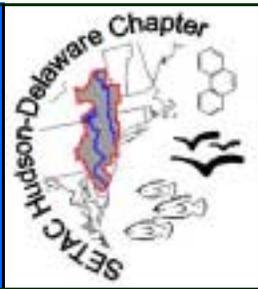




Hudson-Delaware Regional Chapter of SETAC



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Editor's Pen

Jon Doi, Newsletter Editor
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It has been an interesting seven months since the last newsletter (Aug., 2000). Certainly no one can argue that this year is the new millennium (2001) if you don't believe that last year wasn't! This is the second installment as Newsletter Editor of our Hudson-Delaware SETAC Chapter (HDC) newsletter.

Please visit the HDC website (<http://www.hdcsetac.org/>). It has recently been updated. Also, while you are there, please click on the "Join Our Mailing List" button and subscribe to our E-Mailing List. All new information will be sent to this list in-between newsletter editions. I once again want to thank Markus Meier, of Guacamole Press, for putting together this excellent looking website for our chapter. Markus is now working fulltime at Guacamole Press.

As Newsletter Editor, I implore the chapter members to contribute to this newsletter. We are very open to the types of things that go into the newsletter. Obviously, things like interesting projects, journal articles, new regulations or guidelines are perfectly acceptable, but if you would like to share some extracurricular activities or cool things that you have done with your kids, spouse, friend, etc., that would be great also. Most of the newsletter contributions come from the Board, but it would be wonderful if the chapter members would take a few minutes to send me something that I can put in. Come on, this is free publicity! You can give your company a little exposure (as long as you don't send an obvious company marketing piece). We would LOVE to have you write something for our newsletter.

Newsletter Highlights

There are a lot of interesting things going on within the Hudson-Delaware region. See the "IN THIS ISSUE" section for details of what is inside this newsletter. **Note the deadline changes for the HDC-SETAC Annual Meeting on Page 2.**

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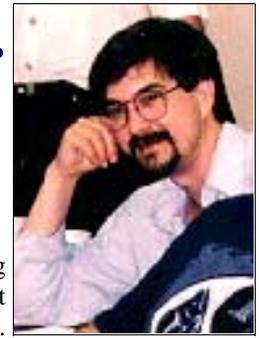
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President's Corner

*W. Scott Douglas, HDC President
NJ Maritime Resources*



It's hard to believe that its time for the annual meeting again. Time flies when you are having fun. And fun it has been. HDC-SETAC is certainly running strong. We have more members, and more sponsors, than ever. We have a website (www.hdcsetac.org), and we are planning to be incorporated within the next few weeks non-profit, of course. This will, hopefully, encourage our corporate sponsors with that ever-important seasonal break from the IRS. We owe all this success to the hardworking Board and their creative program. My thanks to everyone who helped out with our fall mercury conference at Monmouth University. It was an outstanding event, with many interesting viewpoints and perspectives. Special thanks to speakers Bob Mason, Peddrick Weis, Mike Newman, John Reinfelder, Carlton Hunt, Betsy Henry, Steve Peterson and Leslie McGeorge. And thanks, (again), to the incomparable Dominic Di Toro for his thought-provoking keynote on bioavailability. And speaking of bioavailability, several of our members are working on a new Pellston Workshop to discuss Sediment Quality Guidelines. Look for more information on this exciting development in the SETAC Globe. I am especially looking forward to our 2001 annual conference at West Chester University. The setting is absolutely beautiful, and well worth the trip to the southern reaches of the Chapter. Thanks to Chuck Shorten, for spearheading this year's effort. The Board had a taste of the food during our planning trip, and I think West Chester wins for its culinary delights. Mark your calendar early! Your Board is not resting on its laurels either, committees are already forming to bring you a comprehensive restoration workshop in the fall (talk to Lisa Baron), and the Hackensack Meadowlands for spring 2002 (talk to Betty Jane Boros-Russo). As always, please feel free to provide comments and suggestions for YOUR chapter. Feel free to call me anytime at 609/984-8564.

