

School at the zoo

By Ed Plumstead
Director, Plumpton Park Zoo

When I was a little boy growing up in Wilmington in the early 1930's, as a special treat, my parents used to take me to the old Brandywine Zoo. After all this time, I can still remember the great Bison bull who used to be kept there, can still recall the lion's roar, the bear's shuffle—and the smell of the monkey house.

Although the zoo was tiny and the animals poorly displayed by present-day standards, these visits made my picture books come alive. There was no one at the old zoo to explain the animals' distinguishing characteristics or their diets and habitats, but the experience was lasting and important, none-the-less.

Better than a guided tour

A much better opportunity was afforded the second graders of Cecil County this Autumn, when all of them were bused, class by class, over a five week period, for half-day learning trips to Plumpton Park Zoo. The teaching staff of Fair Hill Nature & Environmental Center took them through the zoo in small groups for an adventure in studying animal characteristics.



Each morning of the class sessions at the zoo, teachers Holly Hannum, Janet Hokuf, Julie Klapproth and Erlene Michener would gather in the zoo's classroom building at 8:30 or 9:00 to prepare for the day's students. On a typical day, Mrs. Klapproth and Mrs. Michener would be awaiting the arrival of the first buses in the parking lot at 9:30, while Mrs. Hannum and Mrs. Hokuf would be adding the finishing touches to the exhibits and touch-tables in the classroom. As the children disembark from the buses, zoo-visitor etiquette is explained to them: "Please do not run in a zoo, because the animals may start to run, also. Please walk quietly, because wild creatures are easily frightened. Stay with your teacher, etc., etc." Each class is divided into small groups, and each child wears a name-tag. On the very few rainy days, ponchos from the Nature Center are donned.

Animals sometimes surprising

As a typical ten-child group works its way through the zoo, the children learn distinguishing characteristics of mammals, birds, reptiles, insects and amphibians. Students tentatively touch a small snake and find that it isn't slimy. They peer into a bison skull and hold some of the thick winter coat of fur which kept the animal warm. An ostrich egg is compare with a robin's little egg, and, in his pen, Tyrone, the nine foot tall ostrich

see Zoo page 5



Fair Hill Nature & Environmental Center habitats

January 1992

Fair Hill Environmental Foundation, Inc.

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New marsh creates wildlife habitat

Marsh at Nature Center funded entirely with outside grants

By Karen Keenan and Cliff Bienko, Cecil Soil Conservation District

Once the area was meadow. Now a blue heron fishes the waters, and turtles bask on the island shore. Butterflies dance among the purple flowers of the pickerel weed, while the mallard guides her brood through the shallows. This vision started as a "what if" idea in 1990.

Creating an artificial marsh for hands-on instruction was seen as an ideal use for the meadow behind the Nature Center. From the beginning, the marsh project had plenty of support. Fair Hill Environmental Foundation's Ralph Young and Linda Bystrak enlisted help from the Cecil Soil Conservation District (CSCD) and the Maryland Department of Natural Resources (DNR).

Cliff Bienko, District Conservationist for CSCD, served as project coordinator. He was also instrumental in obtaining financial support from the CSCD for the project. Also, the Waterfowl Festival in Easton, Maryland, represented locally by Bill Veasey, is contributing to the remainder of the costs. Maryland Department of Natural Resources' Forestry Division will contribute to the wooded wetland, to be planted by local Scout troops.

CSCD Tinkers with marsh design

In the Spring of 1990, Conservation Technicians, Nancy Speck and Wayne Fletcher completed a topographical survey of the site. Soil Conservation Engineer, Ed "Tinker" Todd, with Nancy Speck, worked on the engineering design for the marsh site.

The marsh was designed to have a wooded wetland, an emergent wetland that attracts waterfowl, and a shallow water wetland. Also, a unique butterfly garden was planned. Since water depth is a controlling factor in the creation of a shallow water marsh, an overflow pipe, allowing for easy adjustment of the water

depth, was designed.

In the Spring of 1992, the overflow pipe will be adjusted to lower the water level. Millet will be planted in the emergent wetland area to provide food for wildlife. After the growing season and first frost, the overflow pipe will be adjusted again to raise the water level. This will flood the wooded and emergent wetland with six inches of water.

The water supply for the marsh comes from a nearby creek. Two types of stream water collection systems are connected to one main line to the marsh. The first collection system is a horizontal perforated pipe laid in a trench across the stream bed. The other collection system is a vertical perforated pipe inside a well ring. An observation hole was included at each intake to allow CSCD to compare the effectiveness of each.

When designing the marsh, specific wildlife habitats were considered.

Turtle habitat will be enhanced by strategically placing logs in sunny areas. A nesting island was created to provide protection and cover for waterfowl. Special wildflower species were selected for attracting a variety of butterflies. A rock pier and an earthen berm were included in the design to allow visiting nature enthusiasts easy access to the marsh.

DNR, MDE, Army Corps permits needed

Since it was necessary to work in the stream bed, and part of the marsh site is considered to be nontidal wetland, permits from federal, state and local agencies were needed. DNR, Maryland Department of the Environment (MDE) and the Army Corps of Engineers worked with CSCD in obtaining the needed approvals for the marsh project.

The invitation for contractors to bid

see Marsh page 2



Minutes of the General Membership Meeting, Sunday, November 3, 1991

The meeting was called to order in the Boy Scout campsite by the Big Elk Creek at 5:05 p.m. by president Ralph Young. Linda Bystrak read the minutes of the last meeting. The minutes were approved by all of those present.

