The Marsh Musings:

Newsletter of the Friends of Heinz Refuge at Tinicum

Spring 2009/Volume 0209

The Eagles are Nesting!

A pair of Bald Eagles has taken up residence on the Oak Island within the 145 acre refuge impoundment. They can frequently be seen flying over the refuge impoundment from the Dike Road, Boardwalk and Observation Tower where visitors are welcome to walk during daylight hours.

To protect the nest site, visitation has been limited to foot traffic only when in the Trolley Bed area near the nest and no one will be permitted off the road in this area, on the island, or on the impoundment waters near the island without a specific permit from management. The FWS will fine persons who approach too closely.

Volunteers interested in viewing the eagles can sign up at the refuge office to help lead guided "eagle walks" or be dropped off as a posted "eagle naturalist" to help visitors enjoy this incredible opportunity.

Volunteers are needed

- to help cover shifts in the visitor center and gift shop
- lead school groups and guided programs
- battle invasive weeds and maintain trails
- expand conservation outreach beyond across the greater Philly area
- Work on this newsletter or our web site
- Help with the work of the Friends of Heinz Refuge
- Contact the Refuge if interested at 215-365-3118

The first nesting pair of Bald Eagles in long while at Tinicum Marsh. Photo: Bill Buchanan, USFWS

FOHR Board Meetings : The public is always welcome to attend Board Meetings, which are at 6:30 pm at the Cusano Building Visitor's Center the 4th Tuesday of the Month

PLEASE RENEW: If you have not renewed your FOHR membership, please do so using the form on the next to last page.

Marsh Musings

A quarterly publication of the Friends of the Heinz Refuge at Tinicum

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The Friends of the Heinz Wildlife Refuge at Tinicum is a non-profit cooperating association founded in 1997 to assist the U. S. Fish & Wildlife Service in carrying out its educational, interpretive, and public use missions.

Donations:

Donations are always welcome to help us help the Refuge

The official registration and financial information of the Friends of the Heinz Refuge at Tinicum may be obtained from the Pennsylvania Department of State by calling toll-free within Pennsylvania, 1-800-732-0999.

Registration does not imply endorsement.

Photo Group Ready for Annual "Learning about the Environment through the Lens" Program for area High School Age Students

The FOHR Photo Group will once again be holding its annual program for high school age students, "Learning about the Environment through the Lens" or "Through the Lens" (TTL). This year the event will take place over 2 Saturdays, May 2 and May 16.

On May 2, from 9AM to 3PM, there will be a morning session of classroom work with Mark Bohn and Bill Buchanan. Mark will present the actual digital photography portion, including both the technical and creative aspects.

Bill will present the environmental education portion. This would include some background on the refuge and Tinicum Marsh and their role in the Delaware Estuary. Students will receive a complete handout package of all the material from both classroom sessions.

After the classroom sessions and lunch the students will be teamed up with Photo Group mentors who will work with them in the field. Students will have the opportunity to use their mentors' and the refuge's equipment. All of the images will be done on digital cards supplied by the Photo Group and they will be limited to a specific number of shots. The images will then be printed as well as loaded onto CD's.

On May 16, from 9AM to noon, the students, with assistance from Photo Group members, will edit their images and create individual and a "team" display. Their work will be exhibited at the visitor center for several weeks after which they are free to pick them up.

Students get to keep any left over prints and all their images on the Photo CD. They will also receive a certificate of completion, and a t-shirt from Tinicum Treasures Gift Shop.

Students should bring a lunch and/or snacks on May 2 and wear appropriate clothing for outdoor work.

Students who wish to participate in the TTL program must pre-register by calling the refuge at (215) 365-3118. It is limited to 6 students and will be on a first call first serve basis.

Meet Jin Hong, Our Newest Refuge Employee

John Heinz National Wildlife Refuge at Tinicum would like to welcome Jin Hong to our team as new FWS employee replacing the position vacated by the late Bill Thomas as Visitor Center Receptionist/Administrative Assistant. We are very fortunate to have Jin join us as a hard working, enthusiastic new FWS employee. Jin hold a biology degree from Lehigh University, spent two years in the Peace Corp running national environmental education programs in Benin, West Africa and worked at Klamath Basin Refuge (California/Oregon).

