Summer 2008

# Wild Rhode Island



A Quarterly Publication from the Division of Fish and Wildlife, RI Department of Environmental Management

## Ospreys Back and Nesting in High Gear by Lori Gibson

The return of the Osprey is a fabulous sight to witness, after their population crash from the pesticide DDT. Rhode

Islanders have always championed the underdog and Ospreys are ideal candidates. Our nesting population plummeted from a high of 140 in 1949 to just two nests with zero young in 1967. All along the Northeast coast, similar crashes were occurring due to the cumulative effects of DDT. Of the 800 nesting pairs from Boston to New York, only 90 nests remained after the crash. In 1978, when I started to survey Ospreys. there were only 13 pairs statewide. The Division of Fish and Wildlife is



now monitoring the status of over 113 nests with the assistance of a dedicated cadre of volunteers and have presented the findings in the Osprey Newsletter for the last 30 years.

DDT is a persistent pesticide, passing from runoff up the food chain from insects to fish, while being concentrated in

fatty cells. DDT did not actually kill Ospreys outright. The pesticide inhibits the absorption of calcium necessary for

> eggshell production. As a result, the eggshells were too thin to survive the 28-day incubation and would often break under the weight of the female.

> By 1972, federal regulations restricted the use of DDT and the Osprey population began an immediate and steady increase. The sensitivity to environmental conditions makes the Osprey a remarkable and reliable indicator of the quality of the environment, a compelling reason for monitoring the population so closely.

We also recognize that DDT is not the

only threat to Ospreys. Plastics in the environment are also a constant hazard. Osprev are attracted to a variety of plastic material and consistently use it for nest building. Entanglements have occurred and successful capture and liberation of birds without permanent damage

Continued on page 6

Inside this issue:	
Wild Places	3
Intro to Marine Fisheries	4
Species Spotlight: Horseshoe Crab	5
Kids Raise Living Fossils	7
Kids Corner	7
Calendar of Events	8

#### Fish Need Water Too! by Veronica Masson

Summer is here and water levels in streams, lakes, ponds and reservoirs are starting to drop. For some this means drought restrictions may not be far behind. We seem to have plenty of water in Rhode Island; we are after all the Ocean State. But unfortunately, water levels in the state fluctuate due to rainfall amounts and water use throughout the year. Regardless of the situation, every summer the peak in demand for water coincides with the lowest levels of water in streams and in the ground. When everyone's lawn is turning brown in the summer and lawn watering is high there

is the least amount of water available. While you may not be affected, many in

Rhode Island are required to comply with water restrictions such as odd/even watering days, but the ones who are most affected are



in the water. Survival of fish and other living

things in streams depend upon clean flowing water. The health of Narragansett Bay also depends upon a supply of clean freshwater. The Division of Fish and Wildlife is concerned with how unnatural fluctuations in

Continued on page 2

THE DIVISION OF FISH AND WILDLIFE MISSION STATEMENT:

Our mission is to ensure that the Freshwater, Marine and Wildlife resources of the State of Rhode Island will be conserved and managed for equitable and sustainable use.



W. Michael Sullivan, Ph.D. Director, Rhode Island Department of Environmental Management

Larry Mouradjian, Associate Director, Bureau of Natural Resources

*Michael Lapisky,* Chief, Division of Fish and Wildlife

*Wild Rhode Island* is a quarterly publication of the Rhode Island Department of Environmental Management Division of Fish and Wildlife. Printing is supported by the Aquatic Resource Education program (Federal Aid Grant F-42-E).

**Publisher:** Kimberly Sullivan, Senior Fisheries Biologist, ARE Coordinator

Editor: Veronica Masson, Principal Fisheries Biologist

For a free subscription to *Wild Rhode Island* please call (401) 789-0281 or send an email to veronica.masson@dem.ri.gov. Please indicate whether you would like to have the newsletter sent to you via email or US mail.

> Wild Rhode Island is also available on the web at: www.dem.ri.gov

To report an environmental emergency or violation please call the RIDEM Division of Law Enforcement (401) 222-3070

## Fish Need Water Too! by Veronica Masson

#### cont. from page 1

stream water levels affect fish and other organisms that live in the streams. For five years we have been conducting studies in several rivers in the state to determine the link between the amount of water that is taken out of a stream via groundwater wells. and the numbers and types of fish in that stream. Water withdrawals, especially groundwater withdrawals, affect fish habitat in several ways. These effects include an increase in water temperature, a decrease in oxygen, and a decrease in available habitat. In particular, when water levels de-

crease in a stream the hiding places for fish, like undercut banks, disappear and they are forced to survive in a central channel where they become concentrated, vulnerable to predators and food is scarce.