Ralph then gave the Treasurer's Report for Mr. Noll, which indicated that we currently have a balance of \$27,850.78. He then proceeded to go over the budget for our annual report, which covered the period from September 1, 1990 to August 31, 1991.

Our total budget this year included:

Income	\$88,783.86
(\$76,000 from grants)	
Expenses	\$82,205.40
(\$49,000.00 on salaries for 6 staff	

members, and \$15,000 on nonexpendable equipment, e.g. microscopes, photocopy machine, etc.
Balance\$6,578.46

The remaining balance will be used to offset our 12 1/2% budget cuts from the county grant money. The treasurer's report was approved by all present.

Ralph indicated that the major topic of concern at the November 7, Board of Directors meeting would be how to find more financial assistance. Ralph then asked for volunteers to help Andrew Ridge on the Friday and Saturday after Thanksgiving, to finish roofing the pavilion.

The meeting was adjourned at 5:20 p.m., when all of the members present started roasting their marshmallows over the bonfire!

VISITORS: SEPTEMBER 1990 - AUGUST 1991

	students	teachers	chaperones	others	total
Fall '90	3,873	152	345	472	4,842
Winter '90-'91				445	445
Spring '91	2,468	78	274	956	3,776
Summer '91	282			608	890
TOTAL	6,623	230	619	2,481	9,953

Eagles at Fair Hill

It all started with Niles Bolen, Boy Scout Troop 443, who built a campsite at Fair Hill. Then James Lynn, Troop 30, and Bob Elam, Troop 443, each built two foot bridges.

Now Mike Keppa, Troop 443, has finished color coding our trails and is working on a map board.

Andrew Ridge, has finished building a beautiful pavilion to be used as an outdoor classroom/picnic area. We would like to thank those members from the Cecilton Lion's Club—Ralph Young, Ed Sharrow, and Dick Hall—for helping Andrew and his other volunteers for doing so much work. The materials were provided by an anonymous donor, whom we also would like to thank.

Another eagle candidate, Steve Copenhagen, Troop 131, has received two utility poles from Conowingo Power Company to make his foot bridge in Stovepipe Hollow during March. Now a sixth Boy Scout has called us to ask if he can do a project this spring.

We are very proud of these young men, not only for their hard work, planning and determination, but also that they have chosen Fair Hill to be the recipient of their work. As a small token of our appreciation, a plaque, *Eagles of Fair Hill*, with all of their names on it will be placed inside the mapboard that Niles built at the Fair Hill Campsite.

Marsh from page 1

on the marsh project hit the newspapers in late August of 1991. The contract was awarded to the lowest bidder, William Simpler, Jr., of Millington, Maryland.

Construction of the marsh began on September 27, 1991. Wayne Fletcher and Karen Keenan, CSCD technicians, met with Mr. Simpler at the site. Mr. Simpler's crew began by surrounding the site with a silt fence. During construction, this fence prevents soil from entering the nearby streams. CSCD technicians set limits for construction and established grades to allow the crew to create the envisioned project.

Why an artificial marsh?

The marsh project's major purpose is to demonstrate the principles involved in producing an artificial marsh. Farmers, developers, road builders and landowners may find it necessary to relocate or restore a marsh because of current wetland regulations. Soon, they will be able to see the Nature Center's short "How to..." video about the construction of an artificial marsh. Also, they can see the marsh first hand at Fair Hill. The video, produced by AVIO Productions, Rising Sun, Md., will be available after the marsh's completion in April 1992.

Now, if you stand behind the Nature Center early in the morning and watch the mist rise, you will see that our vision is becoming a reality.

Summertime 1991

By Holly Hannum, *Teacher/Naturalist*

If you thought that you heard Indian war whoops coming from Fair Hill this summer, don't be alarmed. It was just summer campers involved in our popular *Indian Trails* program. Braves with names like Raging Bull, Dances on Toes, and Wandering Cloud raced up hills and through streams with Chief Running Fox (you may also know her as Erlene). They laid trail markers with stones and sticks for the rest of the tribe to follow, eventually circling back to ambush the innocent followers.

Our youngest campers enjoyed studying salamanders, turtles and squirrels with Janet. They hunted peanuts, swallowed worms (gummy) and raced turtles. A good time was had by all.

Older campers spent a whole week in hiking camp. Summer rains and our new ponchos added to the excitement of exploring a new trail every day.

Summer leaves were carefully selected and rolled into clay for printing during our Magical Clay program. An assortment of creations were molded, pounded, glazed, and fired in two summer class sessions.

These programs are just a sampling of the learning and fun experienced by the 282 campers in our first Young Naturalist Summer Day Camp. We are looking forward to planning an equally exciting 1992 summer program soon.

Ed. note: Summer Camp in 1992 will feature Young Naturalists, hiking, and the Maryland Department of Natural Resources' Junior Ranger programs. Full details will be available by March 1992.



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Editor, Designer Betty Salmon-Wilk
Associate Editor Linda Bystrak

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Reservations are required.

(410) 398-4909



Calling all bird(er)s

By Charlie Gant

The Christmas season brings to all of us wonderful feelings: religious, family, presents under the tree, decorations and others. To birders, the season also brings the Audobon Christmas counts, a day when birders inventory all the birds that they can find in a fifteen mile circle.

If you're a counter, you plan your strategy for weeks ahead of time, worry about the weather—counts are *not* postponed come rain, sleet snow or tidal wave— and gather your forces.

The early birder catches...

