



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

Bird Flu Monitoring in Rhode Island by Jason Osenkowski

In 2003, media coverage surrounded a virus that many Americans had never heard of, Avian Influenza (AI), more familiarly known as Bird Flu. The stories focused on a strain of virus found primarily in Asia known as Asian H5N1. With media attention having now turned toward Swine Flu (H1N1), it seems that bird flu has been long since forgotten. However, concern among the scientific community persists because each of these influenza subtypes presents the potential for pandemic flu.

Avian influenza is commonly found in both domestic poultry and wild birds. There are 144 subtypes of AI, named for their protein components hemagglutinin (H) and neuraminidase (N). AI strains are generally divided into two categories: low pathogenicity (LP or low path) and high pathogenicity (HP or high path). Low path most often results in no sign of infection and only minor symptoms in birds, rarely resulting in mor-

tality. High pathogenicity (HP or high path) is readily spread among bird populations resulting in apparent signs of infection and often associated with high mortality rates. Infected birds shed the virus through saliva, nasal secretions, and feces subsequently exposing other birds to the virus.



Photo: J. Osenkowski

The HPAI Asian H5N1 virus was first detected in a domestic goose in the Guangdong Province of China in 1996 and was first detected in humans in 1997. However, in 2003 the virus caught worldwide attention when it infected and killed humans in China, igniting a string of infections in several neighboring countries. The vast majority of these cases have resulted from people having direct or close contact with H5N1-infected poultry or contaminated surfaces; however, there are a few unconfirmed cases of potential human-to-human transmission. Since 1996 countless numbers of poultry and domestic birds have been culled as a result of H5N1 infections. From 2003 to 2009, a total of 62 countries have reported H5N1 infections in

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Lobster YOY Settlement Survey by Scott Olszewski

The commercial American Lobster resource in Rhode Island supports the most economically important single species fishery in the state. The lobsters that eventually make it to markets worldwide start their life six to eight years earlier. Egg bearing females release their young into the water column as plankton, in hopes that one or two may mature and sustain, if not increase, adult lobster stocks.

The American Lobster life history is composed of a planktonic larval phase and an adult bottom dwelling or benthic phase. Both larval and post-larval lobsters gener-



Photo: S. Olszewski

ally drift in the water column, at the will of surface currents and winds, for 30 to 60 days before seeking the bottom. At this time they find shelter in rock, cobble and bolder substrates until they are large enough to defend themselves against predators.

YOY, or Young of the Year, refers to those lobsters which have not yet reached one complete year of life. Even at this early life stage, Rhode Island Division of Fish and Wildlife, Marine Fisheries biologists are attempting to monitor these newly settled lobsters in an effort to better understand the relationships between adult standing stocks, egg production, larval settlement and overall fishery health.

Continued on page 6

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.



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Eastern Bluebirds in the Great Swamp by Jack Moore

Have you ever walked through a meadow and wondered what interesting birds might be present? Chances are, you might see an Eastern Bluebird (*Sialia sialis*). They are hard to miss with their distinct bright blue feathers and rusty breast. If you are a Rhode Islander who enjoys the outdoors, there are ample opportunities to see bluebirds around the state. Recently, 13 new bluebird nest boxes were installed in the meadows located in the Great Swamp Wildlife Management Area in West Kingston, adding to the existing boxes and making 21 nest boxes available to bluebirds and increasing your chances of observing this beautiful bird.

Today, viewing bluebirds might be considered routine since they are fairly common, if you know where to look. This was



Photo: B. Tefft

not always the case. In the mid-1900s, Eastern Bluebirds experienced large population declines due to loss of habitat. Like other species of birds, Eastern Bluebirds require specific habitats in order to be successful. Bluebirds enjoy open fields where they feed on insects and they nest in natural tree cavities in trees found adjacent to the meadow. Rhode Island and the rest of New England once had numerous fields and meadows from agricultural activity, but with changing times, many farms were abandoned and taken over by secondary succession forests or consumed by housing developments. With the loss of habitat, it was up to biologists to maintain healthy populations so that we could keep seeing bluebirds around the state.

Since Eastern Bluebirds are cavity nesters, biologists developed a restoration plan to improve nesting conditions. A cavity is a chamber found in living or dead trees, and can be naturally occurring, made by a certain species of birds (wood peckers) or by events such as insect or disease. Bluebirds

Eastern Bluebird nesting in a tree cavity.



Photo: USFWS

are not capable of making their own cavities so they rely on nesting in abandoned ones, or finding naturally occurring cavities. This can be a limiting factor in the size of the bluebird population since cavities can be in short supply near open fields. By building and installing many nesting boxes, which replicate cavities, and placing them in bluebird habitats (open fields and meadows), biologists and the birds experienced

Tree swallows on a bluebird box.



Photo: E. Blomberg

great success. Tree swallows, another common cavity nester, often compete with bluebirds for the nest boxes. Today bluebirds are common, and if you wish to see one look in the meadows at Great Swamp Management Area.

Jack Moore is an undergraduate student intern from the URI Department of Natural Resources Science.

Please see page 8, for free plans of bluebird boxes and nest boxes for other native species.



The Rhode Island Hunter Education Program by Karen Unsworth

If you'd like to join the ranks of men and women who have the privilege to enjoy the outdoors as hunters, the Rhode Island Hunter Education Program is the place to start. We offer a variety of educational courses and target shooting opportunities for both the novice and the experienced hunter. Our courses are taught by program volunteers and are offered free of charge throughout the year at sportsmen's clubs and other public venues statewide. The Hunter Education Program also oversees the operation of the Great Swamp Shooting Range, conducts Archery Proficiency Testing, and participates in special events and activities.

The basic Hunter Education course is required for all new firearms hunters. This course consists of a minimum of ten hours of instruction and often includes live fire on a shooting range. The Hunter Education Program provides all the necessary equipment and materials for students who will learn about topics such as hunter safety, firearms and ammunition, shooting skills, hunting skills, laws and regulations, responsibility and ethics, preparation and survival skills, and wildlife conservation. There is no minimum age for Hunter Education Certification but hunters in Rhode Island must be at least 12 years old to qualify for a Junior Hunting License, which entitles them to hunt in the company of a licensed adult. Age requirements will vary from state to state but the Rhode Island Hunter Education Card is recognized throughout North America.

The Bowhunter Education Course is also offered and is required in Rhode Island to hunt deer with a bow and arrow. This is a one day course and focuses on topics that are specific to archery deer hunting including safe and responsible bowhunting, know your bow and arrow, preparation for the hunt, use of elevated stands, bowhunting techniques, shot placement and recovery techniques and outdoor preparedness. Rhode Island allows individuals who wish only to hunt with bow and arrow to complete a Bowhunter Education Course and purchase an "Archery Only" license. The requirement for Bowhunter Education varies from state to state but the RI certification is accepted where required throughout North America.

Archery Proficiency Testing is required of all Bowhunters who wish to hunt on Block Island, Prudence Island, Patience Island, the Francis Carter Preserve and Beavertail. Archery proficiency cards are valid for two years from the date of issue, after which the archer must re-test. Many of our Bowhunter Education courses offer proficiency testing for stu-

dents but it is not required to pass the course. Public testing is offered in August and September at various locations statewide. No appointment is necessary but participants must show a picture ID and only one attempt per day is allowed.

The RI Hunter Education Program also offers and participates in a variety of special events and training. We have offered the "Hunter Ethics and Landowner Relations Course" since 1997 where we focus on preparing hunters to be successful in obtaining permission to hunt on private property. This course is open to individuals who have previously completed a hunter or bowhunter course and is offered on a yearly basis, usually in August. The training includes home study, classroom study and proficiency testing with firearms and archery equipment. Students who successfully complete this course receive certification and proficiency cards in addition to having their names placed on a "Hunter Registry" which is made available to landowners who are having problems with deer on their property.

Last September we offered a "Youth Pheasant Hunt Training" in preparation for our first Youth Pheasant Hunting Weekend. Held at the Great Swamp Shooting Range, we had close to 40 young people participate in this event which included instruction on pheasant biology and behavior, dressing and cooking techniques, hunting laws, gear and clothing, safe gun handling in the field, clay target shooting and a hunting dog demonstration. Other special events have included Turkey hunting clinics, orienteering, archery clinics, women in the outdoors events, Girl Scout and Boy Scout firearms training, sportsmen's clubs field days and corporate safety events.

Hunters and target shooters alike have long enjoyed the Great Swamp Shooting Range. Located within the Great Swamp Management Area in South Kingstown, this range is Rhode Island's only state owned public shooting range. Open from January to mid-October, the range offers a 50 yard rifle/pistol range with eight covered shooting stations. On the adjacent shotgun field there are two clay target shooting stands with electric clay target traps available for public use. We recently added a 30 yard archery lane with a foam backstop capable of handling broadhead tipped arrows. From April through mid-October the range is open seven days per week from 8:30 AM to 6 PM with reduced days and hours during the winter season.

Detailed information on shooting range regulations and other program activities can be found at www.dem.ri.gov under Fish & Wildlife or by calling (401)789-3094.



Photos: S. Wittwer

Old School, Common Sense Bass Tactics by Allen Williams



Photo: K.. Bissonette

HOW TO FIND THEM

Before you can catch them, you have to find them. In order to catch lunker largemouth bass, you should first become familiar with the body of water that you intend to fish. A bathymetrical map or chart will give you an idea of the contours and structure of the bottom. A bathymetrical map will help you locate characteristics like points, sharp drop offs, old stream beds, sunken islands, flats, and other underwater features. On the map, I look for sharp drop offs close to points of land.

Once on the lake, study the shoreline. Look at the slope of the land as it comes into the body of water. This slope usually continues below the surface of the water. Next, study the makeup of the shoreline; bass prefer to spawn on hard, sandy, gravelly bottoms. Study the trees around the lake. Pines grow best in sandy soil; oaks and other hardwoods grow in softer soil. A nice stand of pines on shore would draw my attention. The next thing to scout would be cover, bass prefer shade like boat docks, weed beds and blown down trees.

Old School Rule #1: Wood With Weeds = Bass

This is a good formula, but don't overlook the rocky areas. They provide shade, ambush cover, and warmer water. Rocks will retain heat from the sun, thus heating the surrounding water, creating a nice comfort zone for the bass.

Old School Rule #2:

Fish when dogwood trees bloom

As the water warms in the spring, bass move into shallow warmer water. They become active around 50° F and go into pre-spawn behavior between 55° F and 60° F. Spawning occurs when the water temperature goes into the 60's, usually in the month of May. I prefer to leave bass on their spawning beds. Otherwise, the bed is left unprotected and vulnerable to predators.

Old School Rule #3: Baitfish = Bass and also, Big Bait = Big Bass

Largemouth bass are both ambush predators and opportunistic feeders. As ambush predators big bass tend to

lay and wait under cover, this allows them to employ a fast attack, thus expending less energy in the chase. As opportunistic feeders bass will school up and roam an area taking the most available prey at any given time. It also stands to reason that big bass want a big meal.

Approach bass not just as a fisherman but as a hunter of fish. You can locate bass by using Mother Nature as your guide. Fellow fisherman such as Herons, Egrets, or King Fishers can tip you off to the location of smaller bait fish.

WHEN TO FIND THEM

Old School Rule #4: Night fishing = Big Bass

Now that you know where to find the fish, you need to know when to find them. I find that the best bass fishing occurs early in the morning and late afternoon, into dark.

Old School Rule #5: Check your barometer

The best fishing occurs between 29.8 and 30.2 on the barometer. Keep an eye on the weather. A cold front coming in ahead of a storm can often trigger a feeding spree. It may only last a few hours, so watching out for an approaching storm can pay off. As the storm front passes and the barometer starts to rise fish slow down and the bass move to deeper water. Normal fishing conditions should return after the storm moves on and the barometric pressure stabilizes.

STEALTH AND APPROACH

Old School Rule #6: Bass are easily spooked

Whether you are fishing from shore or in a boat, incorporate stealth into your tactics. When shore fishing, advance slowly with minimal disturbance. Keep a low profile and wear clothes with subdued colors. Use trees and brush to conceal your profile. Likewise, a boat approach should be slow and easy; do not bang oars or paddles and be careful with your tackle box. Every noise and action transmits through the boat, into the water and to the bass. Keep a low profile; do not stand up to fish on a boat. Not only is it dangerous, but it presents a large profile with a lot of movement while casting.

Back in the good old days, when we went fishing we relied on basic knowledge from reading books and outdoor fishing magazines. Some might have been lucky and had a mentor who passed down tips and secret spots. This was before GPS, depth and fish finders, and modern electronics. Without these gadgets you can actually concentrate on the fishing. I like the good old days! So, go fishing, relax and enjoy your day on the water.

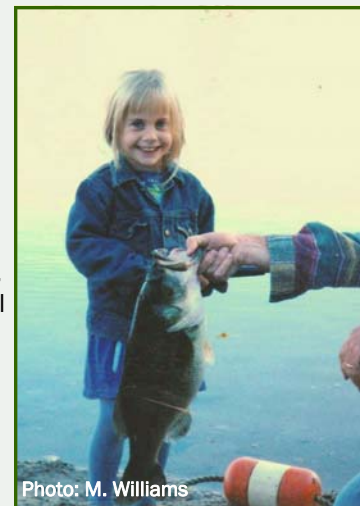


Photo: M. Williams

Good luck, catch fish!

Bird Flu Monitoring in Rhode Island by Jason Osenkowski

domestic poultry and/or wild birds.

As of April 23, 2009, 421 documented human cases of HPAI H5N1 infection have been found in 15 countries, of which 257 (61%) have died. China, Indonesia, Thailand, Vietnam, and Egypt account for 90% of the reported cases. This is considered a very low infection rate considering that on average, 36,000 people living in the United States die of human influenza per year. However, the major risk with avian flu is that the human immune system has not been exposed to such an alien disease. If human to human transmission occurs, the disease could spread fast and, with a 61% mortality rate, have devastating effects.

Pandemic flu is virulent to humans and causes a global outbreak of serious illness. The concern of such an event is substantiated by the occurrence of pandemic flu three times over the last century and was undoubtedly the catalyst behind the initial media hype in 2003. The most devastating of these pandemics was the Spanish Flu H1N1 influenza which occurred in 1918, and killed 40 to 50 million people worldwide. (This is the same subtype of the current swine flu

outbreak.) In 1957, Asian Flu caused by H2N2 influenza virus killed approximately one to two million people and in 1968 the Hong Kong Flu caused by the H3N2 virus killed approximately one million people.

The spread of a highly pathogenic avian influenza H5N1 virus in Asia and the Middle East has elevated concerns about potential expansion of the virus to North America. There are many ways that introduction to this continent may occur but the primary modes would include poultry product shipment from infected areas, infected human transmission, human transmission via infected surfaces (e.g., sole of shoe), and migratory birds.

Migratory birds are considered a plausible mode of transmission because of their propensity to carry and be infected by influenza viruses, including Asian H5N1, and the intercontinental movement patterns of some migratory birds. The most likely scenarios for migratory bird introduction of the virus to the United States would result from birds that either winter or breed in Asia or Europe and winter or

breed in the Americas. For example, some Ruddy Turnstone winter in parts of Asia and breed in Alaska. In this scenario, an infected Ruddy Turnstone could infect other shorebirds or waterfowl while commingling in an Alaskan wetland. The infected waterfowl, may migrate to winter in Rhode Island, bringing the virus to our state. The infected bird, which may live in bay waters, would then have to come in contact with a human. Someone would then have to be infected by a secretion of the bird. Nevertheless, as a result of the intercontinental move-

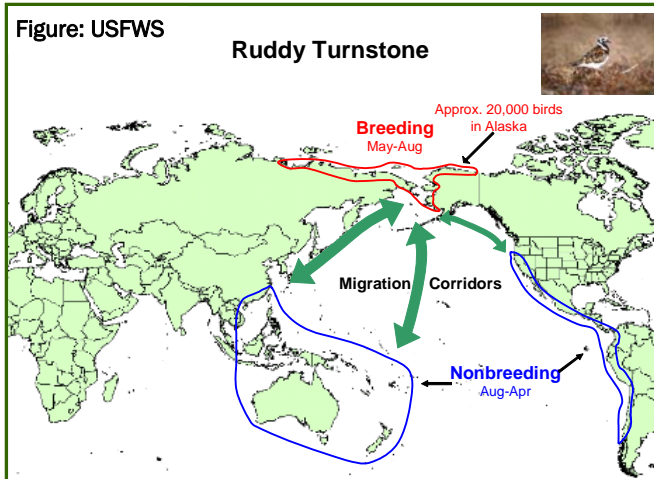
ments of some birds, there is a possibility that HPAI H5N1 could enter North America through migratory birds.

In an effort to monitor H5N1 influenza in Rhode Island's migratory birds, the Division of Fish and Wildlife has been working cooperatively with other agencies, such as the US Department of Agriculture, to collect samples to test for influenza virus. Currently, the Division has finished its third year of sampling for HPAI H5N1 in wild bird populations. The primary means of collection have been from agency capture of live birds, mortality event testing, and sampling of hunter harvested birds. To date, the Division and USDA's Wildlife Services have collected greater than 3,750 samples from wild bird populations in

Rhode Island. The nationwide effort has exceeded 345,000 samples from wild bird populations in all 50 states, Puerto Rico, and the Virgin and Mariana Islands. Subsequent testing of samples taken from Rhode Island birds has not resulted in any detections of the H5N1 sequence of AI. However, the low path form of H5N1 has been detected in other states throughout the United States. Fortunately, there have been no detections of H5N1 in the high path form in North or South America, which is of risk to animals and humans.

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Rhode Island hunters have played a pivotal role in the collection of samples for surveillance of HPAI H5N1. The Division has requested samples from hunters in the past and received excellent participation from a small subset of hunters. This has been a very efficient and cost effective method of sampling a diverse set of waterfowl species. The direction on 2009 and 2010 has shifted, however, to concentrate on live bird and mortality event sampling. Please contact the Division for more information regarding this program. For more information regarding avian influenza visit: www.who.int, www.cdc.gov, and www.usda.gov.

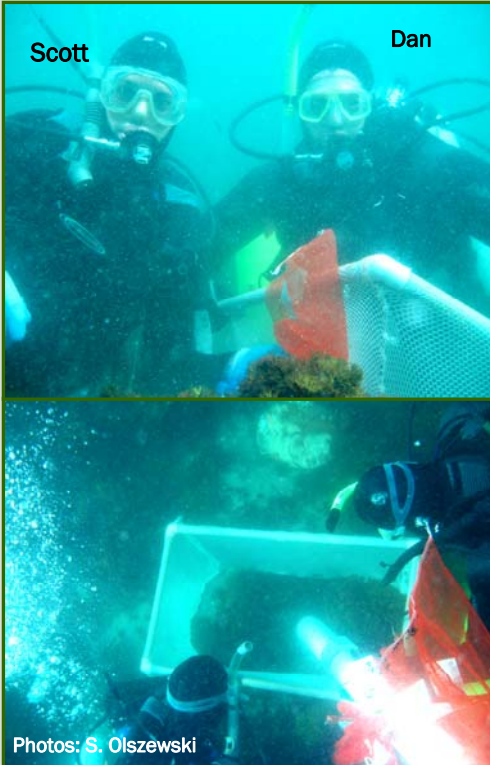


Lobster YOY Settlement Survey by Scott Olszewski

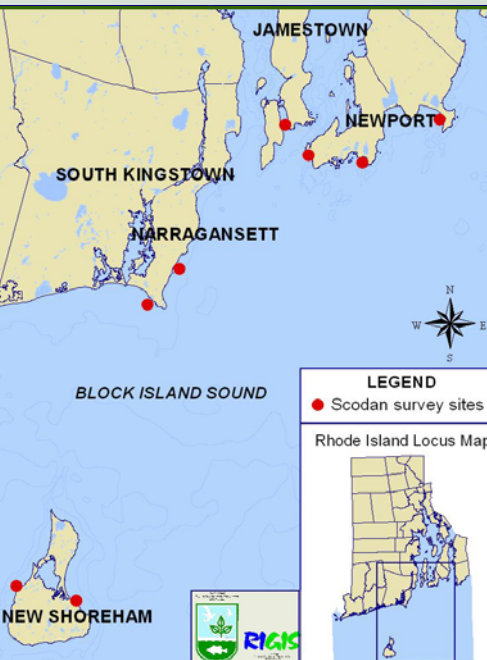
The Rhode Island Lobster settlement survey is part of the larger New England lobster settlement index started in 1990 which incorporates stations from Maine to Rhode Island. (Wahle R., The New England Lobster Settlement Index 2007)

In 2006, the Rhode Island portion of the survey was taken over by the DEM's Division of Fish and Wildlife, Marine Fisheries Section and was informally renamed the **Scodan** lobster settlement survey after the two fisheries biologists, **Scott Olszewski** and **Dan Costa**. The Scodan survey has been seeking the smallest of lobsters all along the Rhode Island coastline every late summer since then. The goal of the survey is to identify lobster year classes and more specifically, newly settled young of the year lobsters as they arrive by larval settlement in near shore coastal waters. This information is used in regional lobster stock assessments and to forecast recruitment to the fishery.

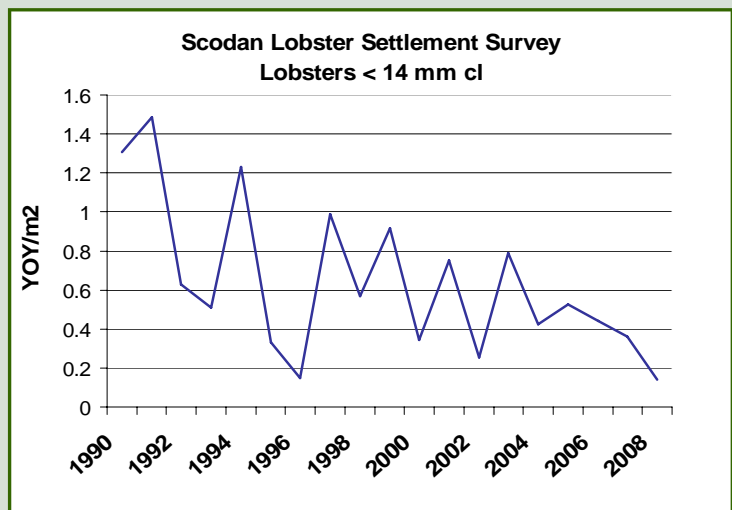
Trends in abundance of newly settled and juvenile lobster populations have been monitored since 1990 and thus give an accurate picture of the spatial pattern of settlement. Surveys are conducted by diver-based suction sampling during late August and early September in Rhode Island coastal waters near the end of the settlement season. A total of six fixed stations are surveyed with 12 randomly selected 0.5-meter quadrats sampled, totaling 72 samples. Lobsters captured are sorted, measured, sexed, and enumerated to develop relative densities in numbers / sq. meter at the Division of Fish and Wildlife, Fort Wetherill Marine Laboratory. Divers descend relatively shallow depths from 10 to 30 feet in full scuba gear with their suction sampler, scuba tanks, lift bags and a square 0.5 meter quadrat. Each of the seven stations takes almost an hour to complete, using three air tanks. The Rhode Island Scodan survey stations are located outside of Narragansett Bay from Sachuest Point to Point Judith and Block Island. The results of the Rhode Island Scodan Lobster Settlement Survey have unfortunately shown a downward trend in post larval lobster settlement in Rhode Island waters. The adult lobster V-notch program which was a result of the 1996 North Cape Oil Spill restoration settlement was intended to increase adult female egg production in areas affected by the spill. For some reason that half decade long restoration / management program did not translate into increased larval lobster settlement. Theories on why it didn't range from increased predation to changes in annual water temperatures and connections to the North Atlantic Oscillation Pattern, yet no clear answer has been identified. Lobster Management has taken aggressive measures in the past decade in an effort to insure the sustainability of one of Rhode Island's most important commercial and recreational fisheries. Although annual lobster landings have been lower than the historically high levels of the 1990s, the Rhode Island lobster fishery still supports a host of at sea and land based opportunities vital to the State's economy.



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Reference:
Wahle R. 2007. The New England Lobster Settlement Index. Bigelow Laboratory for Ocean Sciences.



Kids Corner! Presented by the Aquatic Resource Education Program

Macroinvertebrate Word Search!

ADULT

BENTHIC

CADDISFLY

INSECT

LARVAE

LEECH

NYMPH

MAYFLY

MIDGE



MOSQUITO

POLLUTION

OXYGEN

RIFFLE

SCUD

SNAIL

WATER

WORM



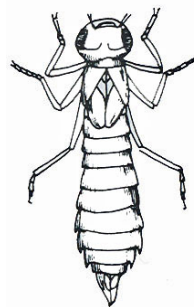
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T	E	L	L	A	R	V	A	E	A
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Explore the Wonderful World of Water Insects by Kimberly Sullivan 

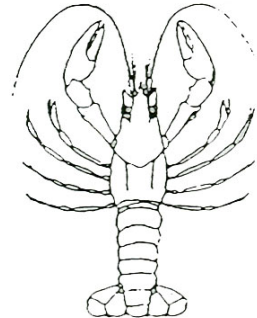
A whole world of creatures is buried in the leaves and muck of your local pond or stream. Most of these organisms are the larval forms of flying insects like the pesky black fly, the irritating mosquito and the elegant dragonfly. Biologists call them: benthic macroinvertebrates, which are bottom dwelling creatures without a backbone. These critters play an important part in the freshwater ecosystem. They provide food for fish and other animals. They are also used by biologists to help determine water quality. So, the next time you visit your neighborhood stream or pond, bring a net and look through the leaves and muck to see if you can identify some of these common macroinvertebrates.



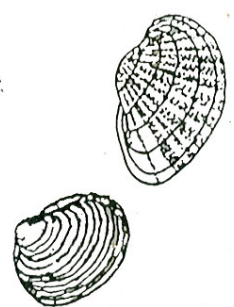
Group Two: These bugs are found in areas with good water quality, which means a little pollution and lower



Dragonfly Larva



Crayfish

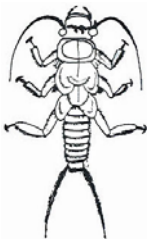


Clams

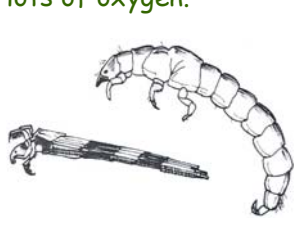
Group One: These critters are found only in areas with excellent water quality, which means no pollution and lots of oxygen.



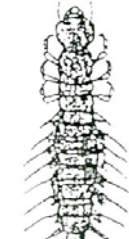
Mayfly larva



Stonefly larva

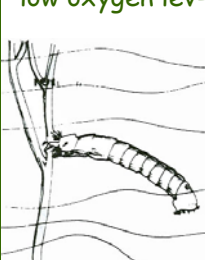


Caddisfly larvae

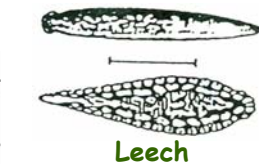


Dobsonfly larva

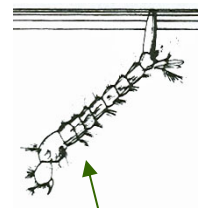
Group Three: Can tolerate any water condition, even poor water quality, which means pollution tolerant and low oxygen lev-



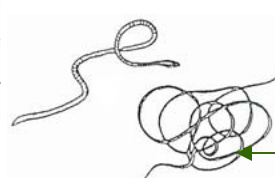
Blackfly Larva



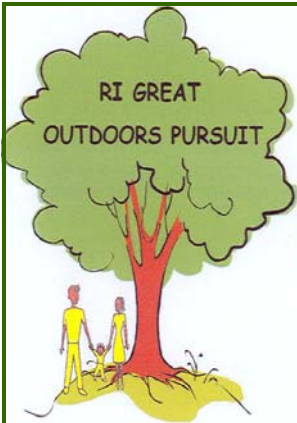
Leech



Mosquito Larva



Aquatic Worms



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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 financial assistance in Sport Fish and/or Wildlife Restoration. Under Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972. The U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, age, sex or disability. If you believe that you have been discriminated against in any program, activity, or facility as described above or if you desire further information please write to: The Office for Human Resources, U. S. Fish and Wildlife Service, 4040 N. Fairfax Drive, Room 300, Arlington, VA. 22203



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