While Jin's primary duties will involve visitor center operations and assisting management with various administrative functions, her good organizational, field biology and computer skills will be a big help in other programs as well. Jin is fluent in both Korean and French, enjoys all outdoor activities, is a varsity tennis player and holds a black belt in Judo. Please welcome Jin Hong to our refuge family. When asked to provide us with a brief introduction, the following is what Jin asked us to share....

Jin Hong, Photo by Bill Buchanan, USFWS

"I was born in Chicago when my dad was a graduate student and lived there until I was 6. My family moved to Windsor, Ontario and lived there until I was 9, as my dad got a teaching job at the University of Windsor. We frequented Point Pelee National Park and I have many fond childhood memories related to that park. We then moved to Seoul, Korea because my parents wanted to be close to relatives. My parents as well as all my relatives are currently in Korea. I have an older sister named Young, and she works for a shipping company in Korea but was sent to work in Singapore for a year, so she will be there until this June.

I went to part of elementary school, middle school, high school and 3 semesters of college in Korea, before I studied and played tennis at Arcadia University for a year as part of a study abroad program. I loved the people, the area, and the opportunity to be a student-athlete so much (generally, you can only be either a student or an athlete in Korea), that I looked around for other schools in the area and transferred to Lehigh University in 2004.

I graduated in 2006 with a B.S. in Biology and was also on the crew team for 2 years. In the summer of 2005, I did an internship at Klamath Basin National Wildlife Refuge counting nests, doing brood surveys, tracking sage grouse using radio telemetry, banding ducks, pelicans and mourning doves.

After graduating from Lehigh, I joined the Peace Corps and served in Benin, a country in West Africa right next to Nigeria, for 2 years as an environment volunteer. My primary job was to work with the Pendjari National Park on environmental education in elementary schools in neighboring villages and translating tourist material from French to English.

Any kind of work moves along very slow in Benin as people are very laid back, so most volunteers have a lot of free time and work on many other projects. I had the opportunity to do some HIV/AIDS prevention education, radio shows, and create a girls' soccer team as part of one of Peace Corps goals to empower women.

I just finished my Peace Corps service in September 2008, and I feel very lucky to be back in Philadelphia after the Phillies won the World Series and as two Bald Eagles start building their nest at John Heinz Wildlife Refuge. I feel very welcomed already and I look forward to meeting everyone!

P.S. I forgot to mention that because I lived in Korea for so long, I'm still not very good at approximating with Fahrenheit, inches, feet, gallons, pints etc. I thought that might be amusing to people." (Editors Note: Not as bad as we are with metric. Jin is over 1 meter tall and under 100 kilos. That is as accurate as we get.)

Widener University & "Heinz" go to NAAEE

This past fall, Dr. Nadine McHenry from Widener University presented the research findings from two semesters worth of collaboration between the University and the John Heinz National Wildlife Refuge at Tinicum to conference attendees at the North American Association for Environmental Education

The partnership trains graduate science pre-service teachers to teach scientifically utilizing learning cycles, inquiry based learning, and the PA Department of academic standards. The graduate students then practice what they have learned during the Saturday Ecology Academy (SEA), where teen girls from the City of Chester are brought to the refuge to explore and learn over a series of five Saturdays.

Research results so far have shown that the length of exposure in teaching time to environmental concepts furthers environmental literacy. In other words, the graduate students showed more improvement in their environmental knowledge than the girls involved in SEA. These results have prompted Dr. McHenry and Environmental Education Specialist Erika Scarborough to begin to explore new ways to expose pre-service teachers to Environmental Education and infuse it into their training.

"Heinz" & Bartram's Garden explore partnership

Director of Education for Bartram's Garden Melanie Snyder and EE Specialist Erika Scarborough are in the preliminary discussions of an educational partnership that would utilize volunteers from both organizations to teach Philadelphia students about local birds. Look for updates on this exciting new partnership in upcoming additions of Marsh Musings!

Family fun at the Refuge

Make and Take Story time (Ages 3-5 yrs) at 1pm on the 3rd Saturday of each month. Join refuge volunteer Cynthia Moore for stories and take home crafts.

Nature Explorers (Ages 6 -10 yrs.) 2pm on the 2nd Sunday of each month. Join refuge staff to investigate Tinicum's natural wonders.