This year's Elkton bird count day was on December 28th. Paul Bystrak, Bob Hickman, Geraldine McKeown, my wife, Jimmie, and I were charged with the Elk Neck part of the territory. After worrying about rain, which had been forecast early in the week, the day dawned clear with light wind and a high in the forties, pretty nearly perfect.

Before dawn, a short walk in the woods near home produced a screech owl and a great horned owl answering my owl calls—so far, so good. As the morning wore on, we began to add new species: bluebirds, woodpeckers, titmice and chickadees, and others all answering our calls.

We gathered for lunch to plan the afternoon and to find, hopefully, a woodcock that my wife and I had flushed yesterday in our woods. Woodcocks are here by March, but on a Christmas count, it's a good bird. Two steps into the woods' edge were we had seen it yesterday and it rocketed out from beneath my feet. Later we even found a second bird about a mile away. At sunset, we all assembled for our final tally: 84 species of birds including the woodcock, more hermit thrushes than I can remember, three bald eagles and a barred owl which sat out on a bare branch and stared at us as we stopped the car to stare back.

All in all a fine day of birds and memories of other days equally fine, but every one of them different.

Bluebirds now nesting all over Cecil County

By Jerry Newman

The Fair Hill Nature & Environmental Center is playing a vital role in the Bluebird Recovery Program in America. Spearheaded by the North American Bluebird Society, numerous local organizations and individuals have spread out across the United States and Canada, spreading the word about the plight of the Bluebird and our other native cavity-nesting birds.

Three years ago the Maryland State Department of Natural Resources (DNR) placed 100 bluebird boxes in suitable locations on the 5,000+ acres that the state owns at Fair Hill. These boxes are currently being monitored by several Girl Scout troops from Cecil County.

Girl Scouts house bluebirds

Prior to the Girl Scout troops taking over the monitoring of the boxes, a conference for their leaders was held, on January 27, 1991, to give them an overview of the program. Then in February and March of 1991, the girls were given the program which consisted of a lecture, a video program, a question and answer period, and a display of nests of other birds that use the bluebird boxes.

At this point the girls constructed their own nesting boxes from kits precut by Sue Downs of Cecil Commercial Interiors in Rising Sun. The girls took these boxes home to place in their own neighborhoods. To say the least, it gets quite

Holiday fun

By Joan Gaffney,
4-H Extension Associate, Cecil County

Saturday, Dec. 7th, over 100 people joined an Old Fashioned Holiday Workshop conducted by the Cecil County 4-H and the U. of Md. Cooperative Extension Service at the Nature Center.

The classes were planned and taught by teens Kenny Adams, Aaron and John Barber, Katie Barnett, Adam Barkafski, Louis Meryman, Rebecca Stowe and volunteers Sylvia Barkowski, Donna Byrnes, Harriette Rensch and Susan Sprout. Participants made home-made lollipops, gingerbread houses, cookies, bird treats, fire starters, ornaments, and learned new ideas on how to wrap gifts. Over fifty wreaths and centerpieces were made. These workshops were taught by Mike Ensor, Extension Agent-horticulture. Master Gardener Barbara Kelly assisted Mr. Ensor.

noisy when twenty to thirty people are building their nest boxes.

Besides the Girl Scouts, we had a workshop for the general public, 4-H clubs, Cecil County Day Care Association and Home Teaching Group. All told, one hundred sixty three people attended these sessions in 1991.

Already, we have signed up two private schools, for a total of one hundred six students that want to have the bluebird workshop in 1992. If you belong to an organization that would like to have this program for their members, give us a call at the Nature Center.

NEWSLETTER SUPPORT

The Fair Hill Environmental Foundation has about 300 memberships, an additional mailing list of over 100 names, and distribution in the public libraries and the Cecil County Courthouse.

* * *

We thank the Peoples Bank of Elkton for helping to support this issue of our habitats newsletter.

ATTENTION: ALL CECIL COUNTY STUDENTS

YOU MAY QUALIFY FOR
FAIR HILL ENVIRONMENTAL FOUNDATION'S

1992 YOUNG ENVIRONMENTALIST AWARDS

The Fair Hill Environmental Foundation is sponsoring awards for young people who, through their activities and projects in Cecil County, have shown an outstanding awareness, concern and dedication to the environmental issues and challenges of our time.

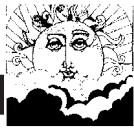
This contest is open to elementary and secondary students in Cecil County, Md.

CRITERIA FOR JUDGING:

SCHOLARSHIP	30 POINTS
Completed guidelines format ...	5 points
Neatness	5 points
Correct spelling, grammar, punctuation	5 points
Geography-Cecil County map a must!	5 points
Workbook or log	5 points
Sketches, photo, video or media coverage	5 points
COMMITMENT & EFFORT	35 POINTS
Statement of purpose, i.e. why chosen	5 points
Effort - hours and scope of work	30 points
IMPACT	35 POINTS
On students and community ...	5 points
On local environment	5 points
On Planet Earth	5 points
What did the individual or group learn?	5 points
Did project teach others or heighten community awareness?	5 points
Did project spark similar activities elsewhere?	5 points
Ingenuity, innovation and creativity—new approaches to things already done	5 points

The students will be nominated for this award on the basis of the above criteria. Nominations may be made by school principals, teachers or club leaders. Rules and procedures for nominations are available from the Fair Hill Nature and Environmental Center, 630 Tawes Drive, Elkton, MD 21921. Phone (410) 398-4909 for entry information.

Awards provided by Cecil County Commissioners.



habitats NetWork

VISITORS

American Entomological Society members and guests from 6 states
Wilmington Trail Club
Cecil County Senior Citizens
CHESNET Teacher Workshop participants
Boy Scout Troop 120
Greenfingers Garden Club
Cecil County Day Care Association
Green Acres Summer Camp participants
St. Mary Anne's Episcopal Church group
4-H Holiday Workshop participants

PATRONS

Mr. & Mrs F.L. Abbott
Mr. & Mrs. Reid Cameron
Mr. & Mrs. Wample
Mr. & Mrs. C. Wagner
Mrs. Richard C. du Pont
Miss Patricia du Pont
I.C.I. Americas
West Nottingham Presbyterian Church

GRANTS

Cecil Soil Conservation District - money for marsh construction
Maryland Association of Soil Conservation Districts - \$206 for soil testing equipment
Chesapeake Bay Trust - \$750 for teacher training workshop

DONATIONS

Ralph Young - 2 cases of paper products, 11 large animal pictures
Jerry Newman - Landscaping book, plastic nest boxes
Dean Ammons - craft book, dictionary
Fletcher Williams - taxidermy specimens (real stuffed animals)
W.L. Gore & Associates - 71 ponchos

Asplundh - many truckloads of wood chips
Bill Worthington - photos, slides
Paul Bystrak - tools to measure tree heights
American Entomological Society - insect pins, plastic jars, 1 dozen insect replacement nets, 1 dozen insect pinning blocks, 1 dozen spreading boards

VOLUNTEERS: Thank you... -----

Conowingo Power Company, for providing and delivering two 35 foot utility poles to be used to make a foot bridge in Stovepipe Hollow by Eagle Scout candidate, Steve Copenhagen.
Peter Sformo, for removing the tree branches that were hitting and breaking our slate roof tiles each time the wind blew them.
Trails Committee members who volunteered their time in August to prepare the trails for returning students.
Warren and Vivien Davies, for leading the Wilmington Trail Club hike at Fair Hill.
Mike Klapproth, for hand drawing an attractive location map of the Nature Center.
Sue Downs of Cecil Commercial Interiors, for cutting out another 100 bluebird houses.
 Summertime water monitors: **Dennis and Sherry Brooks, Gaylord Moody, Jerry Newman, Helene Kedziora, Holly Hannum, Janet Hokuf, Julie Klapproth and Jim Crothers.**
Teaching Aids Committee members, **Jerry & Madeline Newman, Liz Wohner, Grace Feeny, Bill Parks and Laverne Crump**, who attended the July work day and painted, built our turtle cage, assembled spreading boards, helped set up our orienteering trail, reassembled our soil demonstration box,

planted flowers, and worked in the library.
Liz Wohner and Grace Feeny, for working three times on our library this year.
Liz Wohner, for teaching one of our Young Naturalist summer classes.
Ralph Young, Ed Sharrow, Dick Hall and Paul Bystrak, for helping Andrew Ridge and his volunteer crew that worked on the pavilion.
Cecil County Roads Division, for providing help and equipment to dig the holes for the pavilion support poles.
Charlie Gant, for leading our Turkey Point hawk watch.
Jerry Newman, for teaching the Bluebird Program on November 14.
Andrea Barrier for helping with membership and brochures.

WISH LIST -----

- Adding machine/calculator with paper tape
- Household tools
- Garden rakes
- Hammers to make birdhouses
- Real stuffed animals - taxidermy specimens
- Desk lamps
- Book shelves
- Natural history books
- Lawn mower
- Purple martin house
- Pitchfork
- Garden shovels
- Landscaping plants

FOR SALE -----

The Nature Center is selling the following items in its souvenir shop:
 NatureScope activity books for teachers and youth group leaders\$7.95
 T-shirts\$6.00 and \$8.00
 Note cards\$5.00
 Bluebird houses\$7.00 and \$8.00
 Flower seeds
 Bat houses\$35.00

VOLUNTEER OPPORTUNITIES:

Phone us at the Nature Center
 (410) 398-4909

Opportunities for artists

Ever dream of creating a room that would cause the eyes of its visitors to open in surprise? That is our goal at the Center. We want to paint life-size murals on the walls of our *stream room* to simulate a wetland environment. Raccoons hiding amongst the cattails, frogs and turtles on the banks, life-size great blue herons feeding on fish, dragonflies flying overhead will give our aquatics class-

room real atmosphere.

The center of the room will contain a small pool of water filled with native fish, tadpoles, water striders, etc. caught by some of our fourth graders during their spring field trips. Over 3300 students will use this room each year, so your mural will be viewed by a large audience.

Unfortunately, the Nature Center has only enough money to provide paint and brushes. We would like the room to be completed by April 1st when Spring classes begin. If you are interested in this exciting project, please phone right away!

Water testers

Adult volunteers are needed on all of our Cecil County waterways to help back up the student testers. These volunteers will be re-

sponsible for testing their waterway whenever the student groups are unable to test. Some of them may also be asked to take a water sample to the middle school every two weeks. We will provide training and test kits.

Bluebird Program needs your help

We need more weekend volunteers to help Jerry Newman with our Bluebird program. His classes run about two hours. He needs helpers to oversee the construction of his birdhouse kits by the youth and civic groups attending the program. Most of the houses are built on Saturday mornings or afternoons during February and March.

Cross-country run

We need at least a dozen volunteers to

Zoo from page 1

displays his plumage. The world's tallest mammals, the giraffes, look down in friendly interest at the groups of children, while Marty, the six hundred pound black bear, peeks out of his den somewhat doubtfully. Nicky, the cougar, shows a different sort of interest, licking his chops as the children troop by.

Many of the second graders had been to Plumpton Park before and knew some of the animals on a first name bases. This

sometimes presented a challenge to the teachers, but few of the children had viewed the animals in a class setting, really learning the classification of animals and their distinguishing characteristics.

Whether this county-wide experiment with Plumpton Park and Fair Hill pooling their resources can be continued is a big unknown at this point, but at least it has been shown to be a valuable and workable program for 1,082 Cecil County second graders in 1991.

Volunteer opportunities from page 4

help plan a cross-country run for next Fall. The starting point will probably be the Covered Bridge. Earlene Michener is in charge of this project. Please phone us.

Earth Day reception

If you like to make hors d'oeuvres and serve them at parties, then the Nature Center needs you! We are looking for donations of food to serve at our Earth Day reception, open to the public, at a cost of \$15 per person. The reception will be held the evening of April 24th. A planning committee is being formed now. Call 410-398-4909 ASAP!

Landscaping for wildlife

Melanie Hess, Jerry Hendricks and Rick Carrion are looking for more members to join the Landscaping Committee. Their next meeting will be on February 12th at 3:00 p.m.

Melanie, a professional landscape architect, has volunteered her time and talents to create a landscape design for the Nature Center that will attract wildlife. A load of topsoil is on the site; mulch is available and some plants donated by Holly Hill Nursery will be planted by volunteers. However, we are in need of more plants and more help.

Bill Worthington, our volunteer photographer is taking pictures before, during and after the planting to make a slide show, *Landscaping for Wildlife*, for our visitors. After viewing his slide show, visitors will be invited to walk around the Center to look at each flower bed.

If you or your group are interested in planting a flower bed or donating plants, please call. We need your help this Spring and Fall!

Mulching the marsh

Over twenty truck loads of wood chips which were donated by Asplundh need to be spread around the new marsh before April 1st. The chips will be on the trails in piles that need leveling. Volunteers will need to bring their own rakes. If you are an individual or are members of a youth or civic group and are willing to help, please call us to volunteer.

TAB's new members

The Technical Advisory Board meets every other month on the third Wednesday. Four new members have been added during the last year, giving us a total of nineteen members. We would like to welcome the assistance and advice of Nick Demond, Jerry Hendricks, Bill Worthington and Ted Haas. The Board's members and the groups they represent are as follows:

Cliff Bienko, USDA Soil Conservation Service; **Linda Bystrak**, Director, Fair Hill Nature & Environmental Center; **Rick Carrion**, High School Science Teacher, Cecil County Public Schools; **Bernardine Coleman**, University of MD Cooperative Extension Service/ 4-H; **Nick Demond**, Boy Scouts; **Patricia du Pont**, Local historian; **Charlie Gant**,

Cecil Envirothon needs competitors

ENVIROTHON, n., an environmental awareness competition which is designed to test high school students' knowledge of natural resources, including wildlife, forestry, soils, water and current environmental issues.

WANTED: Teachers who would like to sponsor a team of 5 - 6 high school students between 16 and 18 years old, one team per school, to represent Cecil County in the Maryland Envirothon, May 7-9, in Kent County. Five short weekly training sessions will be provided, for free, after school or on weekends, to help train participants.

The Cecil County competition is now in the planning stages. Maryland Envirothon topics include forestry, wildlife, wetlands, soil conservation and fish biology. The National Envirothon environmental issue this year concerns wetlands. Call Sharon Weygand at Cecil Soil Conservation Service, 392-3138, for more information.

Naturalist, Upper Chesapeake Watershed Association; **Anne Guns**, Girl Scouts; **Ted Haas**, University of MD Cooperative Extension Service; **Jerry Hendricks**, University of Delaware; *Landscaping Committee;* **Julie Klapproth**, Teaching Aids Committee; **Doug Koop**, Cecil County, Maryland, Planning Office; **Millie Ludwig**, Delaware Environmental Education Network (DEEN); **Jack Lynn**, University of Delaware; *Trails Committee;* **Jerry Newman**, North American Bluebird Society; **Barbara O'Neill**, Upper Chesapeake Watershed Association; **Peter Sformo**, Maryland Department of Natural Resources - Forestry; **Brad Walker**, Cecil Community College; **Bill Worthington**, Cecil County Arts Council.

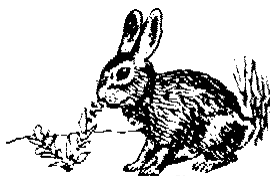
Students talk about Plumpton Park Zoo

By Miss Sharkey's second grade class, Kenmore Elementary School

On November 19, 1991, Miss Sharkey's class went to the Plumpton Park Zoo to discover more about the different animal groups. We learned a lot about each of the six groups and got to see live examples from all groups. Here are some thoughts about the zoo and our field trip [taught by the Fair Hill staff]:

- I liked the leopard and the bear. — *Bradley*
- I really loved petting the goats and sheep. And seeing the mountain lion and I loved the raccoon and bobcat. — *Martin*
- I liked petting the sheep and goats. — *Stacey*
- I liked the baby deer and it was cute. — *Jimmy*

- My favorite animal was the peacock, the leopard, and the deer. — *Leon*
- I like the zoo because of the nice animals. I liked the zoo because of the giraffe, deer and buffalo — *Lani*
- I liked the bear and the monkey, they were cute. — *Jacob*
- When I get ready to go to the zoo I jump all over the place. — *Steven*



HARD WORKING BATS NEED A GOOD HOME

We have one bat house for sale here at the Nature Center's gift shop.

Why would I want to have a bat house?

Bats are gentle, intelligent creatures, important enemies of insect pests, and extremely valuable for medical research, including research on navigational aids for the blind (bats themselves are not blind—they are just using sonar to hunt in the darkness).

How do I make a bat house?

Plans for building your own easy bat house are available at the Nature Center for the cost of copying and mailing. If you aren't handy or want to help study and preserve bats, write to Bat Conservation International, P.O. Box 162603, Austin, TX 78716. BCI sells bat houses. The proceeds go to worldwide bat conservation projects.



Curriculum/Program Guide

FAIR HILL NATURE & ENVIRONMENTAL CENTER

Sponsored by the Fair Hill Environmental Foundation, Inc. • 630 Tawes Drive, Elkton, Maryland 21921 • (410) 398-4909

P R O G R A M S

The Fair Hill Nature & Environmental Center serves public and private school students, preschool through college, from Maryland and nearby Pennsylvania and Delaware. The Center offers programs to reinforce environmental education in the schools. These programs are also available to youth and adult civic groups.



Sensing Nature Preschool/Kindergarten
2 hours + lunch Spring/Summer/Fall
Emphasis is upon using four of the students' five senses to explore a nature trail. Instructors explain that we will not use our sense of taste because tasting things in the forest could be dangerous. Basic vocabulary words e.g. bark, fern, moss, vine, etc. are introduced as students touch them. They will also be invited to use their senses during a short game. Students will then examine various native animals for their sense mechanisms.

Creepy Crawlers Preschool/Kindergarten
2 hours + lunch Spring/Summer/Fall
This program focuses on insects and the basic differences between insects and other creepy crawlers. Instructors use role playing, a short hike, a puppet, a craft, and a colorful praying mantis hunt to keep the students attention.

Habitat Hunt Grades 1 or 2
2 hours + lunch Spring/Summer/Fall
Students are given name tags to wear, indicating that they are to role play the part of a native animal. Then they hike through a field, forest, and along a shallow stream (or in it, if they have old shoes, no sandals). The purpose of their hike is to find the basic needs of animal life—food, water, shelter and air. Special emphasis is put on habitats. Students also are shown some native animals in artificial habitats around the Nature Center.

Eco-Chains Grade 3 or 4
2 hours + lunch Spring/Fall
Students receive an in-depth look at a field, forest and stream They sweep for insects in a field, participate in a *creature hunt* under logs and rocks, and wade through a shallow stream in search of its inhabitants. Emphasis is put on the food chains/webs that occur in each of the three habitats. Students are asked to role play those animals used in each chain. Vocabulary words, e.g. *predator, prey, scavenger, consumer, producer* and *decomposer* will be emphasized.

Entomology I Grade 7 through adults
2 hours + lunch Spring/Summer/Fall

Using our nets, students are taught how to collect, pin, label and identify insects to order. Students may combine their pinned specimens into a class collection to keep. Teachers should bring a shirt box containing a large sheet of Styrofoam to carry their specimens back to school.

Bluebirds Grade 4 through adult
2 hours + lunch All Year
(\$2.50 additional materials fee)

This program begins with a video about bluebirds. Students are then shown a variety of nests and eggs, and are taught how to distinguish those belonging to blue birds. Then they assemble their own precut birdhouse to take home. Finally they go on a short hike to see some houses already placed outdoors, to learn how to mount them and keep them clean.

Aquatic Study I Grade 4 through adult
2 hours + lunch 34 students max.
Available April 15-November 15

Students use aquatic nets and plankton nets to collect samples of organisms from two sites. The volume of water, its source and its temperature are recorded and compared to the plants and animals it contains. After collecting their samples, they return to the Center and use the microscopes to identify their specimens. Students must wear old shoes, no sandals.

Aquatic Study II Grade 4 through adult
4 hours + lunch 34 students max.
Available April 15-November 15

Same description as Aquatic Study I, except that two hours are spent collecting specimens at four different kinds of sites. A break for lunch is followed by an hour with the microscopes, then various other follow up activities. Extra time is spent on amphibians and discussion of metamorphosis. Students must wear old shoes, no sandals.

Clean Water Watch Grade 7 through adult
2 hours + lunch 33 students max.
Available April 15-November 15
\$.50 lab fee

Monitoring water quality using three different techniques is the focus of this

program. Students examine a stream for physical characteristics. They hunt for three immature aquatic insects whose presence or absence indicates the health of a stream. Then they collect water samples to use for chemical tests. Students must wear old shoes, no sandals.

Intro. to Orienteering Grade 5 through adult
2 hours + lunch All year
32 students max.

Students will learn how to understand and use a compass, and how to estimate distance using their pace. Then they will locate specific points in the field using only the compass, coordinates, pacing and landmarks. Students need to have studied angles in math class ahead of time.

Intro. Earth/Soil Sciences Gr. 5 through adult
2 hours + lunch All year
32 students max.

Students will examine metamorphic, sedimentary and igneous rocks; examine local landforms, determine soil pH, and use augers to take soil samples. *Panning for mica* in the creek is optional.

Forestry I Grade 5 through adult
2 hours + lunch Spring/Summer/Fall

Students will identify a dozen common trees in Fair Hill and discuss their uses. They will identify the characteristics of: coniferous and temperate deciduous forests; tap and lateral roots, canopy and understory, leaf color and fall. They will also take tree measurements, e.g., height, diameter, circumference and number of tree rings.

Green Machines Grade 5 through adult
4 hours + lunch Spring/Summer/Fall

Same description as Forestry I, except that the initial hike is longer. Also, extra time is spent demonstrating the importance of plants in controlling erosion and water quality. Vocabulary words, e.g., *xylem, phloem, transpiration, photosynthesis, monocot, dicot* and *vascular plants* will be demonstrated or stressed. Students will participate in a *tree web* and also examine locations going through different stages of succession.



There is a \$3.50 fee per participant for two hour programs, and a \$7.00 fee per participant for four hour programs. Teachers and chaperones are free. Visiting groups are invited to bring their own picnic lunches.

Nature Center programs challenged by budget crunch

Foundation forced to seek new funding sources sooner than anticipated

The Fair Hill Environmental Foundation's first Annual Report is ready for distribution to businesses, foundations, civic groups, and individuals interested in supporting our goals.

The goals of the Nature Center include helping residents of the tristate area to:

- increase their understanding of the natural world,
- recognize that there is a limited supply of natural resources left on the earth,
- become aware of the nature of our ecological problems,
- ...and foster a greater appreciation for the resources that our area and the Chesapeake Bay provide.

The Foundation is a nonpolitical entity, forbidden by its bylaws from participating in lobbying or environmental controversies.

Following are excerpts from the Foundation's Board of Directors meeting on January 9, 1992:

"...the new marsh video was shown...We currently have \$12,804.40 in our account...309 memberships: 86 individual, 219 family, and 4 group.

"...We had just received a letter from the Cecil County Commissioners saying that as of July 1, 1992 we will receive no more grant money from the county. This means that we will lose all of our operating expense money, and be on our own financially...

"...The 120 Sponsorship Packets sent out in December to local businesses and groups have been helpful. E. I. Du Pont de Nemours will sponsor the 4th grade aquatics program. Philadelphia Electric will sponsor a grade, and the Chesapeake City V.F.W. may sponsor a grade. Contributions promised by individuals...total over \$8,000.

"We still need...sponsors for three grades. Jim Campbell, a retired marketing specialist, [will] help us with...fund raising. Most...programs are too expensive for one sponsor...several businesses or groups can cosponsor a grade...Arlene [Patterson Graziano] suggested a small user fee...for students to pay ...if necessary, but...program could not be mandatory if we charged the students...

EXPERT COMPUTER ADVICE NEEDED

Our PC and Macintosh computers are connected to the same printer.

- How can we use this local network?
- Which software is needed for us to share files? The disk drives are different, so disks cannot be shared.

Also, we need 3 1/2" 2DD or HD disks to back up the hard disk drive.

If you can help, please phone

Betty Salmon-Wilk at (410) 398-4909.

"We will be presenting our annual report to the DNR [Maryland Department of Natural Resources] and the Cecil County Commissioners in...February. We may have to [pay] for our utilities in April 1992...we could trade...improvements to the property for utilities..."

"The Earth Day committee hasn't decided yet what to do, but we need to have an Earth Day Reception where we can dedicate the marsh..."

"We need...a permit to collect sales tax if we are to establish a gift shop..."

Nature Center Director's report to Board

"• Our marsh video, *Making a Wetland*, was shown at a state soil conservation meeting on December 13.

- ...set the video's price at \$19.95.
- ...students and members of youth groups will plant most of the plants in the marsh this Spring.
- DNR has assigned a new manager,

Ed Walls, formerly in charge of Cecil County Roads Department, to Fair Hill.

• Some...members [will]...coordinate a cross country race this Fall...starting point will be the Covered Bridge.

Thrifty, cost-cutting measures

"Finally, in view of our current economic situation:

• The director will work only part-time and do more volunteer work at the Nature Center

• Our administrative assistant will work a maximum of 15 hours a week.

• ...house cleaning service...reduced.

• ...seek...advertising for...newsletter.

• We will increase membership dues by \$5 beginning in April 1992.

• There will be no discount in our user fees for larger groups.

• We will open a souvenir shop,

• and encourage more use of the Nature Center by outside groups.

Students in CHESNET program continue to study waterways feeding Chesapeake Bay

by Julie Klapproth, *Teacher/Naturalist*

CHESNET (Chesapeake Environmental Science Network) is a network of students in nine eastern shore counties who monitor the Chesapeake Bay watershed. Students from Caroline, Cecil, Dorchester, Kent, Queen Anne, Somerset, Talbot, Wicomico and Worcester are participating in the program.

Each year at the Nature Center, students learn how to perform certain physical tests, biological evaluation developed by Save Our Streams, and chemical tests to measure the water quality of the Big Elk Creek. Chemical test kits were supplied to all Cecil County middle schools for students to use in monitoring a stream near their school, which they will continue to do throughout the school year.

At the schools, the students receive instruction in using METNET (Maryland Education & Instructional Technology Network) computer network which allows them to transmit their water quality data to the Nature Center, as well as to other schools involved in CHESNET. Funding for CHESNET was provided by the Chesapeake Bay Trust (test kits, chemicals, supplies) and the Cecil County Commissioners (teacher salaries and bus funds).

We need about \$6,800 for this program next year. Also, more adult volunteers are needed to assist with water quality monitoring and to help instruct the students. For information, to become a sponsor or a volunteer please contact the Nature Center at (410) 398-4909.

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Nature Center looking for more customers

Please help us to find more paying customers. We have about twenty school days in the Spring and 20 days in the Fall when we do not host free trips for the Cecil County public schools. Please give the Curriculum/Program Guide, page 6 in this newsletter, to a teacher or group leader and encourage them to call us.

The Fair Hill Nature & Environmental Center offers more than a hike in the woods. Our programs give children the chance to apply and reinforce classroom knowledge in our outdoor education programs. They use tools—microscopes, chemicals, nets—similar to those which scientists might use in their work.

The Nature Center offers programs for public and private school students, preschool through college, and for youth and adult civic groups in the tristate area.

habitats newsletter publication schedule

Due to our budget cuts, we will continue to print only two newsletters per year. However, we will print our Spring/Summer calendar on the back of our Summer Camp flyer, to be mailed in the Spring, and a Fall calendar in September.

Additional stories

Staff members and volunteers have written about the Nature Center's school programs. A flyer containing these stories is being prepared for distribution.

Environmental education courses for teachers

This Summer, the University of Maryland at College Park is offering two courses dealing with Maryland's natural resources. NRMT 487 and NRMT 497 (3 credits each) Conservation of Natural Resources I and II. Dr. Donald H. Messersmith, Professor Emeritus, Affiliate Professor in the Science Teaching Center will be the instructor. Dates are June 22 to

FEBRUARY

Feb. 10 Mon.—Chesapeake Bay Foundation workshop at Cecil County public Library, Elkton branch. Open to the public, **7:00-9:30 p.m.**

Feb. 12 Wed.—FHN & EC Landscape Committee meeting at Fair Hill. All volunteers are welcome, **3:00 p.m. R.S.V.P.**

Feb. 13 Thurs.—Teaching Aids Committee at FHN&EC. New members and other volunteers are encouraged to attend, **7:00 p.m. R.S.V.P.** Contact Julie Klapproth 392-4736.

Feb. 15 Sat.—Boy Scout Troop 131 camp over. Eagle Scout project.

Feb. 19 Wed.—Cecilpeake meeting. Major topics are *Earth Day* and *Envirothon*, **12:00-2:00 p.m.**

Feb. 19 Wed.—Technical Advisory Board. Those members interested in the Envirothon should come at **2:00 p.m.** Full meeting starts at **2:30 p.m.**

Feb. 29 Sat.—Fox Hunting at Fair Hill, 9:30 a.m. This is the same talk given last Winter by Erlene Michener and Miss Patricia du Pont, but this year, Erlene will give the verbal and AV presentation from 9:30-10:15 a.m. At 10:15, we will go outside and watch as Miss du Pont and company begin a hunt. Fox hunting at Fair Hill is unique. No guns, no red coats,

July 10, 5 days a week, all day; tuition \$710, fees \$61, book and field trips \$150.

During the second Summer session, July 13 to August 21, Dr. Messersmith will offer ENTM 407, Entomology for Science Teachers (4 credits) and EDCI 473, Environmental Education (3 credits). Call

--- CALENDAR ---

etc. Talk is open to the public. Donations will be accepted. Rain/snow date is March 28.

Feb. 29 Sat.—Youth group leader training session. If you would like to learn about how your group can be involved at Fair Hill, then please come to this free workshop at **11:00 A.M.** Wear old shoes. Rain/snow date is March 7 at **1:00 p.m.**

MARCH

March 5 Thur.—Board of Directors Meeting at FHN&EC. Snow date is March 12. **7:00 p.m.**

March 7 Sat.—Bluebirds in the Watershed. Co-sponsored by the **North American Bluebird Society** and the **Chesapeake Bay Trust, 1:00 p.m.** at FHN&EC. A program offered by Jerry Newman. He will show a 1/2 hour video about the birds, then teach how to monitor houses. Participants of all ages will build pre-cut bird houses which they may keep. Children, with their parents, should be able to use a hammer. Bird house cost is \$5 for members, \$6 for nonmembers. Snow date is March 14.

March 18 Wed.—Technical Advisory Board meeting at **2:00 p.m.** at FHN&EC. Snow date, March 25.

March 21 Sat.—4-H activity.

March 21 Sat.—Trails Com-

mittee and other volunteers, **1:00 p.m.** We need to repair the trails before students return April 1st We also need to mulch a trail around the marsh. Bring rakes, gloves and clippers. We may need a chain saw. Rain date is March 28.

March 25 Wed.—Forestry Board Seminar, open to the public, **\$35, 9:00 a.m.-4:00 p.m.** at Sandy Cove in North East. The topic is *Riparian Forests: Value, Function and Management*. Call (410) 287-2918 for information.

APRIL

April 24 Fri.—Earth Day Reception and Marsh Dedication Ceremony. FHN&EC, **5:30-8:30 p.m.** Members and guests invited. Reservations required because of limited space. Call 398-4909 or write for tickets before April 3rd. A tax deductible donation of at least \$15 per person should offset our costs and help raise some money for our programs. Several local politicians have promised to attend. There will be valet parking. A ceremony to dedicate our new marsh will begin around 6:30 p.m.

April 25 Sat.—(tentative date) Earth Day Open House. 10:00 a.m.-4:00 p.m. The public is invited to tour the Nature Center, look at our new marsh and take a guided nature walk. Walks will begin every hour on the hour.

for additional information (301) 405-3924 or 3142.

Some scholarships and grants are available for qualified educators. Contact Paul DeRoo, Conservation Education Council, 975 Indian Landing Road, Millersville, MD 21108. Phone (410) 987-1330. Deadline is May 1.

FAIR HILL ENVIRONMENTAL FOUNDATION, INC.

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