard Farm.

**Research: Wildflower Phenology**  
*Friday, Apr 5; 10:00 am – noon  
Friday, Apr 12; 10:00 am – noon (Glendenning Preserve)  
Friday, Apr 19; 10:00 am – noon  
Friday, Apr 26; 10:00 am – noon (Glendenning Preserve)*  
During the early spring we will be conducting weekly surveys to document the bloom time of our native ephemeral wildflowers. Data gathered will be shared with the Project BudBurst website so they can continue tracking the changes that our plants are experiencing with our changing climate. No experience necessary.

**Stewardship: Patuxent River Clean-up Day**  
*Saturday, April 6; 9:00 am - noon*  
Hill’s bridge at Route 4 is a popular location for fishing and paddlers to put-in. It is also full of trash from misuse. Help us send a positive message by cleaning up the riverfront. Wear shoes that can get muddy. Bring thick work gloves if you have them. All ages welcome. Meet at Patuxent Wetland Park on the north side of the bridge. Directions: www.jugbay.org/visit_us/directions

**Turtle Caretaker Training**  
*Wednesday, May 1; 2:00 – 4:00 pm*  
As the spring progresses, our resident box turtles emerge from hibernation. This training is for volunteers who are interested in helping us care for the three turtles that live in our educational enclosure. Box turtle natural history, feeding, and enclosure maintenance will be discussed. For individuals and families with children at least 6 years old.

**Research: Water Chemistry Training**  
*Friday, May 10; 9:30 am – 12:30 pm*  
Volunteers are needed to assist with the water chemistry component of our Watershed Stream Study. This year-round study gives volunteers a chance to encounter our riparian habitats through all seasons, record data, conduct field work and lab analysis. Brush up on your water testing skills, or come learn about the study for the first time. Wear comfortable walking shoes and dress for the weather. For adults and families with children at least 10 years old.

**Education: Canoe and Kayak Training for Canoe Guides**  
*Sunday, May 19, 9:00 am – 3:00 pm*  
In this workshop volunteers learn how to lead canoe and kayak trips at Jug Bay. On land, we will first review volunteer responsibilities, canoe safety, and paddling techniques, canoe routes, and an overview of Sanctuary policies. We will then launch canoes and learn about canoe rescue, followed by a trip up river and through some of the marsh channels to see the varied habitats and life of the spring wetlands. Dress for the weather and bring a snack. For adults and older teens with paddling experience.

**Volunteer Sleepover**  
*Saturday, May 25; 8:00 pm – Sunday, May 26; 10:00 am*  
Active volunteers are invited to camp out with staff for a night of frogs, fun, and fire. We’ll start with a night hike to listen for secretive marsh birds and choruses of frogs. Later, we’ll relax by the camp fire. In the morning we’ll start with a light breakfast before closing out the event with a bird walk. For adult volunteers. Bring your own camping gear and snacks. Space is limited.

**Stewardship Workday**  
*Saturday, Jun 22; 3:00 – 5:00 pm*  
**Mile-a-Minute Removal**  
Help us prevent these non-native invasive plants from taking over our forests and fields. Wear thick work gloves if you have them. Scouts and community groups are encouraged to attend. For adults and children at least 6 years old.

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*Alder fly*
Volunteer Social Highlights

On Sunday, January 27th, 80 volunteers gathered so that the staff could honor all the 2012 accomplishments we achieved together. The pictures below were taken during the celebration by Rob McEachern. Group photo by Donna Rhodes.

First we celebrated youth volunteers. Present were: Daniel and Matthew Lind, Allison Redington and Erica Loudermilk.

We had great turnout from our five year volunteers. From the left, back row are: Harry Coulombe, Manfred Muecke, Denny Townsend, Ernie Goins, Jean & Jack Filigenzi, (return volunteer) Susan Nugent and Cliff Loudermilk. Front row from left are the Lind Family, Sara Van Shaik, Anne Muecke, Karen Caruso, Karyn Molines, and Erica Loudermilk.