Anytime, Borrow a fun-filled backpack to take out on the trails. Learn about trees, insects, or mammals and become a Junior Naturalist! Ask at the front desk.

Fishing Rod & Binocular Loan Programs for All Ages. Want to fish but don't

Refuge Wrap-Up

Gary M. Stolz – Refuge Manager

Early February as we put together this spring edition of Marsh Musings the anticipation of spring is already in the air… and we know that it won't be long until our friendly famous Pennsylvania groundhog is looking for his shadow as a prelude to nature bursting back into life with warmer days of longer sunshine.

On the personnel front here at the refuge please welcome aboard to **Jin Hong** as our new visitor center receptionist and administrative assistant who joined the FWS staff at the refuge late January. You can read her welcome introduction included in this issue of Marsh Musings. Stop by to say hello to Jin when you get a minute…. or maybe even challenge her to a tennis match.

Also in FWS personnel, Law Enforcement Special Agent **Barry Jordan**, who shared office space at the refuge for a number of years retired at the end of January after a long career with the Service that began in the National Wildlife Refuge System. Best wishes to Barry in his retirement and many happy hunting days to follow.

Let's take a moment here as well to offer special thanks to our AmeriCorpsVISTA volunteer **Christine Bettis** for donating a year of her life to helping the refuge in her service to our nation. Christine's smile and enthusiasm will be missed by all of us as she has done a great job working with refuge volunteers, outreach and education programs and has now returned home to Michigan for her next totally excellent adventure…. with promises to come back and visit.

We have been blessed to receive an additional grant for continuation of our AmeriCorpsVISTA program and now welcome the familiar face of **Mike E. McMenamin** as our newest VISTA. Many of you already know Mike from his former internships and seasonal appointments at the refuge as well as his many hours as a dedicated refuge volunteer. Mike is an awesome, hard working biologist who has also worked both the PA Game Commission and USDA-Wildlife Service…..and it is great to welcome back Mike "E." who will now serve through November as a VISTA.

In the 12 acre marsh restoration project from the Sunoco pipeline spill, we are now preparing to **breach the dike** and install two **new bridges** later this spring which will reconnect this newly created wildlife habitat with the natural tidal flow of Darby Creek. Soil tests and germination rates of native plants that will be used at this site are also now being studied in the marsh machine greenhouse to achieve best planting options. We are also now preparing initial plans for **an additional 55 acre restoration** marsh restoration project from the Athos One Spill that will be located at the west end of the refuge along the Darby Creek Trail and look to begin work there in FY2010. Through continued marsh restoration, invasive species control, water management and other biological programs we now are seeing very positive results with many species of our native flora and fauna.

The most exciting recent event to share is the first **nesting pair of Bald Eagles** ever on the Refuge. This pair of majestic birds, our national symbol and formally federally listed endangered species, has taken up residence on the Oak Island within the 145 acre refuge impoundment and we wish them success in nesting. The eagles can now frequently be seen flying over the refuge impoundment from the Dike Road, Boardwalk and Observation Tower where visitors are welcome to walk during daylight hours. In order to best protect the nest site visitation has been limited to foot traffic only when in the Trolley Bed area near the nest and no one will be permitted off the road in this area, on the island or on the impoundment waters near the island without a permit from management. Volunteers interested in viewing the eagles can sign up with Suzanne at the refuge office to help lead guided "eagle walks" or be dropped off as a posted "eagle naturalist" to help visitors enjoy this incredible opportunity.

Speaking of volunteers, we are still **looking for volunteers** to help cover shifts in the visitor center and FOHR gift shop, lead school groups and guided programs, battle invasive weeds, maintain trails and expand conservation outreach beyond across the greater Philly area. Come join the team and be an active Refuge Volunteer.

Fishing tackle and binocular loan programs are available in the visitor center… and both are free of charge! Remember to bring your friends and families on out to enjoy the Refuge's many other free volunteer led guided programs offered every weekend and discover new ways to connect back with nature on your National Wildlife Refuge System…. where wildlife comes naturally.