Upcoming Meetings

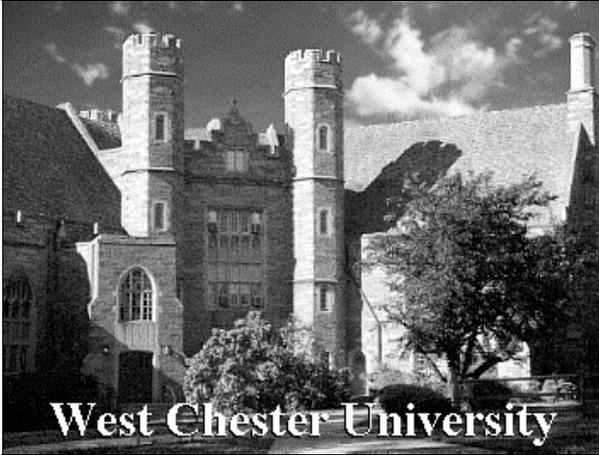
2001 HDC-SETAC—May 10-11

By Chuck Shorten, West Chester University

Don't forget the following important information!

- The meeting rate of \$64 at Microtel is only good until April 26, 2001.
- The pre-registration deadline has been extended to May 04, 2001.
- The poster abstract submission deadline has been extended to May 04, 2001.
- The cost of the Thursday night dinner and Raptor Show is an extra \$20.00 for spouses of attendees adults and free for children under 12. Please note on the registration form that additional people will be coming for the dinner and show.





See Annual Meeting Program for details. Feel free to call my co-chair, Jon Doi at 908/788-8700 or myself at 610/436-2360 if you have any questions. **Hope to see you at West Chester University!!**

Fall Workshop — Comprehensive Restoration of Aquatic Environments

By Lisa Baron, NJ Maritime Resources, NJDOT

Our September 2001 workshop will dive into the topic of remediation and restoration of contaminated aquatic ecosystems. Comprehensive restoration, especially in an industrial setting, is complicated and must consider many issues including remediation technologies/strategies, habitat evaluation, wetland creation and preservation, source control (point and non-point sources), brownfield reclamation, pollution prevention and economic revitalization (to name a few). This workshop will attempt to address many of these issues through a one-day intensive plenary session. The location and exact date has not been determined at this time. More details on this workshop will be available at the May



10-11 Chapter Meeting at West Chester University. If you have any ideas for this workshop feel free to contact Lisa Baron, Workshop Chair, at 609/984-8557 or email at lisa.baron@dot.state.nj.us.

Hudson Delaware Region Chapter Annual Meeting - Spring 2002

By Betty Jane Boros-Russo, NJ Department of Environmental Protection



In the spring of 2002 we will bring our 18th annual meeting to a new location, the Hackensack Meadowlands Development Commission in Lyndhurst, New Jersey. The HMDC, created in 1969 to regulate development and dumping while preserving parts of the existing wetlands, will provide an inspiring backdrop to our discussions and presentation of environmental toxicology, ecology and chemistry. These well known New Jersey swamps, highlighted in the February 2001 edition of National Geographic, will provide unique opportunities for both activities and short courses. Keeping with tradition, the two-day meeting will begin with registration and refreshments, followed by various short courses and activities throughout the day. The varied waterways, vegetation and wildlife, explored via a pontoon boat or a canoe, will provide both exciting and memorable opportunity for those eager to enjoy the outdoors. Where else can you canoe down a marsh creek within sight of the New York City skyline? The spacious facilities of the HMDC will permit those electing to stay indoors ample opportunities to participate and learn in the tradition of the Hudson Delaware Chapter. The day will end in style with an evening dinner and social activities. Our second and final day of the meeting will follow with various platforms and posters and maybe even an early morning bird walk in the Saw Mill Creek Wildlife Management Area, where *Spartina* has established an existence within the marsh. Please contact Betty Jane Boros-Russo (609/777-4092, bboros@dep.state.nj.us), or Chris Nally at (610/434-9015 cybercerio@aol.com), if you would like to present a short course, platform presentation or even a plenary address.



Students Research Awards Program



By Paul Paquin, HydroQual, Inc.

