

# WATERSHED

A Newsletter of the Wood-Pawcatuck Watershed Association

Volume 19 No. 2

SPRING 2002

## RI Job Corps Proposal and a Pawcatuck Watershed Wetland

Saul Saila and Denise Burgess

**D**id you know that 27,000 acres or about 14% of our 193,000 acre watershed area consists of wetlands? How important are these wetlands to the ecological health of the watershed? We will address some aspects of the latter question, especially as it applies to a proposed wastewater disposal project adjacent to a wetland in our watershed.

Historically, wetlands have been called swamps, marshes, bogs and sloughs, depending on existing plant and water conditions as well as the geographic setting. In general, wetlands are defined by being wet for long enough periods of time to alter soil properties because of chemical, physical and biological changes that occur during flooding periods and long enough to exclude

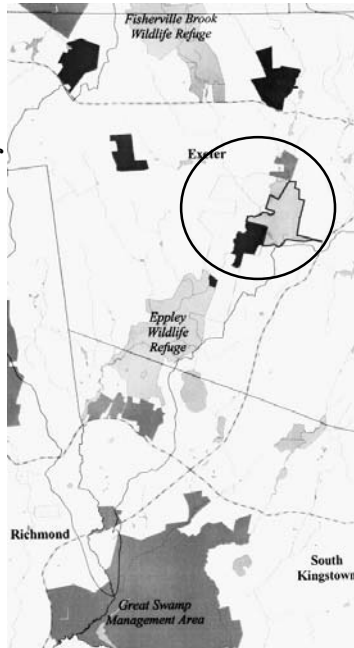
plant species that cannot grow in wet soils.

Wetlands have properties that make them unique among the known ecosystem groups. For example, wetland plants are well adapted to take advantage of a copious water supply and to overcome a shortage of some elements, such as oxygen. These attributes contribute to making wetlands among the most productive ecosystems known to man. As such they are often inhabited by luxurious growths of plants and a large variety of animals including mammals, birds, reptiles, amphibians, and sometimes even fish. Many of the animal species are uncommon or absent from other ecosystems.

In the past, wetlands have been thought to be relatively

useless or even undesirable features of the landscape, and they were often altered for various human uses, such as urban or industrial development, farming and mining, as well as convenient places for any type of wastewater discharge. However, with increasing environmental awareness during the past few decades, the benefits of wetland ecosystems have become well recognized and documented by scientists.

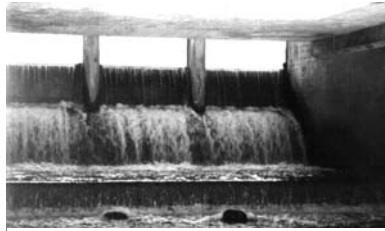
Although natural wetlands have a long history of use as wastewater discharge sites, few wetlands used for this purpose were monitored for water quality or biological integrity during the early years. Information from the very few monitored sites initiated an awareness of the water quality purification potential of wetlands. This brings us to the major topic of this report. The Governor of Rhode Island has proposed a Rhode Island Job Corps Center, scheduled to be constructed in Exeter at the site of the former Joseph H. Ladd School. We believe it has a (See "Job Corps" Page 6)



## Establishing epartnerships for Fishway Restoration

The watershed is home to numerous historic mill sites, and, as a result, several impediments to anadromous fish passage. Presently two fish ladders, at Bradford and Potter Hill on the lower Pawcatuck River, help species such as shad, herring, and even salmon, make their way back upstream to spawn.

Working with partners including NOAA (National Oceanic and Atmospheric Association), RIDEM, Narragansett Bay Project, The Nature Conservancy, and American Rivers, and private interests such as Cherenzia Engineering, Grinnell-Phillips Corporation, and Bradford Dyeing Association, WPWA is exploring options for fishway restoration at sites throughout the watershed, and potential federal



One of the six 12-ft high bays at Alton Dam that prevent fish passage.

and non-profit funding sources.

Fishway restoration can be accomplished in several ways. Fish ladder construction or a similar method of creating passage, is one method. Dam removal, though not yet attempted in the Pawcatuck Watershed, is another. Some dams, such as Stillmanville and

Burdickville, have collapsed with age and created a fish passage naturally. Others remain, and in many cases are not maintained, continually deteriorating on their way to a point of collapse.

In March of this year, field visits to various sites by partner agencies have opened the discussion about how to improve anadromous fish passage on the Pawcatuck and Wood Rivers. Among

the participants was Laura Wildman, an engineer for American Rivers who specializes in dams and fish passage. Laura made a visual assessment of various sites, including Bradford, Potter Hill, Shannock Falls, Horseshoe Dam, and Alton Dam, as well as the sites of two USGS weirs. Also discussed was how to improve passage at these specific points.

The initial project under consideration is a repair at the Bradford fish ladder. The facility was constructed in the 1980's by engineer Roy Grinnell, who also visited the site this month to offer suggestions for repairs at the site. He and engineer Ray Cherenzia discussed several possibilities which Cherenzia may design. Cooperation from owners is very critical to the process, and Bradford Dyeing Association has agreed to provide access to conduct repairs on site.



Engineers Roy Grinnell and Ray Cherenzia discuss repairs at Bradford.

## WPWA / URI Watershed Watch seek volunteer monitors

Volunteer monitoring of the Pawcatuck Watershed's surface waters has been an important component of WPWA'S activities since its inception. Many state and federal agencies depend on the data gathered by dedicated lay people through WPWA and URI Watershed Watch programs. Volunteer monitors provide very precious commodities – their time, enthusiasm, and love of the resources. This year marks the 15th year of volunteer

monitoring in the watershed. New volunteers are needed to fill in some of the gaps at the following sites: Browning Mill Pond and Breakheart Pond, located in Arcadia Management Area, Exeter; and Locustville Pond in Hope Valley. Sites in need of additional volunteers include: Worden's Pond and the Queen's River at Usquepaug, in South Kingstown. Also needed is a volunteer for sites on the Meadow Brook in Richmond when school is not in session. Other sites may need monitors as well.

Free training is provided to all

volunteers. For more information or to sign up as a volunteer contact Denise Burgess at 401-539-9017 or email [deniseburgess@wpwa.org](mailto:deniseburgess@wpwa.org). Or contact Linda Green at URI Watershed Watch 874-2905.



## Watershed Education Is Not Just For Kids

When you think watershed education, what comes to mind? Young children learning about streams and fish and other wildlife? That is true, but watershed education has a target audience much broader than one might expect. Children, adults, professionals, and recreationists can all benefit from the limitless lessons the watershed offers.

Denise Burgess, program director at WPWA, is particularly adept at understanding how to educate different groups on the topic. On December 13th, Denise took a group of Coventry teachers to Clariant Corporation in Coventry, where they, and members of the Pawtuxet River Authority, took a look at pollution abatement methods. The teachers were studying the *AWEsome!* curriculum under Denise for graduate credit.

On December 30th, members of the Appalachian Mountain Club took an advanced wilderness first aid course at WPWA,



using our property for drills such as handling a multiple victim accident scene.

Then on March 6th, Denise led Chariho High School students on a complete tour of the watershed, by bus and foot, from its headwaters, to the southern moraine that defines its lower

boundary. This program was actually the topic of a story in *The West-erly Sun*, resulting in a watershed lesson for the newspapers 13,000 or more readers.



Other activities that WPWA has planned may not seem like education, but indeed they are. The Source to Sea canoe in June. Great fun, yes, but a chance to learn about the rivers, the wildlife, protected lands, and the many land uses along the river corridor. Family Fun Fishing Day in July. Another fun day, but still a day of learning about fish species, aquatic life, and an important survival skill: fishing.

If you are interested in learning more about the watershed, take advantage of our outings, our volunteer opportunities, and get more acquainted with the outdoors. We're here to help you enjoy our watershed to the fullest.

## Country Cape Antiques Shows donates proceeds

Our generous benefactors Chuck and Jan Thompson have made a gift of \$1400 this year from the proceeds of their Mystic antique show in January.

The Thompsons have worked hard for many years to be able to provide these funds to support our operations. And they do this with little to no help from us.

Once again, our heartfelt thanks to the Thompsons. And readers please plan to visit next year's show in Mystic.

## Campaign nets \$8520 for conservation

With our annual giving campaign for 2001-02 at a close, we would like to thank our many members and friends for the \$8520.00 in donations received since December. We are very grateful for the support. Last newsletter we acknowledged some of our donors. Thank you to these fine folks as well:

*Founders' Society (\$250-499)*  
United Builders Supply

*Trustees Circle (\$100-249)*  
Henry and Sen. Donna Walsh

*Watershed Club (\$50-\$99)*  
Henry A. Muller  
Philo F. Willets, Jr., MD  
Susan Shaw and John Buscaglia  
Bro. Kevin J. Kiernan

*Stream of Friends (Up to \$49)*  
Margaret M. Palmer  
Mr. and Mrs. Edward H. Murphy  
South County Tourism council  
James Lauro  
Fred Vocatura  
George Utter  
McGraw Hill Company

## Capital improvements remain on schedule

With the help of a mild winter, we were able to put a new roof on our main office building and finish the grading, edging, and crushed-stone surface for our driveway. Funding and materials provided by Champlin Foundations, Kimball Foundation, and WESCON Corp. of CT.



## From the Executive Director

In a couple of months, we will begin our membership renewal drive. Around June 1st, notices will be sent to members to renew their membership in the Association.

At times, it may seem to some of you that these requests are coming in one after the other. The reality is, we only ask our members for support twice each year—once at membership renewal in June, and again in December for our annual appeal to members for support. This is not unlike, and is probably less invasive than, other non-profits.

Sometimes members call or write us, frustrated by reminders and the timing of them. If you receive one that doesn't apply, simply ignore it. With a mailing of over 1000, you can be sure that mistakes will occur. And please don't take it personally—reminders are usually generic and not personally addressed.

Whatever the form, we appreciate the support our members give, in the many ways they give it. Some offer financial support, some offer sweat equity, some volunteer to lead canoes, or assist in the office. Whatever the offering, we are most grateful for it, and we thank you all for your commitment to the watershed and to WPWA. It motivates us to continue to work hard for the watershed.

*Lou Ursso*



## Wood River sediment at Charbert tests clean

By now many of you may be aware of the recent spill that occurred at the site of Charbert, Inc. on the Wood River at Alton Dam, just north of the confluence with the Pawcatuck River. Approximately 1.5 million gallons of wastewater was released as a result of a breach in the wall of a wastewater treatment lagoon in early February. The purple-tinted wastewater was believed to contain heavy metals and volatile organic compound in a relatively dilute state. In 1999, a similar release occurred there.

WPWA collected six sediment samples in the areas adjacent to the facility. Fortunately, the results turned up only background amounts of heavy metals in the sediment. Though highly unlikely one incident would have caused metals to accumulate, a history of releases in one location could leave metals over time. As Watershed

Council, WPWA felt a need to ensure the safety of the recreational waters in that area.

News of the spill did bring forth a number of residents who called to report a history of odors and poor air quality in the vicinity of the plant, and a frustration with the apparent inability to get relief. WPWA will continue to work with RIDEM to encourage ways of minimizing the impacts of this factory's operation on the air and water quality we are working so hard to protect.



Charbert, Inc. on the Wood River in Richmond, RI.

## Things for Spring....

*Opening Day in the Watershed*  
April 13, 2002; 6-10am

Help WPWA and Trout Unlimited control litter in the watershed by bringing a reusable mug on Opening Day. If you do, we'll give you free refills courtesy of Bess Eaton Coffee and Bakery. Locations: Meadowbrook Pond, Rt 165 Quonset Hut, Barberville Dam, Carolina Trout Pond, and Frosty Hollow Pond (*hot chocolate for kids at this location only*)

*Earth Day*

April 20, 2002; 9am-1pm

WPWA will coordinate cleanups at river access sites in the Pawcatuck watershed. Volunteers of all ages are asked to join in the cleanup effort and the Earth Day celebration at the WPWA office afterwards. Bags, gloves, and other supplies will be provided by RIDEM. Refuse container will be donated by M. J. Murphy.

*Annual Meeting*

May 9, 2002; 6:30-9pm

Please join us for WPWA's 19th annual membership meeting. Hear a review of the past year, elect new board members, and just have a good time. Cash food and bar optional. Wood River Inn, Hope Valley, RI.

*Shorelines and Glacier Walk*

May 11, 2002; 10am start

Dr. Charles Hickox leads a 3-mile walk along Little Narragansett Bay to Old Fort Mansfield on Napatree Point. After lunch we will move on to the site (*continued on Page 7*)

## **Drought conditions in the Pawcatuck threaten water supplies**

Harold Ward

The Rhode Island Water Resources Board issued a Stage II Drought Watch on 14 February 2002, and some drought indicators now are headed toward a Stage III Drought Warning. Although March precipitation so far has been near normal, the six-month precipitation is running about 60% of normal. The USGS streamgage on the Pawcatuck at Wood River Junction showed a mean flow in February that was 14% below the previous historic low, recorded in February 1944. (This gage reports real-time readings that are posted on the web several times a day - <http://waterdata.usgs.gov/ri/nwis/uv?01117500> - note that the number of days for which the flows are reported can be changed - the flows for late February are the historic lows.) Streamflows respond more rapidly to a rain event than does ground water, but if groundwater is low, streamflows decline quite rapidly, because the groundwater flow to the streams is much diminished.

The groundwater levels for February at the USGS observation well in Richmond were the lowest recorded since the well was drilled in 1989. Groundwater is the only source of drinking water in the Pawcatuck, and so groundwater levels are the strongest indicator of the reserves for the normally dry summer months. Our situation is thus quite different from those in the Providence metropolitan area who depend on the Scituate

Reservoir for their water supply. The Scituate has sufficient storage to carry through a year's drought without curtailing use. The Water Resources Board recognizes that different water systems have a different need to respond to low precipitation periods, and on its website (<http://webster.wrb.state.ri.us/>) will soon have a map that shows the drought conditions for all areas of the state. The USGS also posts drought conditions for RI and MA monthly at: [http://ma.water.usgs.gov/water\\_const/drought\\_conditions\\_0202.htm](http://ma.water.usgs.gov/water_const/drought_conditions_0202.htm)

Even if precipitation returns to normal during the spring and summer of this year, very little groundwater recharge is expected. As soon as trees begin to leaf - normally in mid to late April, but probably a bit earlier this year because of our unusually warm winter - trees will draw and transpire most of the rain that falls. Those of us drawing water from the Pawcatuck ground water system should begin our water conservation programs without delay. The Water Resources Board's website gives links to sites with conservation tips. For many water systems in the Pawcatuck, water use nearly doubles during the summer, as we begin to water our lawns and gardens. Consequently, water use restrictions - which seem inevitable for this summer - focus primarily on outdoor water use, in the extreme, forbidding the outdoor use of water altogether. We can to some extent reduce the inconvenience of these restrictions by planning ahead - choosing drought tolerant plants for gardens and landscaping, collecting

rainwater for irrigation, and using efficient irrigation systems. (A conventional lawn sprinkler application of water can lose up to half of the water it sprays by evaporation before the water reaches the plants it is intended to nourish.) Of course, we also need to repair leaky faucets and toilets.

While our focus in times of drought usually is primarily on our own needs, we should not forget that lowered water levels in streams and wetlands will stress these aquatic ecosystems. The less we pump from the ground and the streams, the more that remains for the fish and the macroinvertebrates that feed them. The Natural Resources Conservation Services this spring is beginning a four-year study on how water use can be optimized in the Pawcatuck. The first year will be mostly devoted to gathering data, and there will be opportunities for WPWA members to participate by assisting with regular reading of stream gages and attending public meetings. We also are active participants in the development of the State's Drought Management Plan. Progress on these activities and current drought information can always be found on our own website - [www.wpwa.org](http://www.wpwa.org).

## Job Corps *(continued from Page 1)*

possibility for impacting the nearby Bear Swamp, and subsequently the Queens River- both of which are important to the watershed.

An important goal of WPWA is conservation as distinguished from preservation, which implies efforts to ensure the wise and sustainable use of natural resources, rather than total protection. A recent study of data from the Queens River sampling stations has documented some effects of the sewage discharges from the former Ladd School which induced abnormally high phosphorus levels at the sampling site in the river near the school. Since the termination of active discharges from this plant there has been a declining trend in phosphorus levels at this site to levels approaching average conditions at adjacent sites.

Interestingly enough, Sand Bridge, a site just downstream of Bear Swamp, exhibited little or no effects from the Ladd School discharge. Consequently, when the discharge ceased in 1995, the Sand Bridge site still measured between 20 to 28 ppb of total phosphorus. According to the 1997 URI Watershed Watch report "The wetlands of Bear

Swamp, which reduced the impact to the river of the high phosphorus inputs, apparently slowly released excess phosphorus, resulting in stable total phosphorus levels at Sand Bridge. It is possible that phosphorus may leach out of Bear Swamp for several years, moderating the downstream impact of the Ladd School sewage treatment plant shut down."

The plans for the Job Corps Center call for a septic system with a drainfield. Although it is recognized that wetlands have a high rate of biological productivity which can transform many common pollutants into relatively harmless byproducts or to nutrients that can be utilized to enhance productivity in the ecosystem, this desirable attribute is limited and its magnitude is unknown for Bear Swamp at present. Thus we are concerned about the lack of information regarding the overall phosphorus retention capability of the Bear Swamp wetland. Phosphorus is often a limiting nutrient in wetlands, rivers and lakes, sometimes preventing higher levels of productivity which are desired; however, most normal wastewater discharges contain elevated phosphorus concentrations which stimulate nuisance algal

growth downstream from the entering waters.

In order, therefore, to evaluate the likely environmental risk of the septic system proposed for the new Job Corps Center, it is necessary to have certain additional data such as a precise estimate of the extent of the Bear Swamp wetland, the average depth and composition of the soil, as well as the flow rates in and out of the wetland. Of special significance is a measure of the absorptive capacity of the Bear Swamp soil for phosphorus, the present phosphorus loading, and the rate at which this capacity might be reached as a result of the proposed septic facility.

In summary, we believe it is necessary to have detailed information of the sort indicated above in order to assess the environmental risks of the proposed wastewater treatment system. Until this risk has been properly evaluated, it seems prudent to exercise the precautionary principle of delay in order to forestall damage to valuable natural resources in our watershed.

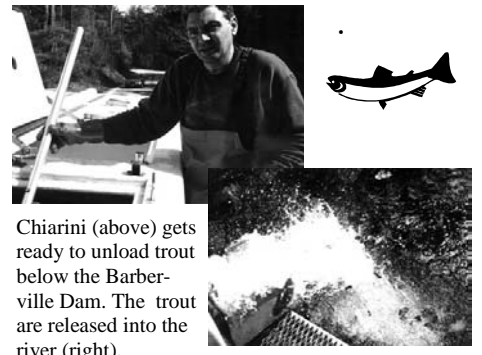
*Be sure to visit us at  
[www.wpwa.org](http://www.wpwa.org)*

## Stocking trout so we can fish them out....

On March 21st, Fred Chiarini from the RIDEM's Perryville Fish Hatchery was on the road, stocking up favorite fishing areas in preparation for Opening Day on April 13, 2002. Fred made a stop at the Barberville

Dam, the site of WPWA headquarters, and unloaded about 1000 trout, including some hefty breeders in the five-pound range.

Numerous areas within the watershed will be stocked with approximately 40,000 fish (65,000 statewide) with many to be caught on Opening Day.



Chiarini (above) gets ready to unload trout below the Barberville Dam. The trout are released into the river (right).

**WPWA CANOE AND HIKING GUIDES**

Order Form

***Wood-Pawcatuck River Routes Map***

By Charlie Hickox and Polly Matzinger

\$3.50 members (\$4.50 non-members)

Navigate the Wood and Pawcatuck Rivers from source to sea with this colorful folded map.



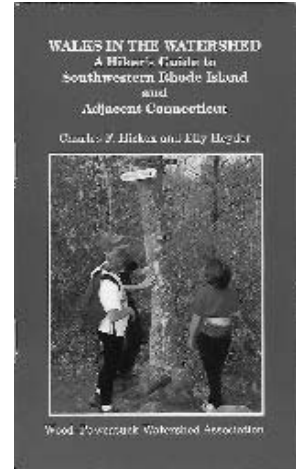
**Newly-revised Map to be published this May!**

***Walks in the Watershed***

By Charlie Hickox and Elly Heyder

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Sixteen of the watershed's best loop hikes contained in a handy pocket-sized guide



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Mail form and payment to:  
 WPWA  
 203 Arcadia Road  
 Hope Valley, RI 02832

***(Programs - from Pg. 4)***

of the proposed *Champlin Glacier Park* in Westerly, a unique trail crossing an end moraine left by the last great ice sheet. Meet at the bayside parking area in Watch Hill at 10:00 AM. Bring lunch. Pre-registration required.

*Source to Sea Canoe and Kayak*  
 June 8, 15, 22, 29, 2002  
 9am start

Over four consecutive Saturdays in June, WPWA will lead trips starting on the 8th from the Wood River in Exeter, and ending on the 29th in Little Narragansett Bay, Westerly.

Contact the office for program information or to pre-register where required. 401-539-9017 Or [info@wpwa.org](mailto:info@wpwa.org)

**Special thanks to...**

**Paul Lynch** of Wescon Corporation for donating crushed stone for our new driveway.

**Ray Cherenzia** of Cherenzia Engineering for donating time and services on several watershed projects.

**M.J. Murphy** for donating a refuse container to collect and transport Earth Day refuse to Johnston.

**Narragansett Chapter of Trout Unlimited** for partnering with us to control litter on Opening Day.

**Charlie Hickox and Elly Heyder** for your time and talent in revising the River Guide.

**Senator Donna Walsh** for again going to bat for WPWA to secure a legislative grant.

*We couldn't do our work without your help and support!*

**Grant Awards Announced**

NRCS WHIP Program  
 \$8,000 grant for riverbank and habitat restoration

RIDEM Earth Day Mini-Grants  
 \$800 to offset river access clean-up costs in four towns.w

The Nature Conservancy  
 John Wald Science Grants  
 \$3,000 to conduct a quantitative study of brooktrout habitat.

RI Senate - Legislative Grant  
 \$5000 to support strategic transient water monitoring.

**Application for Membership**

Name \_\_\_\_\_

Street \_\_\_\_\_

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Phone \_\_\_\_\_ Email \_\_\_\_\_

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- \_\_\_\_\_ Supporter \$100
- \_\_\_\_\_ Sponsor \$250
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- \_\_\_\_\_ Benefactor \$1000

In addition to my dues, I am enclosing an additional contribution of \$ \_\_\_\_\_

All but \$5.00 of your dues is tax deductible within the limits of the law.

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