John Heinz NWR at Tinicum-Spring 2009-Walks & Programs

March

1	Early Spring Birds	Doris McGovern	9am
7	Spring Sprouts	Dick Cloud	1:30pm
8	Beginning Birding	Denis Brennan	9am
10	Woodcock Walk*	Suzanne Kelley	**6:30pm**
14	Birds, Trees, and Flowers	Tom Reeves	9am
	Trail Tamers	Hank Hox	9am
	Story Time "Signs of Spring"	Staff	1pm
15	Birding by Ear	Gregg Gorton	9am
	Family Nature program-"Signs of Spring"	Staff	1:30pm
21	New Arrivals	Lynn Roman	9am
22	Early Birds	Barbara Heibsch	9am
24	Woodcock Walk*	Suzanne Kelley	**6:30pm**
28	Chilly Birds	Mary Ellen Krober	9am
29	Early Migrants	Doris McGovern	9am

April

4	Mid-spring Migrants	Lynn Roman	9am
	Spring Flowers	Dick Cloud	1:30pm
5	Migration Season	Edie Parnum	9am
11	Spring Birding	MaryEllen Krober	9am
	Trail Tamers	Hank Hox	9am
	StoryTime "Plants"	Staff	1pm
12	Who's Here Now?	Debbie Beer	**8am**
	Family Nature program "Plants"	Staff	1:30pm
18	Tinicum's Birds	Skip Conant	**8am**
19	Busy Spring Birds	Barbara Heibsch	9am
25	Birds, Trees, and Flowers	Tom Reeves	9am
	Darby Creek Clean-Up	**Staff & YOU!**	**8am-12noon**
26	Great Spring Birds	Edie Parnum	**8am**

May

2	Tinicum's Birds	Skip Conant	**8am**
	*"Learning about the Environment Thru the Lens"-For high school age Students-limited space	FOHR Photo Group	9am-3pm
	Glorious Spring Flowers	Dick Cloud	130pm
3	Birding at Tinicum	Barbara Heibsch	9am

May (Continued)

9	**International Migratory Bird Day**		**7am-3pm**
	Bird-a-thon	Skip Conant	7am
		Tom Reeves	8am
		Gregg Gorton	9am
	Birding games and programs from 10am – 3pm		
	Trail Tamers	Hank Hox	9am
10	Late Spring Birds	Edie Parnum	**8am**
	Family Program – "Birds"	Staff	1:30pm
16	Who's Flying Around	Mary Ellen Krober	**8am**
	*"Learning about the Environment Thru the Lens"-Follow Up from 5/2	FOHR Photo Group	9am-12noon
17	Late Spring Birds	Debbie Beer	**8am**
23	Tinicum's Great Birds	Lynn Roman	9am
24	Beginning Birding	Denis Brennan	**8am**
30	Beginning Birding	Lynn Roman	9am
31	Micro Adventures	Bill Buchanan	1pm

* Indicates pre-registration required. Call (215) 365-3118

***Ever seen a woodcock dance?**
Join us as we search for these elusive birds performing their spectacular evening dance on 2 Tuesday evening walks.

Mark Your Calendars!

Darby Creek Clean-Up

Saturday, April 25, 8-12noon*
Have a great time getting dirty!!

*** Please call 215 365-3118 to make reservations!**

For more information on these programs call (215) 365-3118

Additional programs will be offered by the Friends of the Heinz Refuge
Keep an eye on our website at heinz.fws.gov for more information

On hiking in the Philadelphia Area

By Paul Schubert, Philadelphia Trail Club

I am walking deep in a vast New Jersey Pinelands forest, having already been out on my trek for several hours, my car now six or more miles behind me. On my right is the Batsto River, one of the many small rivers that flow through the Pinelands. In front of me is a forest intersection where five sand roads come together. The Pines are known for being somewhat difficult to navigate for this reason, because of a superficial sameness that pervades the entire area among the many pathways and byways. I have, however, been coming to these forests since the middle 1970s. During the intervening years they have become a second home to me. Today, in early December 2008 I am reviewing a hike that will take place for the Philadelphia Trail Club in early Febuary, 2009.

Where did I develop the skills to operate here without getting lost? I am a long-time Philadelphia area hiker and amateur naturalist, having been a member of the Philadelphia and Wilmington Trail Clubs for many years. I am also involved with the Philadelphia Club's maintenance of a portion of the 2100-mile Appalachian Trail. Others taught me how to operate in the outdoors, utilizing topograhical maps and a compass, when necessary as well as a variety of land features; and I have taken these teachings much further on my own.