For our studies, fish are grouped into three categories: fluvial specialists, fluvial dependents and macrohabitat generalists.

The first two categories are types of fish that require clean flowing water for all or part of their life cycle. Wild Brook Trout are fluvial specialists which require cold flowing water for their entire life cycle. River herring require flowing water for their spawning migration from the ocean into our rivers and belong to the fluvial dependent category. The macrohabitat generalist group is composed of pond fish, like Pumpkinseeds and other sunfish, that are more tolerant of higher temperatures and lower oxygen levels. One or two stressful events may not affect the population, but over time, if a stream is repeatedly stressed by severe water withdrawals in critical months, the fish community will change from one that has more river species to one with primarily pond species.

Everyone can help protect



In early June, water levels in streams are already getting low, indicated by the gold and red dots. Real-time stream flow data is available from the United States Geological Survey at: waterdata.usgs.gov/ri/nwis/rt these fish and the clean flowing water in our streams and rivers by conserving water. The box below describes some simple things you can do to conserve water and more ideas are available at the listed websites.

Additionally, we need to be able to manage our water wisely. The DEM Office of Water Resources and the Division of Fish and Wildlife have developed water withdrawal guidelines to help manage our state's waters. The plan is specific to each river system and will protect fish and other organisms while also providing for water users. The guide-

lines specify water withdrawal amounts while maintaining our rivers and river fish. This designation of water withdrawals for agricultural and urban areas will allow for coexistence with our freshwater and estuarine ecosystems. Protection of stream flow is necessary for continued health of our streams, rivers and Narragansett Bay today and for generations to come.

#### Water Saving Tips

- Use dishwashers and clothing washers only when they are full or adjust the water level. (saves up to 1000 gallons per month).
- Fix leaky faucets, a faucet dripping 1 drop per second can waste 2,700 gallons per year.
- Turn faucet off when brushing your teeth or shaving (saves 3 gallons a day)
- A shower that is 1 or 2 minutes shorter can save up to 700 gallons per month.
- Turn faucet off when preparing foods in your kitchen. Wash vegetables in a basin. (saves up to 150 gallons a month).
- Use a broom instead of a hose to clean driveways and sidewalks.

For many more suggestions go to: www.watersavingtips.org www.wateruseitwisely.org www.wateraware.org



## Wild Places – Black Farm Management Area: a Jewel Along the Wood River by Brian Tefft

If you are looking for an interesting hike with a chance to view wildlife along one of the state's most diverse wetlands on the Wood River, check out the Black Farm Management Area in Hopkinton. The 264-acre Black Farm was acquired by DEM in 1990 from the Black family, using US Fish and Wildlife Service funds matched by hunting and fishing license receipts. (This successful program has added thousands of acres of permanently protected lands to the state management areas since 1937.) The property originally included the Black homestead when purchased; however, the homestead and a parcel of land were sold by the state to a private party in 1994. The remaining parcel of 246 acres now constitutes the Black Farm Management Area.

A wide variety of wildlife and habitats is very apparent at Black Farm. The management area lies along the west bank of the Wood River, just north of the Woodville Bridge. The westernmost section is on a ridge of hardwood forest drop-



ping 50 to 75 feet in elevation from the parking lot at Woodville Alton Road east to the bank of the Wood River. The trailhead leads to a trail that

runs down the ridge, across Canonchet Brook, past Plain Pond and eventually leading to the Wood River and its adjoining wetlands. As you traverse this trail, you'll pass through mixed hardwood forests of maple, ash and oak trees and through a small ravine, where Canonchet Brook flows. This is an active little stream with habitats for small fish, including wild Brook Trout, in rocky pools and undercut banks. The shoreline of the brook is densely overgrown with shrubs and trees and a narrow swamp floodplain borders the stream, making the corridor ideal habitat for furbearers, including raccoon, mink and otter. The trail then continues past Plain Pond, a natural basin created in a glacial feature known as a kettlehole, a depression left by the retreating glaciers when a large block of ice melted away 10,000 years ago. This shallow pond has clear waters and a sandy bottom and is home to a variety of amphibians, but no fish.