Mudmucker is a distinct honor that not all volunteers achieve. Dedicated volunteers who devote 100 or more hours over at least three years earn the title of Mudmucker, a membership card, and their very own jar of Jug Bay mud. Present were: the Lind family, Manfred & Anne Muecke, Stan Hopkins, Dave Mozurkewich, and Darcy Herman.

Several milestone volunteers were unable to join us, but we thank 10 year volunteers Bob Ford and Bruce Weidele, and 15 year volunteers Mary & Gordon Burton and Jeff Shenot for everything they’ve done over the years.

20 year herpetology volunteer Robert Frezza. Scientific Advisory Board member Kathy Szlavecz, our other 20 year volunteer was unable to join us.

We welcomed first year volunteers to the Jug Bay community. Present were: Charlie Fuzak, Allison Redington, Sarah and Shane Guan, and Regan Christian.

Dennis Whigham, a Scientific Advisory Board volunteer, and Mike & Susan Blackstone all celebrated 25 year volunteer anniversaries with the close of 2012.

We gathered on the observation deck to get a group photo. Thank you all for a great 2012!
feeding on the snakehead larvae. Images are courtesy of their office.

**What You Can Do To Help**

No one knows how the Northern Snakehead will affect the Jug Bay area, but all non-native invasive species have a suite of similar traits that enable them to be invasive, so we can hypothesize about potential scenarios. Disappointingly, their invasion is all but inevitable. The best case scenario may be that they reach a new equilibrium within our ecosystem and become just another fish competing with all the others. In the mean time, we can reduce their spread.

**Go fishing!** The snakehead readily bites at lures during the breeding season making them a fun sport fish and remember, they’re edible too! Maryland DNR has a great website, Angler’s Log, to report your catches and be entered for prizes. There is also a sporting tournament each summer; bookmark June 1-2, 2013 and visit http://potomacsnakehead.com/ for details.

**Volunteer!** This season we will be launching a new volunteer initiative to begin monitoring snakeheads in the Jug Bay area. By boat and by land we will map and capture nests of snakeheads to gather fecundity information. We will analyze stomach contents to validate the literature. We will provide resources and educational opportunities for the public. In addition, we will call upon our colleagues with Patuxent RiverKeeper, Patuxent River Park and Merkle Wildlife Sanctuary to help us study predators of snakeheads by looking for remains in osprey nests and river otter scat.

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**Snakehead Surveys**

- **Friday, May 10; 7:00 am – 11:00 am (boat)**
- **Friday, May 17; 10:00 am – 2:00 pm (land)**
- **Friday, May 24; 7:00 am – 11:00 am (boat)**

Volunteers are needed to begin documenting the spread of the non-native invasive Northern Snakehead fish. We’ll search shallow wetlands by boat and by land to record the location of nests and will remove fish as possible. For teens and adults.

**Snakehead Safari Children’s Discovery Series**

- **Saturday, Jun 15; 10:00 – 11:30 am**

Learn about the non-native invasive snakehead fish through an interactive game and how you can help keep them out of our rivers and ponds. We’ll follow it with a tour along our Marsh Boardwalk. All ages welcome.
This time of year you may notice bundled up fisherman standing along the shores of our freshwater rivers and creeks. You might wonder what in the world are these people doing; no leaves on the trees, heavy jackets and gloves, not your typical idea of fishing. These fishermen are casting their lines for yellow perch. The perch gather to spawn this time of year and the fishermen follow soon after. *Perca flavescens*, more commonly known as yellow perch, are sought after by both commercial and recreational fishermen. As its name suggests, these fish do have yellow on the fins and belly, but overall are more of an olive-green color. Since the 1960’s their numbers have declined, increased, and then declined again within the last decade. It’s enough to drive a fisheries biologist crazy, especially given that any number of factors or combination of factors can contribute to population fluctuations.