For those of you who are entirely unfamiliar or even partially familiar with hiking, modern hiking is an outdoor recreation activity that has been around in its present form since at least the mid-to-late 1920s. A number of the area clubs, for example, the Philadelphia and Batona hiking organizations, have been in an active form since the early/ middle 1930s.

During the last decade or so of the 19th century fledgling groups of urbanites from the major East Coast metropolitan areas began adventuring out from the cities on weekends, seeking solace from their regular every day and often stressed lives. These groups and individuals took a variety of ways out into the countryside, using the train, riding bikes and walking. They first walked the farm lanes, eventually coming into contact with local farmers, who weren't always pleased to see them. Finally, in the late teens and early 1920s, the first clubs were created and they began to layout pathways within sizable parklands. This was especially the case in northern New Jersey and along the Hudson River near metropolitan New York City. During the 1930s and after World War Two, modern hiking continued to develop. In some areas of the Eastern Seaboard large clubs were created from many smaller clubs and a number of small clubs, like the Philadelphia Trail Club, continued to remain small and independent, albeit in a variety of associations with the larger organizations within the overall hiking community.

For those who might be interested in coming out on a hike, most of the area clubs hike on both Saturday and Sunday throughout much if not the entire year, weather-permitting. The clubs do a wide variety of hikes, detailing the lengths and degree of difficulty for each. Also, hikes may be merely local, such as doing a walk in the Refuge here or they may be as far away as the Poconos, South Jersey or Bucks County.

Green City Youth write about their visit to Tinicum

These St. Francis Xavier students visited the Refuge as part of the Pennsylvania Horticulture Society's 'Green City Youth Program' which helps Philadelphia students be more involved in community greening. They were led by teacher Larry Stier, who was also a Friends of Heinz Refuge Board member.

"My first trip to this refuge was awesome because it was very educational. I got to see all kinds of plants and animals interact with their environment. The path wandering all around… felt very enchanting and the aromas were soothing to my soul."-- Amira B.

"Our class trip to Tinicum was very exciting. One thing I found interesting … was the blue heron because we learned that when the bird really stands up it's 4-5 feet tall"—Tayler F.

"John Heinz National Wildlife Refuge is better than the zoo because in a zoo the animals are locked up in cages. I saw a dead deer, a dead rat, and a centipede. I never got that close to any of those animals before. I got to pick up worms and take pictures of different types of animals and foods. I learned a lot about animals, plants, and nature. "-- Amanda L.

"My first trip to Tinicum was great. I saw a lot of animals and plants I would not see around my house… The plants were very pretty. There was pokeweed which was a very beautiful hot pink." Ciara M.

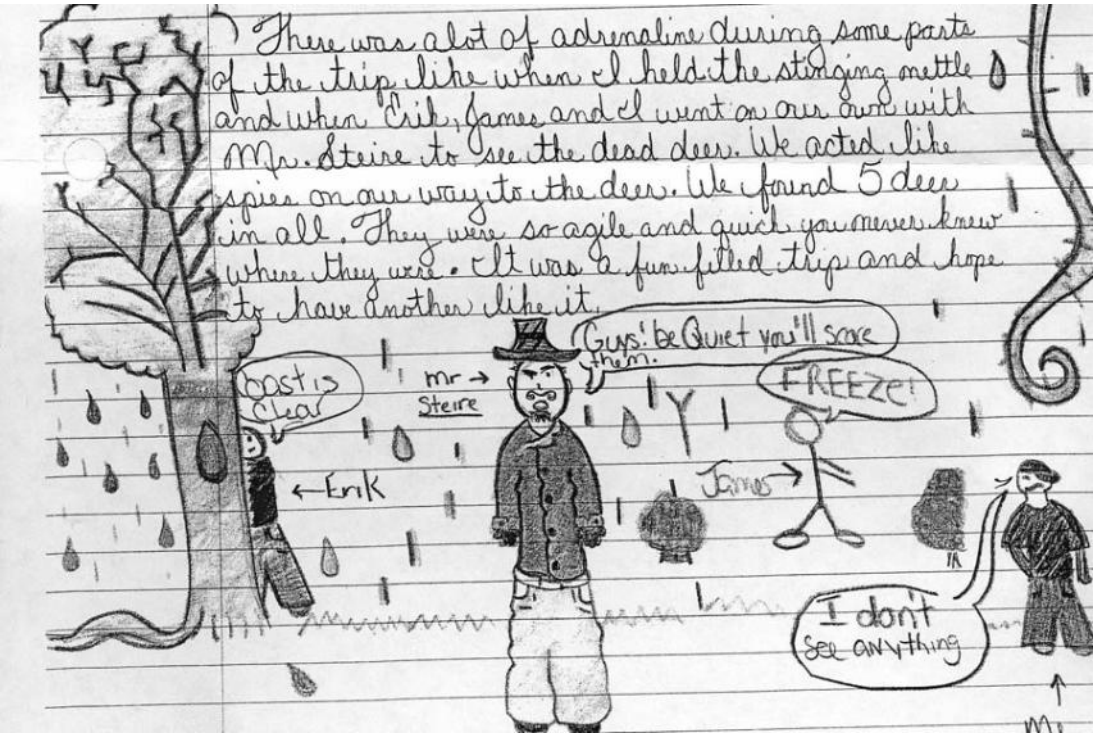
"My trip to Tinicum was unbelievable. I found many things that were interesting. One thing was the dead deer. I never seen a dead deer up close before. Another thing I found fascinating was the blue heron. When it stood up it was 4-5 feet tall. My favorite plant was pokeweed. It was a pink plant and had berries on it."—Deena M.