HDC-SETAC has always felt the future of SETAC is the environmental sciences students. For this reason, we have developed a vigorous and substantial Students Research Awards Program. We will again be conducting a competition for best student manuscript and posters at our 2001 Annual Meeting at West Chester University. During the last several years, our Chapter has awarded three expense-paid trips (up to \$1000) for students to present their award-winning research at national SETAC meetings. Cash prizes are also awarded for the best student poster winners. For information on next year's competition, contact Mr. Paul Paquin at 201/529-5151 or ppaquin@hydroqual.com. The deadline for receipt of manuscripts will be April 27, 2001. The poster abstract deadline is May 04, 2001.

At the 2000 Annual Meeting in Stockton, NJ, the three student poster winners were: 1st Place: **Erik Carlson**, "Exposure to the Environmental Carcinogen, Benzo[a]pyrene, Suppresses, Humoral Immune Responses of the Japanese Medaka (*Oryzias latipes*)", Department of Environmental Medicine, NYU School of Medicine, Advisor: Dr. Judith Zelikoff (\$300 cash award); 2nd Place: **Jennifer K. Saxe**, "Copper Bioavailability Model for Plants Using Soil Characteristics", University of Delaware, Department of Civil and Environmental Engineering, Advisor: Dr. Herb Allen (\$200 cash award); and 3rd Place: **Christopher Impellitteri**, "Predicting Partitioning of Cu and Zn in Soil Solution from Soil Parameters: Implications for Cu and Zn Phytoavailability", University of Delaware, Department of Civil and Environmental Engineering, Advisor: Dr. Herb Allen (\$100 cash award). Excellent work by all students were observed at the Poster Session!!



Regulatory Updates

The NELAP Program Takes Off: NY, NJ And PA Labs Enter National Program to Standardize Environmental Testing



By Betty Jane Boros-Russo
NJ Department of Environmental Protection

This past January, the National Environmental Laboratory Accreditation Program (NELAP) accredited almost 700 laboratories throughout the nation that meet the standards developed by the National Environmental Laboratory Accreditation Conference (NELAC). These laboratories are the first in the nation to be accredited by a national organization seeking to ensure accuracy and consistency among environmental testing laboratories throughout the United States. All types and sizes of laboratories are represented on this list - from the small wastewater treatment facility laboratory to some of the largest environmental laboratories in the country. There are laboratories from 38 states and territories, and three foreign countries.

NELAC was formed in 1995 to establish performance standards for labs conducting environmental testing, and for government agencies that approve the analytical capabilities of these laboratories. It is a voluntary organization of state and federal agencies, laboratories, industries and similar entities. Three states in the Hudson-Delaware Region are among the first state agencies capable of administering NELAC's rigorous standards. The state agencies recognized by the NELAP are New Jersey, New York, Pennsylvania, California, Florida, Illinois, Kansas, Louisiana, New Hampshire, Oregon and Utah.

This initiative will improve laboratory services nationwide and produce a higher quality of data in the testing of drinking water, air, wastewater, and hazardous and radioactive waste. Through this accreditation program, residents, businesses, utilities, permit holders and others who use data generated by these environmental labs will have a high degree of confidence in the accuracy of the test results they receive.

An added benefit to the program is a reciprocal agreement among the member states that will allow the accreditation of a laboratory by one state to be honored by other member



states. This means that labs that perform tests for customers in several states will be tested for quality assurance by a smaller number of state agencies. Previously, if a lab performed tests for customers in eight states, it could be subject to quality assurance testing by each of these states. Honoring the quality inspections performed by NELAP-member states will reduce this duplication and potentially reduce costs for the labs and their customers.

In the past since environmental laboratories were not using the same performance standards, it could be difficult to compare test results from labs accredited by different accrediting authorities. Now the ability exists to effectively use and compare data generated by all NELAP accredited labs, creating a more efficient program through the sharing of resources by all NELAP recognized states.

Many more laboratories will be joining the ranks of these NELAP accredited labs in the upcoming months. For the complete list of NELAP accredited labs, visit the NELAC website at www.epa.gov/ttn/nelac and click on "What's New."