Continuing east, the trail widens into a sandy road that meanders through mixed age pine stands forming a large pine barren that stretches to the north along an abandoned railroad spur line that ran from Hope Valley into the village of Woodville. The rails have long been removed but the



gravel base forms a nice walking trail that can be followed to Switch Road to the north. East of the rail spur trail are two meadows which overlook Wood River. The wetlands bordering the Wood River at this point are some of the most diverse and valuable in the entire state, with various cover types that range from open

waters and shallow marsh to shrub swamps, small islands and tussocks. These habitats are particularly attractive to waterfowl, including Wood Ducks, teal, Mallards, American Black Ducks and Canada Geese, and a variety of herons, egrets and other water birds.

Management of Black Farm is consistent with other state management areas in that fish and wildlife oriented recreations, including hunting, trapping, fishing, nature observation and hiking are all permitted; however, camping and motorized vehicles are not allowed. Habitat management planned for this area involves periodic mowing of meadows and fields approximately every 3 years to keep these from reverting to forest. Small forest management cuts are planned for the future to maintain the pine barrens in an early successional stage for the valuable habitat they provide for a variety of species.

To get there, take I-95 to exit two then turn south on Woodville-Alton Road, following this for approximately 1.0 miles to the Black Farm trailhead and parking lot on the left.

## Black Farm Management Area



## An Introduction to Marine Fisheries Regulations by Jason McNamee

Often, we at the Division of Fish and Wildlife field questions from the public about regulations. Many people want to know, due to dissatisfaction with a particular regulation or simply out of curiosity, "Who comes up with the regulations?" and "How does the process work?" The following article is a brief description of how regulations come about for marine fishing and how you can get involved with the process.

Many regulations on marine species have their origin at

the federal level, which has three governing bodies for this purpose. These include the Atlantic States Marine Fisheries Commission (ASMFC), the National Marine Fisheries Service (NMFS), and regional councils. In RI these are the New England (NEFMC) and the Mid Atlantic (MAFMC) Fisheries Management Councils. These federal organizations develop fisheries management plans for most of the economically important species that occur in Rhode Island waters. The management plans, developed by scientists, managers, and stakeholders, set specific criteria for the states to follow when developing their own management plans, such as minimum sizes, quotas, and season limitations. There are many opportunities for fishermen or other concerned citizens to get involved during the development of these fisheries management plans.

Regulatory proposals can also come forward from concerned citizens through a number of different avenues, such as a petition with 25 or more signatures or through voicing concerns at a Rhode Island Marine Fisheries Council (RIMFC) meeting. The Division of Fish and Wildlife, working under the authority of the Department of Environmental Management may also come forward with regulatory proposals based on concerns for a particular natural re-

source.

### **Check it out!**

```
For more information on the three federal governing bodies,
including meeting and public input information
check out the following websites:
Atlantic States Marine Fisheries Commission: www.asmfc.org
New England Fishery Management Council: www.nefmc.org
Mid-Atlantic Marine Fisheries Council: www.mafmc.org
```

For more information regarding meetings of the Rhode Island Marine Fisheries Council including dates, agendas, minutes or Director's decision documents go to: www.dem.ri.gov, click on Fish and Wildlife under Offices and Divisions, then click on Marine Fisheries. The information is located on the left side margin.

Once the federal management plan has been set or a proposal has come forward from another group or agency, it is now up to the states to implement regulations in their waters. For RI this consists of several public meetings where interested citizens can voice their opinions and submit proposals. RI general law sets up a Council encompassing academics, recreational fishermen, and commercial fishermen. This is the RIMFC and they are tasked with providing advice regarding all marine fisheries issues. The RIMFC currently meets monthly to



discuss marine fisheries topics. These meetings are open to the public and the public is encouraged to attend.

Advice and information flows from the RIMFC and its associated advisory panels to the DEM. Once the information and the proposals have been set, the DEM holds a public hearing. The hearing consists of a presentation of the various proposals, followed by a chance for individuals from the public to voice their support or concerns, or to even offer counter proposals. The Division of Fish and Wildlife takes the public hearing comments, the advice from the RIMFC, and its own comments and forwards it to the Director of DEM. The Director renders a decision on the various topics, which may result in the filing of a new regulation.