"The dead deer was very cool, and I picked up worms and honeycombs…. We acted like real hunters so we could get close to the birds. …That trip was animated and cool".—Shaheem B.

"My favorite experiences were seeing the group of deer running or gliding….We were astounded when we saw five deer right in front of us."—Erik C.

"It was an exciting trip, especially since I got to spend most of our time outside. My favorite organism was the Paulownia tree which came from Asia. . . . There was a multitude of birds including herons, Canadian geese, mallard ducks, and even three robin's nests."—Robert K.

"It was fun being out of the classroom and in a nature classroom." Michael L.



"The trip was awesomer than being in class"—Nicolai M.

Left: Journalist Sterling P. writes and draws the action when they went forth to look at the dead deer.

Bird Behavior: Costly, Honest Signals

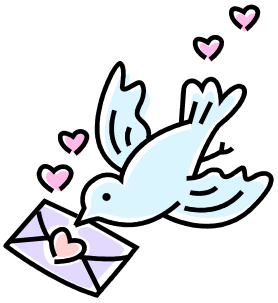
Early animal behaviorists thought evolution favored inexpensive and honest communication. Thus, when two competitors met, they would basically tell each how strong they were and then the stronger would win. But, why don't animals just lie to each other about how strong they are or how many resources they are willing to use in a fight? Talk is cheap.

Why, biologists wondered, did an animal's displays convey true information if animals could generate these displays easily? Maynard Smith showed that honest signals with no cost were highly susceptible to cheating. If a cheater gives the aggressive display no matter what, then they will consistently win contests. Cheating would be favored by selection and spread. Once cheating becomes common, the aggressive signal would no longer be informative and other animals would stop responding.

In 1975 Amotz Zahavi argued that exaggerated qualities like peacock tails could function as "honest signals" because they were "handicaps" which only high quality males could afford. Oddly enough, this theory had been proposed for humans first. Thorstein Veblen had proposed a similar theory in 1899—that expensive luxury goods were un-fakeable signals for wealth simply because they were expensive. Thus, "conspicuous consumption" served as an "honest signal" of wealth in the world of human status displays.

Many studies have shown that female birds prefer males who sing at a high rate. Song output is an "honest signal" because it is correlated with the food supply on the male's territory. Studies that provision some males by putting food in their territory show that these males sing more. Provisioned male dunnocks sing at more than double the rate of the control groups, and also start singing earlier in the season. These results suggest that adding a bird feeder to your yard will increase the amount of bird song relative to your neighbor's yard because your birds will have greater resources.

Song complexity and repertoire size also attract females. Song repertoire size in song sparrows accounted for 50% of the variance in their lifetime reproductive success. However, the costs that keep this signal honest are not fully known. One hypothesis is that the complex song-control part of the brain can only develop in birds who have a sets of genes that are resistant to stress and other hardships. In other words, song complexity signals "good genes."