Comprehensive Port Improvement Plan

By Lisa A. Baron, NJ Maritime Resources

The Comprehensive Port Improvement Plan (CPIP) is an initiative that will shape the future of the Port of NY and NJ over the next 60 years. A CPIP plan and Environmental Impact Statement (EIS) will be prepared over the next four years under the direction of the Steering and Management Committees. The committees are composed of Consortium agencies (NJMR/NJDOT, PANYNJ, New York Empire State Development Corporation, and the New York City Economic Development Corporation [NYCEDC]), Federal Co-lead agencies (USEPA and USACE), and advisory members (Federal Highway Association [FHWA], environmental representatives, and the NY and NJ Metropolitan Planning Organizations [MPOs]). For more background information on the CPIP, please see the Fall 2000 Newsletter on the HDC SETAC website.

Since the last newsletter, the CPIP Steering and Management Committees have been working diligently to move the process forward. Some highlights include:



- A formal briefing to 24 Signatory Agencies of the Memorandum of Understanding (MOU) was held in October;
- The Consortium agencies short-listed 2 consulting teams for the CPIP Plan preparation:
 - Moffatt & Nichol, DMJM Harris, TRANSYS-TEMS Corporation, Ecology and Environment, inc., A. Strauss-Wieder, Inc., and MLSA.
 - Sir William Halcrow & Partners, Inc., Gannett Fleming, MDS-Transmodal, Iin Strategic Communications, Hirani Engineering and HydroQual
- The first Stakeholder Meeting was held on February 26, 2001; and,
- The Draft Scope of Work for the EIS was prepared and is currently under review by the agencies.

A second Request for Qualifications/Request for Proposals (RFQ/RFP) advertisement will be coming out soon for the preparation of the EIS. Keep your eyes open for the Port Authority announcement.

If you have any questions regarding the CPIP program, feel free to contact Lisa Baron, the Co-Chair of the CPIP Management Committee, at 609/984-8557 or email lisa.baron@dot.state.nj.us, or Laura Shabe, the CPIP Coordinator. You can also access CPIP documents including the CPIP MOU, Draft Goals and Objectives, and CPIP Scope of Work on NJMR's website - www.state.nj.us/transportation/maritime.



Passaic River Restoration



By Lisa A. Baron, NJ Maritime Resources

Over the last 2 years, NJMR has been working with the USACE, EPA, NJDEP and the Port Authority to form a partnership to compre-

hensively restore the Passaic River. The Lower Passaic River is one of the top 10 most contaminated rivers in the country. Investigations indicate that the sediments are contaminated with dioxins, PCBs, PAHs, DDT and metals (just to name a few). The contaminated sediments in the river impact the ecological and human receptors in the area, limit the potential for waterfront development and future land use, and are likely to be a significant contributor to the contaminant loading in the NY/NJ Harbor Estuary. Contaminant loading and its impact on sediment quality result in significant economic impacts to the Port of NY and NJ due to increased cost of navigational dredging.

I am extremely happy to report the agencies have begun to formally create a partnership to address these challenging issues. This past year, the USACE was authorized through the Water Resource Development Act (WRDA) and Congressional Resolutions to proceed with Reconnaissance and Feasibility Studies (FS) to restore the Passaic River. The Corps was authorized to proceed with the FS for the Passaic from the Dundee Dam to the confluence of Newark Bay under the auspices of the Hudson-Raritan Restoration Study. NJMR, serving as the non-federal sponsor, hopes to work with the EPA, USACE, NJDEP, and the Port Authority to produce an FS that meets both Corps and EPA Superfund requirements. The USACE is expected to select a consulting firm for an Indefinite Delivery Contract (IDC) in April 2001 and award the contract summer/fall of 2001. The Project Management Plan for the FS is currently being drafted and may be released for review by Stakeholders in the next several months (hopefully!).

Our main objective is to work together in an unprecedented fashion, think innovatively, and strive for the common goal of comprehensive restoration of the Passaic. If you have any questions about this restoration initiative, contact Lisa Baron at 609/984-8557 or email lisa.baron@dot.state.nj.us.