This article is a bare bones description of what is a varied and dynamic process. The Division of Fish and Wildlife encourages all interested members of the public to partake in this process, as the public process cannot be considered successful unless all interested and concerned citizens are involved.

## Species Spotlight: Horseshoe Crab by Scott Olszewski



The Horseshoe Crab, *Limulus polyphemus*, although often called a crab, is neither a decapod nor a crustacean, but is grouped into its own class (Merostomata) and is more closely related to arachnids or spiders. Since their evolution from the Paleozoic Era (540-250 million years ago), horseshoe crabs have remained virtually unchanged, occasionally being termed a living fossil.

#### HABITAT AND RANGE:

Horseshoe Crabs are benthic arthropods that occupy habitats from the continental shelf to inshore bays and coastal ponds. The species found along the western Atlantic ranges from Maine to the Yucatan Peninsula of Mexico and are most abundant in the mid-Atlantic region of the Delaware and Chesapeake Bays.

Horseshoe Crabs are ecological generalists, able to survive in a wide range of environmental conditions marked by seasonal migrations from deeper continental shelf zones to protected bays and inlets to spawn during the astronomically high tides of May, June and July annually.

#### **REPRODUCTION:**

Horseshoe Crabs prefer to spawn along low energy coastlines harboring sand and gravel beaches protected from the surf where the likelihood of stranding is low. The males arrive first with females arriving shortly after, burrowing nests 15 to 20 cm in depth. Egg deposition and fertilization occurs while the male is attached to the female. Females may spawn multiple times throughout the season depositing 2,000 to 5,000 eggs during a single spawning event, laying upwards of 50,000 eggs annually.

Following fertilization the eggs hatch in 15 to 30 days. Horseshoe Crabs are characterized by high fecundity, with high egg and larval mortality primarily due to predation.

#### GROWTH:

Horseshoe Crabs exhibit sexual dimorphism with males smaller than females at maturity. They must molt or shed their exoskeleton similar to lobsters and crabs in order to grow. Horseshoe Crabs molt 16 to 17 times, growing on average 25 % each molt over the nine to 11 year period before becoming sexually mature. Molt frequency decreases over time and Horseshoe Crabs live up to 20 years.

#### FEEDING:

Larvae feed on a wide variety of polychaete worms spending their first and second years as juveniles in the intertidal flats in close proximity to their original spawning beaches. Both juvenile and adult Horseshoe Crabs feed mainly on mollusks such as razor clams, Atlantic Surf Clams and Blue Mussels. They also eat a wide variety of benthic organisms and vascular plant material.

#### **FISHERIES:**

Horseshoe Crab fisheries have existed for centuries. During the mid 1800 to the early 1900, over one million Horseshoe Crabs were harvested annually for fertilizer and livestock feed. Currently, Horseshoe Crabs are being harvested as the preferred bait in the American Eel and whelk fisheries. Horseshoe Crabs are also harvested for use in the bio-medical industry. Science has used Horseshoe Crabs in eye research and in the detection of bacterial endotoxins. Limulus Amoebocyte Lysate (LAL) is a clotting agent in Horseshoe Crab blood that allows for the detection of human pathogens in all intravenous devices.

#### MANAGEMENT:

In December 1998 the Atlantic States Marine Fisheries Commission began management of Horseshoe Crabs. Due to concerns of over-harvest and poor data quality, the Commission, whose members represent the states of Maine through Florida, implemented harvest reduction measures to begin the rebuilding of Horseshoe Crab stocks.

Management measures by state vary from moratoriums to time and area closures.

Currently, the State of Rhode Island Horseshoe Crab fishery is managed by annual total allowable catch and time/area closures.

#### **ECOLOGICAL IMPORTANCE OF HORSESHOE CRABS:**

Horseshoe Crabs play an important ecological role for a number of species. Migrating shorebirds depend on Horseshoe Crab eggs for fuel during their migratory stopovers between Central and South America and their Arctic breeding grounds. Adult and juvenile Horseshoe Crabs are also part of the diet of Loggerhead Sea Turtles and Horseshoe Crab larvae are the preferred food item of many species of finfish and sharks. With proper management this species will remain one of Rhode Island's most valuable natural resources.