For other signals, the costs that keep the signal "honest" are less well known. Aggressive displays do work, in the sense that birds who display an aggressive posture often win. But, why do other birds believe the aggressive display? The answer is not yet fully clear. Those cute little American Goldfinches at your thistle seed feeder have three levels of display (1. low-intensity head forward, 2. high-intesity head forward, and 3. wingflap). The higher levels are most effective in getting the other bird to back off, but they are also the displays most likely to lead the other bird to attack. This pattern seems contradictory, but it is exactly what would be necessary to ensure that the signal is reliable and honest, because honest signals should be the most costly.

Other behaviors and traits have been studied from this point of view. The Harris Sparrows vary in the amount of black plumage on their face and throat. Males have more black than females and adults have more than first year birds. The amount is a "badge of status" and in confrontations, the darker bird wins more than half the time. In house sparrows, only males have the badge, which is a black throat patch. The nice thing about badges is that you can alter then with a black magic marker and then see the effect, which has led to a long series of experiments. One current hypothesis is that higher testosterone birds have more melanistic (darker) feathers, but the cost of that higher testosterone is a weaker immune system.

Signalling is one of the many areas where evolutionary theory is still in flux, as scientists uncover greater complexity. —Mark Cary. This material adapted from W. Searcy and S. Nowicki, *The evolution of animal communication: reliability and deception in signaling systems*. Princeton U. Press, 2005 and R. McElreath and R. Boyd, *Mathematical models of social evolution*, University of Chicago Press, 2007.

The public can go to front desk of the Cusano Environmental Education and Visitor Center at the John Heinz National Wildlife Refuge at Tinicum and borrow rods, reels and a tackle box full of hooks and other terminal tackle. This equipment is borrowed in much the same way books are borrowed from a library. The Visitor Center hours are from 8:30am to 4:00pm. Other tackle loan sites can be found on the PA Fish and Boat Commission's web site at: http://www.fish.state.pa.us/loaner.htm

This program is a partnership between the Pennsylvania Fish and Boat Commission, the American Sportfishing Association, and the John Heinz National Wildlife Refuge at Tinicum. The program is designed to make it easy for anyone to access fishing tackle. It's hoped that those making the loans will enjoy fishing so much they are hooked for life. This equipment may also be loaned to groups conducting angler education programs in the community.

Report Violations

U.S. Fish and Wildlife Service

John Heinz N.W.R. at Tinicum
(215) 365-3118

Pennsylvania Game Commission
SE Region Law Enforcement
(610) 926-3136

Pennsylvania Fish and Boat Commission
SE Region Law Enforcement
(717) 626-0228

EMERGENCY 911

Join or Renew your Friends of the Heinz Refuge Membership

This is a (please check) [ ]new [ ] renewal [ ]gift membership.

I am joining FOHR Tinicum at the following membership level:

[ ] $10 Duckling (Student/Senior)
[ ] $15 Heron (Individual)
[ ] $25 Heron (Family)
[ ] $50 Red-bellied Turtle (Group)
[ ] $100+ Red Fox (Sustaining)
[ ] $ _____ Donation

[ ] I want a paper Marsh Musings Mailed
[ ] **Save the paper, send an email saying when the Marsh Musings is on the web**

Name _____

Address _____

City, State, Zip _____

Phone _____

Email _____

Make checks payable to FOHR Tinicum and mail to FOHR, PO Box 333, Folcroft PA, 19032-0333, or bring to the refuge next time you visit.

Membership supports conservation of the largest fresh water tidal marsh in Pennsylvania and entitles you to attend member only events and a 10% discount at gift shops operated by Friends of National Wildlife Refuges in the Mid Atlantic. If you give us your email address, we will email you (no more than monthly) with reminders of upcoming events and when the newsletter is posted to our website. We do not share your information with any other organizations.

Friends of the Heinz Wildlife Refuge at Tinicum

PO Box 333

Folcroft, PA 19032-0333

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Permit 335

The first nesting pair of bald eagles is at the Refuge on Oak Island in the Impoundment.

Upper: A Eagle takes off from the nest. The male's leg bands indicate he is from New Jersey originally.

Lower: The approximate nest location on the island. Only foot traffic on the Trolley Bed trail is allowed, with no one allowed off the trail.

Photos are both by Bill Buchanan, USFWS