What's Going On??

Broad New Studies of the Biota of NY Harbor

By Glenn Piehler, HydroQual, Inc.

An ambitious study of the biota of New York Harbor is under way for the New York City Department of Environmental Protection (NYCDEP). This study, termed the Use and Standards Attainment (USA) Project, is being performed for NYCDEP to evaluate current and proposed waterbody use classifications and water quality criteria in twenty-three "waterbodies" ranging from the Bronx River tributary to the East River, through the Harlem River, Hudson River, Upper and Lower Bays, Jamaica Bay and around Staten Island. The study is designed to compare and contrast the biota of the different waterbodies relative to physical habitat and water quality, in particular dissolved oxygen (DO). Two of the most enterprising studies to be undertaken have to do with ichthyoplankton (fish eggs and larvae) and epibenthic invertebrates (those colonizing hard substrates like rocks, pilings, etc.).

Starting in March, HydroQual Incorporated of Mahwah, NJ and its subcontractor EEA, Inc. of Garden City, NY began sampling of ichthyoplankton at some 50 stations. This will be repeated in May, July, and (at a subset of the stations most affected by low summertime DO) August. Combined with past models of DO in the Harbor, the literature on fish spawning habitat preferences and ichthyoplankton tolerances to DO, and substrate types, the study is expected to yield important information about waterbody utilization in inshore areas not typically studied except as related to NPDES permits for a handful of harbor power plants. In another study, the USA Project team will be deploying artificial substrate arrays at generally the same stations, in an effort to evaluate epibenthic invertebrate (e.g. barnacles, mussels, sea squirts, tube-building worms) recruitment and survival. This study is being performed to evaluate water quality impacts unconfounded by substrate differences.

For more information about this project, which also includes waterbody-specific studies of juvenile and adult fish, subtidal benthic invertebrates, and certain marshes, please feel free to contact Dr. Glenn Piehler at 201/529-5151 or gpiehler@hydroqual.com.



Submerged Ancient Egyptian “City of Sin” to be probed by NJ Firm this Spring

By Ken Hayes, Aqua Survey, Inc.



Aqua Survey, Inc. (ASI), was selected by geologist, Dr. Daniel Stanley (Smithsonian Institution, Washington, DC) to be part of a team headed by French underwater archaeologist,

Franck Goddio and the Supreme Council of Egyptian Antiquities to probe sediments that have long engulfed three ancient Egyptian cities. This spring’s expedition will sail from Malta (an island nation located south of Sicily) and arrive in the Port of Alexandria, Egypt mid-April. Aqua Survey’s staff will join the expedition in Alexandria.

Homer, Herodotus, Strabo and many other writers have documented the existence and importance of ancient cities along Egypt’s Mediterranean’s coast – Rhakotis (Alexandria), Herakleion and Menouthis. Herakleion, now submerged under sediment at the bottom of Abou Kur Bay, had grown rich from taxes and once had a reputation for its lax morals. Herakleion was also a pilgrimage center for peoples of the eastern Mediterranean. Goddio is well known for his discovery of the ancient Royal City in Alexandria’s harbor (Discovery Channel: *In Cleopatra’s Palace: In Search of a Legend*). Last summer, Goddio and the Supreme Council of Egyptian Antiquities announced the discovery of the underwater remains of Herakleion and Menouthis (under about 60 feet of water / about ten miles off shore). To date, 2-D and 3-D geophysical technologies



have been used to profile the sites, which had revealed crevices in the seabed under the ruins that indicate possible tectonic instability in the region. Throughout recorded history, earthquakes have played a major role in the destruction of Egyptian cities. Ancient rumblings may have sublimated this entire area, causing it to collapse and to be covered by the sea.

This spring, Goddio has returned to Egypt to continue



his studies of Alexandria Harbor and areas within Abou Kur Bay, with the help of ASI. Aqua Survey will use specialty sediment vibra-coring equipment that will allow the expedition to retrieve long continuous sediment cores. These cores may provide clues as to what cataclysmic event(s) occurred that caused these cities to have sunk into the harbor and to be now covered. The Smithsonian’s Dr. Stanley, a Nile River Delta specialist, joined Goddio’s team to research the possible causes that led to the submersion of this broad area over 1,000 years ago. Stanley will use ¹⁴C and AMS methods to date sediments vibra-cored within the ruins.

“This isn’t just another day on the water for us, collecting samples. We were pleased that the Smithsonian Institute selected us to be on the team. We are excited to be part of such an important project. Until last June, these 2,500 year old submerged ruins of Pharaonic cities were only known through Greek tragedies, travelogues and legends,” stated ASI’s President and founder Ken Hayes.

Homer (~850 B.C.) gave importance to this region. Strabo (66 B.C. – 24 A.D.) wrote about the location and the rich lifestyles of these lost ancient cities. Seneca (4 B.C. - 65 A.D.) condemned the inhabitants for their moral corruption. Underwater archeologist, Franck Goddio, will write the next chapters, with a little help from Aqua Survey.

Note 1: Vibra-coring, as its name implies, is a method of coring that utilizes vibrations to advance a core tube into the sediment. Much the same way that earthquakes sublimated the Egyptian coastline, a vibra-core head provides vibrations to an attached core tube. As the tube and vibra-core head vibrate, the sediment that is in contact with the coring tube sublimates (liquifies) and the 4-inch diameter tube slides deeper into the sediment. Although the sediment at the tube/sediment interface is disturbed, the inner core is relatively undisturbed and can be studied.

Note 2: During the expedition, Aqua Survey’s field team will be posting a journal of their activities and photos on their web site, on a daily basis or as time allows. The website can be found at www.aquasurvey.com.



CDC Report on Lead Levels in Children may be Misleading on Current Lead Crisis

By Chris Nally, American Aquatics Testing

A warning has been released stating that lead poisoning is still the most serious hazard to children in the United States. This warning comes a month before two reports are released, one by the Center of Disease Control (CDC), that indicates that average lead levels in children have declined since the 1970's, the second, to be published in the journal Public Health Reports, which found that health problems associated with lead can occur at much lower levels than previously thought.

The report to be released by the CDC in April indicates that lead levels in American children have declined since the late 1970's. Scientists are concerned that the report may send a false message that the lead poisoning crisis is over in the US.

Research conducted by Bruce Lanphear, director of the Children's Environmental Health Center, and lead author of the report due out in April, shows that lead levels below 5 micrograms per deciliter can cause adverse effects on reading and math aptitude in children. Prior to this work, lead levels at 10 micrograms per deciliter were considered to be safe.

The report also shows racial and social disparity play a role in determining risk. At greatest risk are children in low-income communities. The disparity between lead poisoning in low-income and high-income children is a factor of eight. African American children are five times more likely to be exposed to lead than white children are.

Mohammed Akhter, executive director of the American Public Health Association, said that while 1 million children run a high risk of lead poisoning in the United States, only about one third receive the proper screening. Primary prevention at its source (usually interior house paint) should be a higher national priority, he adds, as forty percent of the houses in the United States contain lead based paint.

Corporate Sponsorship Program

By Larry Lyons, PMC Environmental

The HDC Board of Directors and our membership would like to thank last year's Corporate Sponsors for their support. We certainly would welcome any organizations that would like to join our distinguished list of sponsors. All of our corporate sponsors are acknowledged in our newsletter, on our website and at each of our events.

Corporate Sponsorship funding continues to provide a "vital" role in the growth and success of our regional Chapter. Our Chapter reaches out to 500 SETAC professionals in our region by way of our newsletter. 70 to 100 members typically attend our annual conferences and workshops. This funding aids in subsidizing the costs of our 2-day annual meeting encompassing platform and poster presentations, special quest speakers, workshops and field trips. We also are able to offer special workshops, like our Contaminated Sediment workshop held in September 1998 and the "Whole Effluent Toxicity" workshop that will be jointly sponsored with New Jersey DEP in September 1999 and the upcoming Mercury workshop in September 2000. This funding also enables us to provide an attractive student award program. Join us in your support for 2001.

You can choose to be a full corporate sponsor with a contribution of \$500 or an associate corporate sponsor with a contribution of \$250. Please feel free to contact me at 610/280-5045 or by e-mail (llyons@pmc-mail.com).





The Wildlife Corner

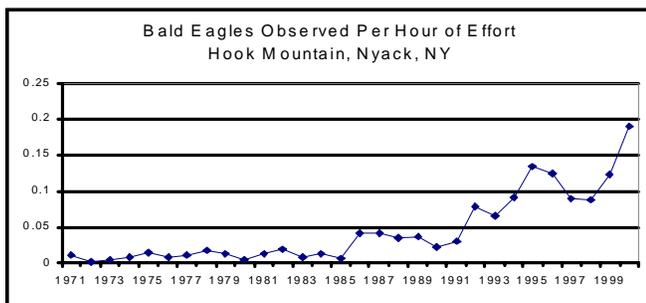
By Nancy Wolfe,
Lawler, Matusky & Skelly Engineers

Welcome to the Wildlife Corner! Starting with this issue, each newsletter will contain a focus article featuring a wildlife species of concern in our region. We will talk about general life history strategies, as well as the status of the featured species in the Hudson-Delaware region. Pertinent information related to the effects of contaminants on the featured species will be shared, as well. Our first issue of the Wildlife Corner will start off with a top predator species that is listed as endangered in Pennsylvania and New Jersey and as threatened in New York and federally. You guessed it...the bald eagle (*Haliaeetus leucocephalus*)! We hope you'll find this article interesting and enlightening. Enjoy!

OK, we concede it might seem a little obvious to start with the bald eagle. I mean, our national symbol, yada, yada, yada. But the fact remains, the bald eagle is and has always been one of the most spectacular wildlife species to be observed in our region...or anywhere, for that matter. Anybody who has seen one of these magnificent creatures in the wild can attest to that.



Speaking of seeing bald eagles in the wild, in the past few years, more and more bald eagles can be observed overwintering right here in the Hudson-Delaware region. In fact, on a quick trip one recent Saturday morning, along a short stretch of the Hudson River with the Rockland Audubon Society, we counted 41 bald eagles! This is representative of a drastic increase in the number of bald eagles observed in our area in just the past few years. In fact, each year records are broken in the number of overwintering bald eagles observed in an annual survey conducted by the NYSDEC in southeastern New York. This survey covers the lower Hudson River, the upper Delaware River, and the smaller reservoirs, rivers, and lakes in between. Based on the year 2000 survey, a total of 238 bald eagles were counted, an increase from the 179 counted in 1999. The following graph illustrates Hawk Watch counts of bald eagles observed per hour on Hook Mountain in Nyack, NY over the past 30 years:



Needless to say, bald eagles are apparently recovering from a perilous past. The earliest records of nesting bald eagles in New York State date back to the early 1800's, when approximately 80 nesting locations were known in the state. Over the following 150 years, habitat loss, logging, human disturbance, and illegal shooting decreased the New York State breeding population to only 20 pairs. After World War II, the wide-spread use of DDT as an agricultural pesticide and the introduction of metals into our surface waters caused the population to further plummet. By 1960, most nests in New York State were vacant, and by 1970 only one breeding pair remained. The recent increase in bald eagle numbers has been due in part to an active reestablishment program initiated by NYSDEC in the 1970's. But these efforts would have been for naught had it not been for the ban on DDT in 1972 and stricter regulations for the licensing and use of other chemicals. For this work, SETACers can be proud!

So, how do bald eagles survive and reproduce and where do they live? Their preferred breeding habitat is in areas with very little human disturbance adjacent to rivers, lakes, and wetlands. Here, they build their nests high in the super-canopy of mature white pines. Their large nests comprise mainly sticks and twigs and can measure six feet across and 8 feet deep; some can even weigh hundreds of pounds! Bald eagles lay their eggs from mid-March to mid-May, and incubation lasts from 28 to 46 days. Only one or two offspring are produced per pair per year, and fledglings leave the nest by 10-11 weeks after hatch. Most bald eagles do not breed until their fifth year, and breeding pairs stay together as long as both are alive, which can be over 30 years!

During the winter, bald eagles travel south in search of open water that has not frozen over in search of their primary staple, fish. Along the upper Delaware and lower Hudson Rivers, where they are best observed in our region, bald eagles love to perch on the edge of ice flows or in the trees along the banks of these rivers. Although they prefer fish, bald eagles are actually opportunistic feeders, often also taking smaller birds, mammals, and carrion. Thus, biomagnification of contaminants in the food chain make the bald eagle especially susceptible to adverse effects from these substances, which means that our work will never be complete in protecting this species.

If you are interested in raptors and would like to learn more, or if you just want to see one up close and personal, be sure to join us for dinner on Thursday night, May 10 at our annual meeting, when Jonathan Wood of The Raptor Project will be presenting his live raptor collection. Also, be sure to catch the keynote presentation dramatizing the life of Rachel Carson, who has been credited for uncovering and educating the public about the effects of DDT and other pesticides on wildlife species such as the bald eagle.



Fish For Free

Copora nicaraguense

By Garrett Hayes & Ken Hayes, Aqua Survey, Inc.

The Nicaraguan cichlid is a moderately aggressive Central American native. It is a robust, hard-water, behaviorally complex intensely colored species. Males grow to approximately 10 inches under ideal tank conditions. Females grow to approximately 8 inches. Newly hatched young can be reared on artemia nauplii and in about one month, fed a mixture of flake food and artemia. During this time, the young will stay in the vicinity of the pit that their parents had excavated. They will find food by foraging on their own or in the gravel and detritus that their parents pick up by the mouthful and then dribble out over them. During this whole time, both parents protect their young vigorously from other fish. As the young mature, they keep venturing farther and farther from their pit and from the protection of their parents. They do this to meet their growing food requirements. It is at this time of their development that they start to lose their streamlined look and begin to take on the appearance of an adult. The fish can now exist on flake food. Posturing between individuals continues to intensify. When they are older they will start to defend areas in the tank— this is accomplished without physical contact. They will try to displace each other with flared gills and feigned attacks. The defender and the interloper almost appear to be magnetically repulsed from each other as they move back and forth. The several month old fish can be maintained on a combination of flake food, pellet food and will thoroughly devour rinsed Romaine lettuce.



If you are interested in receiving 5-6 four month old Nicaraguans for free – contact Ken Hayes, at Aqua Survey (908/788-8700). Since these aren't guppy-sized fish, you will need at a minimum a 55-gallon tank to accommodate their needs

On the Move

Larry A. Lyons has joined the staff of PMC Environmental as a Senior Risk Assessor.



PMC Environmental, headquartered in Exton, Pa., provides specialized environmental services in the areas of site characterization and investigations, environmental risk assessment, waste management, property risk management, brownfields and property development, facility compliance and site assessment, occupational health and safety, remedial engineering, and wastewater engineering and biotechnology.

Larry brings 30 years of environmental experience to PMC. His career began with the Academy of Natural Sciences in Philadelphia. During his 13 years with the Academy, he was the principal investigator for numerous research projects and environmental studies nationwide related to the characterization of surface waters, sediments, and effluents. In 1984, Larry became the manager of the Aquatic Toxicology Laboratory for BetzDearborn, Inc. He managed a testing program responsible for assessing the toxicity of hundreds of chemicals each year, providing risk assessments on the environmental fate of chemicals in industrial processes, and resolving toxicity issues for all types of industrial facilities. In the past two years, Larry has been self-employed, providing environmental services primarily for other environmental consulting firms. Larry is also the coinventor of seven patents related to the control of macrofouling of industrial cooling water systems and has over 30 publications and presentations to his credit. Larry has been on the board of directors of the Hudson / Delaware Chapter of SETAC since 1994. He is currently serving as treasurer until 2004.

Larry can be contacted at PMC Environmental, 835 Springdale Drive, Suite 201, Exton, Pa. 19341 (Phone: 610/280-5023, e-mail: llyons@pmc-mail.com).



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