For more information on Horseshoe Crabs: Please contact: Scott D. Olszewski (401) 423-1934 Scott.Olszewski@dem.ri.gov



continued from page 1

## Ospreys Back and Nesting in High Gear by Lori Gibson

is difficult, at best. Ospreys have also been electrocuted as they often nest on utility poles. Most of the deaths occur when nesting material or a wet fish come in contact with structures to complete the circuit. In other instances, nest-

ing material has interfered with the proper operation of transformers, resulting in fires and subsequent power outages.



Ospreys Photo: Charles Allin have mass appeal for their bold fishing style and highly visible nesting behavior. Few can argue that they are not in awe of the sight of an Osprey plummeting feet first into the water and emerging with a fish clutched in its talons, struggling to regain flight.

The Osprey, Pandion haliaetus, meaning "sea eagle" is otherwise known as the "fish hawk" and is the only member of its genus, although there are several subspecies. Ospreys are found on every continent except Antarctica. Our nesting Ospreys migrate to South America, particularly Columbia, and the Caribbean. Ospreys arrive from their wintering grounds in mid to late March, with males

preceding females. Birds reuse former nests and young return to within 18 kilometers of their natal sites.

Ospreys breed at three to four years of age and sub-adult or non-mature birds build "house keeping" nests. Ospreys usually lay three eggs, which hatch in sequential order. The female remains on the nest with the young while the male provides all the fish. Poor weather can greatly impact the fishing success of the male and the survival of downy young. Annual mortality of fledglings is high, over 50 percent, which declines to 10 percent in adulthood. Ospreys live for eight to 14 years. Migration to the wintering grounds occurs from August through September and sometimes later. The fledglings are the last to migrate and do not return to their breeding grounds the first year, returning instead as two year olds.

Ospreys are impressive birds with a wingspan of up to 68 inches. When seen from above, the Osprey is a rich brown color with a white head and is often mistaken for an eagle. The underside of the Osprey is a cream color with a band of darker feathers across the breast. Females have more markings than males and are generally larger. Juveniles have buff tipped

Nest atop derrick at active granite quarry, Westerly, RI



feathers and a distinctive red eye, instead of the golden eyes of the adults. Adult Ospreys weigh approximately three and a half pounds.

During the early years of our Osprey monitoring, birds commonly nested in the tops of dead trees within marshes. This provided safety from climbing predators like raccoons and a high vantage point to defend against avian predators,



such as great horned owls. However, almost all current nests are situated on utility or mobile phone towers, light structures and even water towers. These sites offer the height advantage that Oprey

so desire but can invite conflicts with utility owners. Solutions are best dealt with prior to egg laying as nesting birds are protected by federal and state law.

Ospreys have been very creative over the years in their nesting site selection. One pair tried to nest on the radar housing of a sailboat moored in South Kingstown and others nested on active cranes in Cranston and Charlestown.

Volunteers are always needed in order to fully monitor Rhode Island's Osprey population. Willing participants must have a spotting scope and provide timely reports on nesting activity, number of young, number fledged, as well as disturbance and weather related mor-

tality events. Volunteers are also asked to provide detailed records of their time in order to qualify for "in-kind" match. As federal funding is utilized for this project through the generous assistance of the Federal Aid to Wildlife Restoration

Act, we can apply volunteer time as state match. This greatly enhances the project, in addition to gathering the necessary data. For nests in your area that might need monitoring please call 789-0281 for more information or email me at:

Lori.Gibson@dem.ri.gov.



For more information......

Ospreys: A Natural and Unnatural History by Alan Poole For an up close view visit the Conanicut Island Raptor Project Marsh Meadow's webcam at: www.conanicutraptors.com For information about Dr. Rob Bierregaard's satellite telemetry work,

visit: www.bioweb.uncc.edu/bierregaard/ospreys.htm

#### Page 6

## Rhode Island Kids Raise Living Fossils! by Kimberly Sullivan

In the middle of Providence, Rhode Island, second grade students from the Paul Cuffee School are raising prehistoric marine organisms that lived during the age of dino-

saurs: Horseshoe Crabs! All they need is sand, salt water and tiny green eggs to embark on a learning adventure.