At both Jug Bay and Otter Point Creek, CBNERR biologists, working with site staff and volunteers, sample for larval yellow perch starting in mid-March. The survey conducted twice weekly involves towing a plankton net behind a boat at several locations. The net is cone shaped with a jar attached to the end. When you examine it closely you can see the fine mesh. The net is towed for two minutes, retrieved, and the contents dumped into a tray. The next step is to look for the perch larvae in the tray. Being small and clear, a tip is to look for “two eyes and a wiggle”. Because yellow perch spawn so early, they are typically the only larval fish in our samples. We do however start to see other larval fishes towards the end of the survey period. This survey, conducted on several Bay tributaries in spring, helps DNR biologists track how yellow perch spawning success responds to human development. Last year, we added the survey at Jug Bay as well. However, what we noticed in 2012, on both the Bush and Patuxent rivers, was that numbers were extremely low. We saw a few larval perch when we first surveyed, then almost nothing. One year of bad data does not spell disaster; however, it does remind us that we must watch catch numbers closely when the 2012 class reaches harvest age in approximately 4-5 years.

While it is difficult to pinpoint the cause of decline in a fishery, DNR biologists believe they have found a correspondence between increasing development in a watershed and a decline of yellow perch spawning success. That means at and beyond heavily suburban levels of development, the spawning success of yellow perch decreases. So where do we stand? The Bush River and the Patuxent River watersheds are both close to this level of development. We need to keep a close watch on both of these systems and monitor the spawning success of yellow perch. If you are interested in volunteering with the yellow perch monitoring effort, please call the Wetlands Center.
You’re invited to the Spring Festival!

**Saturday, May 4; 10:00 am – 2:00 pm**

Celebrate spring with us at the Glendening Nature Preserve. Enjoy a hayride, take a hike with a naturalist, sit in on a gardening workshop, make crafts, and much more, ALL FREE! Help the Friends of Jug Bay raise money by purchasing refreshments, buying native plants for your garden, finding a bargain at the Nature’s Market, or bidding for nature items at the silent auction. Rain or shine. Come to the Plummer House (on the corner of route 4) at 5702 Plummer Lane, Lothian.

**Schedule of Events**

- **Birdwalk** (at McCann Wetlands Center) 8:00 to 11:00 am
  
  Available all during the festival – 10:00 am to 2:00 pm
  
  - Children’s Crafts
  - Drinks & Snacks
  - Information Table
  - Live Animals
  - Silent Auction
  - Nature’s Market sales table
  - Plant Sale: Native Perennials & Butterfly Attracting Flowers

- **Hayrides** – 10:15, 11:15, 12:15, 1:15

- **Amphibian Adventure Hike** – 10:30, 12:30
  
  (1 hr, to vernal pool, for adults, families with 6+ age kids)

- **Seminar: Native Medicinal Plants and Herbs for the Garden** – 10:30 to 11:30

- **Natural History Hike to Chris Swarth Boardwalk** – 10:30, 12:00
  
  (1.5 hrs, for adults)

- **LUNCH AVAILABLE** 11:00 to 1:00

- **Composting 101 Demonstration** – 11:00, 12:30

- **Garden Tours** – 11:30, 1:00

**Attention Volunteers and Friends of Jug Bay**, we will be accepting donations for the Spring Festival fundraiser. See page 3 for details.

**Donations**

- **Tom Petska**: digital camera
- **Mike Quinlan**: *Animal Skulls – A Guide to North American Species* by Mark Elbroch; *Handbook for Butterfly Watchers* by Robert Michael Pyle, four copies of *Pocket Guides to Snakes, Frogs, and Toads*, and for having radio telemetry equipment repaired
- **Eric Lind**: gardening tools
- **Karen Caruso**: new clipboards
- **Stan Hopkins**: *Plant Identification Terminology* by James and Melinda Harris
- **Harry Coulombe**: portable wipe board

**Thank you!**