In 2007, the Division of Fish and Wildlife's Aquatic Resource Education (ARE) program introduced a horseshoe crab hatching project. The original curriculum, entitled "Green Eggs and Sand", was developed through the collaboration of the ARE programs of Delaware and Maryland. The project is designed to introduce children to the Horseshoe Crab and teach them about the ecological, commercial and medi-

cal importance of these fascinating creatures. Rhode Island has tailored the program to focus on the first module of the curriculum, in which children learn about Horseshoe Crabs as they raise them in an elementary classroom setting.

At the end of May, children at Paul Cuffee School eagerly await the arrival of the small green eggs. First they learn amazing facts about the Horseshoe Crab. For instance, Horseshoe Crabs are more closely related to spiders than crabs, they have four sets of eyes, and they have blue blood! A week later, the students have an adult Horseshoe Crab visit their classroom to learn about their body parts. The children also observe the eggs under a microscope.

If the Horseshoe Crab has undergone at least one molt (they will molt 3 times in the egg stage), the students will observe it flipping around inside the egg and moving its eight legs. At the end of the year, when the eggs hatch, students will stock the baby Horseshoe Crabs into ponds at DEM's Coastal Lab in Jerusalem where there is an opportunity to explore the salt marsh and seine the beach.

Like the ARE's Salmon in the Classroom program, the Horseshoe Crab hatching program brings children from

the classroom to the edge of the water to learn about the importance of the Horseshoe Crab's marine habitat. Next year the ARE program hopes that more elementary schools will become involved with the program, exposing students not only to marine aquaculture but to marine conservation and stewardship. For more information about this and other Aquatic Resource Education programs please visit the DEM Fish and Wildlife website via www.dem.ri.gov or contact Kimberly Sullivan at Kimberly.Sullivan@dem.ri.gov.

Kids Corper! Presented by the Aquatic Resource Education Program







Page 7

## Calendar of Events July–September 2008

June 22 Great Parks Pursuit, Lincoln Woods. Call 222-2632 or visit www.riparks.com.

July 1 Recreational Tautog (Blackfish) fishing opens. Limit 3 fish/person/day. See www.dem.ri.gov for more info.

July 7 RI Marine Fisheries Council For more info on monthly meetings, 423-1927 or www.dem.ri.gov.

July 13 Great Parks Pursuit. See clues for location. Call 222-2632 or visit www.riparks.com.

July 27 Great Parks Pursuit. See clues for location. Call 222-2632 or visit www.riparks.com.

July 27 Governor's Bay Day go to www.dem.ri.gov for details.

August 10 Great Parks Pursuit. See clues for location. Call 222-2632 or visit www.riparks.com.

Flexible date Great Parks Pursuit. Self Guided choice, call 222-2632 or visit www.riparks.com

August 24 Great Parks Pursuit. See clues for location. Call 222-2632 or visit www.riparks.com

Sept. 25 Recreational Scup closes. Shore & private. Season opened May 24. Limit 10 fish/person/day. Visit www.dem.ri.gov for more info.

Sept 27 Recreational Winter Flounder opens. Season ends Oct 26. Limit 4 fish/person/day. Visit www.dem.ri.gov for more info.

## Birdhouse plans

We have birdhouse plans that are free for anyone interested in building birdhouses. The



plans describe how to build a selection of different birdhouses, including houses for Eastern Bluebird, American Robin, House Wren and approximately 29 others. Also included are plans for platforms and nest boxes for several mammals and amphibians. Please call (401) 789-0281 or email Christine.Dudley @dem.ri.gov with your address for your free set of plans.

This program receives Federal funds from the U.S. Fish and Wildlife Service. Regulations of the U.S. Department of the Interior strictly prohibit unlawful discrimination in departmental Federally Assisted Programs on the basis of race, color, national origin or ancestry, gender, sexual orientation, age, or disability. Any person who believes he or she has been discriminated against in this program, activity, or facility operated by this recipient of Federal assistance should write to: The Office for Equal Opportunity, U. S. Department of the Interior, Office of the Secretary, Washington, D. C. 20240



Wild Rhode Island

A Quarterly Publication from the Division of Fish and Wildlife

Oliver Stedman Government Center 4808 Tower Hill Road Wakefield,RI 02879 (401) 789-3094 TTD 711



TO:

