

# *Upper Delaware Scenic and Recreational River*

## **2011 State of the Park Report**

*Sean J. McGuinness, Superintendent*



*"Earth and sky, woods and fields, lakes and rivers, the mountain and the sea, are excellent schoolmasters, and teach some of us more than we can ever learn from books"*

**-John Lubbock**

## 2011 State of the Park Report

### Upper Delaware Scenic and Recreational River

Upper Delaware Scenic and Recreational River (UPDE) is a working partnership dedicated to preserving the "...outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural... and other similar resource values that qualified UPDE for inclusion in the National Wild and Scenic Rivers System". Increased threats to the resource have led to renewed interest in the management and protection of the Upper Delaware River valley and provided an opportunity to renew our commitment toward cooperative management. Discussions with partners on the Upper Delaware River Management Plan, the Secretary of the Interior's Guidelines for Land and Water Use and the Upper Delaware Act have opened a dialog on the roles and responsibilities for preserving and protecting the Upper Delaware's remarkable values.

Despite the slow economy and limited resources of the Upper Delaware communities, growth and development are having an effect on park resources. Since December 2010, Upper Delaware Scenic and Recreational River (UPDE) staff has monitored 54 resource issues, indicating a trend toward increased use and a need for expanded communication, as well as renewed commitment to cooperative management.

Superintendent Sean McGuinness called upon park partners to engage in discussions regarding UPDE's values and future opportunities for protecting natural resources and promoting economic growth, beginning with the Upper Delaware River Management Plan, the Secretary of the Interior's Guidelines for land and Water Use and the Upper Delaware Act. Partners in the conversation during FY-2011 include:

- The Upper Delaware Council
- New York State Department of Environmental Conservation
- Pennsylvania Department of Conservation and Natural Resources
- Delaware River Basin Commission
- Wayne-Pike Conservation Partnership
- Upper Delaware Roundtable
- Common Waters Partnership
- Delaware Highlands Conservancy
- Catskill Mountainkeeper
- Delaware River Keeper
- Emergency Response leaders in the five UPDE counties
- and many other partner organizations, as well residents and staff

The product of the discussions is renewed interest and concern for the river and how NPS can contribute to the quality of life and well being.

Natural Gas development contributes to the urgency of the conversations as community leaders and the Upper Delaware Council strive to find balance between preserving the river and corridor and perceived employment and economic growth. Key to all leaders is preservation of water quality and quality of life. Meanwhile, managing storm water resulting from pipeline construction, planning for the impacts to roads by industrial trucking, developing land use regulations and issues of mining aggregate and stone in preparation for well pad construction challenge the local municipalities, UDC and NPS as we await both Delaware River Basin Commission and New York State regulations for managing the issues and respond to Pennsylvania's policy implementation. The issue is divisive. Finding middle ground is difficult. The UPDE law, however,



Pipeline Construction near UPDE boundary



Newly-constructed stone mine road in Scenic section of UPDE corridor

provides the river communities with authority and responsibility of protecting the river corridor, and they are motivated. As a result, both comprehensive planning and zoning rewrites have accelerated and informational meetings abound.

Congressman Maurice Hinchey (NY-22) represents the largest New York State geographic area currently affected by the issues surrounding gas drilling. He has teamed with other Congressional Representatives to assure that science guides decision makers as they traverse the issues of water and air quality.

### Proposed Boundary Extension

Representative Nan Hayworth (NY-19) is considering a boundary extension to include a Town of Deerpark river access critical for both river users and emergency response. Boaters beginning

their trips within UPDE use this site, which is literally at the Upper Delaware Boundary, extensively. Day use is also very high, causing health concerns resulting from lack of toilet and garbage services. The Township and Orange County, NY, are seeking funds to purchase the site and support of their Pennsylvania counterparts. They have asked the Congresswoman to address the issue. She has asked NPS for assistance.

### **Interagency Project Review Coordination**

Akin to the discussion regarding growth is an ongoing need to revisit our commitments with state and local agencies regarding interagency cooperation as directed in the Upper Delaware Act. We have met and worked with agency representatives to discuss these responsibilities, including:

- Reorientation to the Upper Delaware Partnership, commitments by both states and the Delaware River Basin Commission, and the roles of the agencies in both implementing the Upper Delaware River Management Plan, and in their project review and permitting processes.
- Pond Eddy Bridge Section 4(f) review – Negotiated concerns of NPS and partners regarding replacing the National Register-listed steel truss Interstate bridge. Agreement has been reached among the State Historic Preservation Offices, the Advisory Council for Historic Preservation and the National Park Service that replacement is the only viable alternative to rehabilitation. UPDE will participate in a Design Concept Committee for the new bridge. Our concern is for a structure that will complement and preserve our Outstanding Resource Values.
- Working with the Army Corps of Engineers and both state agencies to assure the requirements of Section 7 (Wild and Scenic Rivers Act) are addressed with NPS when permitting projects in the corridor.
- Implemented a Special Use Permit policy to assure safety during construction projects that will affect river users.
- Alerted and worked with New York State Department of Environmental Conservation concerning a large, unpermitted fish farm within the river banks and facilitated their response to the incident.

### **Management Planning**

As we have challenged our partners to reassert their commitment to the Upper Delaware, so has UPDE revisited and begun to focus our goals. Management growth initiatives included:

- Superintendent completed the Superintendent's Leadership Program
- Management Team assessed our Strengths, Opportunities, Aspirations and Results, and developed a rudimentary plan for achieving our goals with the assistance of a NPS-contracted coach.
- Prepared a vision statement for the Upper Delaware
- Hosted Wild and Scenic Rivers training for UPDE, DEWA and other NER park staff. Training designed for the UPDE partners was discussed for the future.

- Widely distributed a digital compendium of the Wild and Scenic Rivers Act, the UPDE Act, the Upper Delaware River Management Plan (RMP), the Secretary of the Interior’s Guidelines for Land and Water Use, and other important documents.

### River Safety

Though the weather was rainy and the river high throughout the summer season, “visitation” was not down significantly. Colloquial observations are that there were many more visitors on the “good weather” days. Whether visitors were vacationing nearer their metropolitan residences because of the economy, or because of the “draw” of the Upper Delaware, the



High School Students Receive Safety Talk prior to River Cleanup

downside was five visitor fatalities, a remarkable change from the trend of the past 30 years. While the *number* of deaths has increased, it is important to note that three of the five deaths were swimming related, one was fishing related, and only one was boating related. There are no designated swimming areas, as both Pennsylvania and New York (owners of the accesses) prohibit swimming from state-owned accesses.

The following initiatives illustrate the park’s renewed commitment to reduce incidences of drowning by informing river users about river safety.

- Interpretive staff presented safety information to more than 53,000 river users in 2011. The greatest number of visitor contacts occurred at four riverside kiosks and on roving patrols.
- Park staff partners with National Canoe Safety Patrol (NCSP) volunteers for greater river patrol coverage.
- Historic drowning statistics are used to station staff at the most dangerous locations.

- More river patrols gave us the opportunity to expand the loaner lifejacket program to a greater number of river users.
- Seven new boating and swimming safety posters were designed and produced for display throughout the valley
- UPDE and DEWA hired a Student Conservation Association Intern to design a River Safety Junior Ranger book which will be made available to UPDE, DEWA, and the Lower Delaware.
- A new water safety exhibit was created for the Narrowsburg Information Center and sales items include safety whistles and safe boating books.
- River safety and river conditions information is also available on our daily river conditions hotline, on two TIS stations, and on the park's web page.
- River safety messages were filmed for TV-News stations in Scranton and Milford, PA, Binghamton and Hudson Valley/Catskills, NY, and the NYC/NJ metropolitan area.
- "Dangers of the Delaware" videos featuring UPDE Interpretive Rangers are available on YouTube.
- Applied for a National Park Foundation Grant to expand our water safety media campaign.
- All UDPE seasonal Interpretive Staff receive First Aid/CPR and Canoe & Whitewater Rescue training.
- The Interpretive Staff partners with the National Canoe Safety Patrol for monthly Skill Drill training.
- Three members of the Interpretive Staff received Motor Boat Operator training.
- Over 2,000 students from schools, camps and community centers, and many participants at festivals and parades, received river safety information supported by life-saver and lip balm give-away items and a new.
- UPDE rangers collaborated with Delaware Water Gap personnel to design and produce a unified water safety message for both parks. Signage with safety messages directed at visitors who swim in the river, including bilingual swimming safety for popular swimming locations.

### **Interpretation/Education**

The Interpretation Division is responsible for visitor education and management of the volunteer program. The division's staff includes three permanent (a chief, an education specialist, a GS-09 park ranger) and ten summer seasonal rangers.

#### **Education Program**

- In support of First Lady Michelle Obama's "Let's Move" campaign, UPDE Interpretive staff conducted a High School River Clean-up. Students paddling canoes helped remove over 700 pounds of debris from the river.
- Curriculum based education focused on river safety and recreation, the park's cultural resources, and connecting students to the park's natural resources and the relevance of the park in their lives.
- 536 4<sup>th</sup> grade students from six New York and Pennsylvania schools participated in the Delaware and Hudson Canal Days programs at the Delaware Aqueduct (Roebling Bridge).

Canal Days is an on-site school program that educates students about the history of the D&H Canal, canal life, how locks worked, wood working, and the history of the canal through song.

- The annual Zane Grey festival was presented in partnership with the Zane Grey's West Society. This important venue highlights the life and writings of famed Western writer Zane Grey as well as the rich natural and cultural history of the Delaware River Valley. Over 800 people came explore the museum and walk the grounds, visiting exhibitors, attending programs, taking part in children's activities, or participating in kayak demonstration on the Delaware River.
- The annual EagleFest, a Narrowsburg community event, brought 362 visitors to our information center, as well as to many educational programs hosted by our partners. As usual, at least one live Eagle flew overhead in the afternoon to the delight of lucky visitors.



- UPDE received a Regional Transportation grant to partner with the Port Jervis School District enabling fifty (50) underserved students in the district's Outdoor Summer Leadership Program to immerse themselves two days a week for three weeks in UPDE's natural resources, including forest ecology and ornithology while hiking the Tusten Mountain Trail, Water Quality issues during macro invertebrate studies, water sampling and

testing, and invasive plant studies. In the third week they learned the importance of water safety during a rafting trip on the river.

- UPDE was selected as a pilot park in “Bridging the Watershed”, an outreach program of the Alice Ferguson Foundation, in partnership with the NPS and area schools. The goal is promoting student academic achievement, personal connections with the natural world, lifelong civic engagement, and environmental stewardship through hands-on curriculum-based outdoor studies in national parks and public lands. This is accomplished by field studies for students, teacher training, and standards-based curriculum development.

### Volunteers in the Park Program



Youth Volunteers celebrating their "day's take" of trash from the river during a cleanup paddle trip

- Six interns, the National Canoe Safety Patrol, Zane Grey’s West Society, the Eagle Institute, the annual River-Clean-Up in partnership with Kittatinny Canoes, and Public Lands Day Access Clean-Up , 347 Volunteers in all, contributed 12,345 hours, up 3% from last year.

### Resource and Visitor Protection

The Resource and Visitor Protection division is responsible for resource protection, visitor safety, search and rescue, training, and interagency relations. Staff consists of the Chief Ranger, two full time US and two subject-to-furlough Protection Rangers, and one Student Career Employment Program Protection Ranger. We also employed two seasonal Protection Rangers who graduated from Santa Rosa Law Enforcement Academy and Hocking College

Seasonal Law Enforcement Academy respectively. The program is supported by a Law Enforcement Assistant.

### Law Enforcement

With the park's resource management team, conducted initial investigations of two significant resource crime incidents.

- For the first time since UPDE's establishment, rangers instituted full custody arrests, handled through the federal system. Previously, arrests were turned over to state, county and/or local law enforcement agencies. With everyone's resources stretched thin, this change built respect and a positive relationship with our partner law enforcement agencies. It also built pride and professionalism in the ranger staff.
- Conducted targeted patrols in coordination with state wildlife officers, aimed at identifying and apprehending illegal fishing guides. This was done at the request of the fishing guides, during a spring meeting attended by the Superintendent and Chief Ranger. Response to the patrols by the licensed guides was very positive.
- Conducted targeted patrols aimed at visitor safety. Rangers were on the water, utilizing a new 20' River Pro Inboard Jet Boat, in addition to our older vessels. Time on the water eclipsed any in the past, with two boats patrolling most weekend days and evenings. Boats were out during the week as well. These high visibility patrols were conducted in areas that

have heavy rental and private boater use. Rangers used a two pronged approach of education and enforcement, including the ability to issue loaner lifejackets to boaters who did not have lifejackets on board. During these patrols rangers made



- hundreds of contacts and delivered water safety messages to thousands of river users.
- Through the use of alternative work schedules and flexible scheduling, rangers worked weekends from 8:00 a.m. until midnight. This reduced overtime costs, while providing greater coverage and protection. It was common to hear from night time anglers, "When did you start working this late at night?"
  - Assisted law enforcement and emergency operations at DEWA, and provided instruction for other park's law enforcement staffs as well as the Seasonal Law Enforcement Training Programs at Temple University and Unity College. Ranger Larry Neal planned, coordinated

and helped instruct a 40 Hour Annual Law Enforcement Refresher attended by rangers from Upper Delaware, as well as Delaware Water Gap, Steamtown and Morristown.

- Assisted state, county and local law enforcement officers on a variety of emergency law enforcement incidents.
- Rangers conducted a joint traffic safety checkpoint with local law enforcement partners. By working with our state, county and local partners we developed a feeling of mutual respect and understanding of each other's missions and a strong and positive working relationship.
- Completed co-location and management of dispatch services for law enforcement and emergency services to Delaware Water Gap NRA's 24 hour Communications Center, resulting in better overall officer safety, response capability and communication services for both emergency and non-emergency incidents. UPDE now has one number available 24/7, where a professional emergency dispatcher can assist callers or put them in contact with someone who can.
- Responded to a variety of law enforcement incidents, including large groups of intoxicated and disorderly visitors. The rangers took appropriate enforcement action and dealt professionally with all who they contacted. Several thank you notes and messages were received complimenting the rangers on their professionalism and dedication to public service. No complaints were received.
- Worked with U.S. Federal Courts and the U.S. Attorney's Office for the Middle District of Pennsylvania to establish arrest procedures. Rangers now make and handle arrests through the federal system.
- Worked with Central Violations Bureau and U.S. Federal Courts to process Violation Notices and clear backlog of old cases, some going back to the 1980's, from the court dockets.

#### Emergency Services & Visitor Safety

- During four of the five visitor fatalities, the rangers were the primary investigators, established command of the incident, and then worked closely with state, county and local emergency responders, coordinating the search and rescue and ultimately, recovery operations. Previously fatality investigations occurring in the park were turned over the state or county law enforcement agencies for investigation with the National Park Service (NPS) serving in a support role. This year we have turned that around, gaining the respect and building better working relationships with partner agencies. The one incident we were not the primary investigative agency on, we were not notified of until after the fact by state and local emergency responders. That situation has been remedied and should not be repeated (see Emergency Services Section below).
- The Superintendent met with all five county emergency management coordinators, during which roles and responsibilities were clarified for emergency response to river related incidents where the NPS is lead agency. Contacts were established with all five counties' emergency management coordinators and their respective emergency communications centers to ensure that the NPS is always notified of incidents on the river in a timely manner. The chief ranger has continued to meet with each of the county emergency management coordinators to discuss communication and operational issues and develop solutions to problems so that all agencies can better work together and serve the public.

- The Chief Ranger, along with the Regional Dive Officer, met with fire departments and the local dive team to de-brief, resulting in better working relationships and allowing NPS to provide guidance, support and training to the local departments.

- Fully utilized the National Canoe Safety Patrol to augment visitor safety and emergency response capabilities. One of many positive outcomes was when a Boy Scout experienced foot entrapment while “body surfing” in the Skinners Falls rapids and he was held under by the powerful current. Another member of his troop performed rescue breathing until National Canoe Safety Patrol (NCSP) members staged at Skinners Falls arrived on scene to extricate the Scout. Rangers, NCSP personnel and local first responders transported him to the shoreline and the ambulance. He was treated and released the same day.



- Managed park emergency response and coordinated with county emergency management personnel during Hurricane Irene and Tropical Storm Lee. NPS personnel were integrated into county response plans and staged with county resources, resulting in better communication and coordination of emergency response personnel. The Chief Ranger’s Office communicated daily with canoe livery owners, providing them updated storm and river condition forecasts so that they could provide a safer visitor experience.
- Conducted public safety patrols of high visitor use areas, especially where swimming is the primary activity. Visitors were educated about how to safely swim, and encouraged to wear lifejackets while swimming in the river.
- Rangers conducted water safety and basic swift water rescue training for park staff, National Canoe Safety Patrol members and canoe liveries.
- Ranger Kevin Reish attended instructor training, and then conducted three Motorboat Operator Certification (MOCC) Courses for UPDE staff, ensuring certified operators for emergency response.
- Ranger Ron Babus worked with DEWA/UPDE GIS personnel to gather GPS Grids for locations along the river. Maps will be developed for both NPS and county emergency communications centers to enable better emergency response to river related incidents.
- Ranger Vince Pareago attended Structural Fire Coordinators Training and integrated those duties into his responsibilities as the park’s collateral duty safety officer. He also completed safety and fire inspections of all park facilities.

### **Cultural Resources**

- Updated and submitted our Scope of Collections Statement for items being curated by the park.

- Obtained a security survey for the buildings housing museum collections. We have used this document to make improvements to the security of the museum collections. Further improvements are requested through PMIS.
- Secured services of a Structural Engineer to examine Zane Grey House and identify structural issues and recommend remedies for the deficiencies. With this information our Maintenance Division can plan for projects to correct the problems.
- The entire Zane Grey site was listed on the National Register, updating the original designation of the Home and Museum to reflect parcels acquired since the structure was acquired.
- Contracted for a Historic Structures Report to plan for the preservation of the ancillary buildings original to the site. This should be completed in 2012.
- Completed Treatment proposals for the wooden objects and textiles in the museum collection. We will now pursue funding for the treatment of these objects.
- Updated the condition assessments, with photographs, for the List of Classified Structures
- Our Curator attended the Zane Grey's West Society Convention in Williamsburg, Virginia, where she gave a presentation on the history and evolution of the Zane Grey Museum under the trust of the National Park Service.

### **Administration**

- Assisted other parks including: mentoring and close-out assistance to at Fort Stanwix (FOST), Martin Van Buren (MAVA) and Women's Rights sites; managing GovTrip and Timekeeping for FOST and MAVA; management and assistance for the NPS Property Management system to the Upstate NY Subcluster, and permanent change of station support to Edison and Morristown sites.
- The Admin Officer and team of IPPM course instructors live-tested the re-written material in November and December, made a few revisions and continued with 8 more classes to finish out the year with 10 classes, of which she taught 8. In addition, 8 new trainers were brought into the fold and 4 are from the Northeast Region.
- The Northeast Regional Office Information Technology (IT) office requested our IT Specialist to assist with the IT Review at Roosevelt-Vanderbilt (ROVA). She continued supporting ROVA through the year to deal with the unexpected departure of their IT person. Coordination of all aspects of IT functionality was needed, including upgrading several park systems to current software standards and support of wireless networks.
- She coordinated the IT Review held at UPDE, and one result was NER funding the purchase of 2 Dell laptop computers and 1 Panasonic Toughbook due to the money lost in FY2008 resulting from default of Gateway contracts.

### **Diversity**

- Hiring in FY2011 included: 2 permanent fulltime employees (1 ea in Maintenance and Protection divisions); 2 subject-to-furlough WG-05 Maintenance positions; 1 GS-05 TERM Natural Resources position; 14 seasonal positions in 3 different divisions; 1 SCEP GS/GL-05 LE position. 2 of the 20 positions hired have a disability; 5 of the 20 hired are women.

- Interpretive Division recruits interns from over 300 colleges and universities. The Interpretive Staff included one Hispanic seasonal and one learning disabled seasonal employee. Bilingual river safety signs were designed and purchased. UPDE received Regional Transportation Grant funding to bring underserved youth to the park for a series of curriculum based education programs.

### **Geographic Information Systems (GIS)**

- The GIS team worked on several projects in FY11, generating maps and other products in support of both UPDE and DEWA. The following UPDE projects stand out: park/visitor information publication mapping assistance, proposed cell tower and other infrastructure, viewsheds, Hurricane Irene and other park incidents support, river campsite and trails planning efforts, and land use/zoning issues.

### **Maintenance**

The Maintenance Division provides maintenance services for park owned facilities, structures and landscapes. The inventory consists of 25 buildings or structures, both modern and historic, in addition to three cultural and three modern landscapes. During the summer season, trash removal, portable toilet services and mowing are provided at 16 river accesses and rest stops throughout corridor. Winter operations include round-the-clock snow removal at Roebling Bridge, and opening access roads for office facilities.

The division is managed by the Chief of Maintenance and a Facilities Services Assistant at the park headquarters. The maintenance staff is stationed 14 miles south of the headquarters with a Maintenance Mechanic Leader, One Maintenance Mechanic and three Maintenance workers.

- Emergency funding was provided through NPS Northeast Region to replace the cedar shingles and hips and valleys of the main roof of the Zane Grey Museum, which exhibited signs of accelerated failure.





The D&H Canal was heavily damaged

- The Maintenance staff assisted the protection staff in moving equipment and items to higher ground at Milanville and the Barryville office and responded to heavy rain storms on October 2, 2010, which caused extensive flooding and damaged the Ten Mile River access and the D&H Canal Trail. Twenty to thirty tons of debris was deposited on the Ten Mile River access. The D & H Canal trail suffered major erosion for approximately 500 feet at the north end of the trail.

- The D&H Canal Trail had already been heavily damaged and trees down due to the high winds and high water from Hurricane Irene.
- Ten Mile River access was littered with river debris and heavy mud on the access road. A small drainage ditch in back of the parking lot washed due to heavy flash flooding.
- A new roof, insulation and siding were installed on the Museum/ Archive storage building at the Headquarters complex. The Project completed energy efficient upgrades for all four Headquarters buildings



Ten Mile River access was littered with debris and heavy mud

### Natural Resource Management Activities

Natural resource program development and implementation, including identification of resource protection responsibilities resource protection needs, and the prioritization of NPS and partner organization efforts and capital toward achieving the desired resource conditions is managed by this division. Major duties include water quality monitoring, acquiring Inventory and Monitoring data on flora and fauna to assess the extent and condition of UPDE resources,

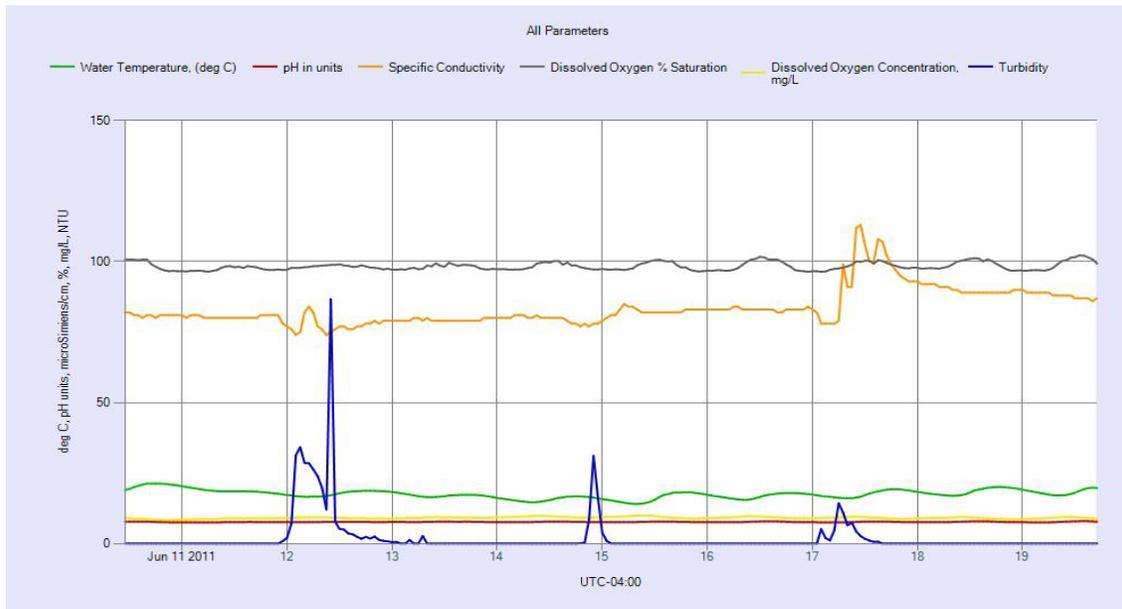
identifying threats, and developing funding proposals to address additional resource and ecosystem knowledge needs.

The Division consists of a Natural Resource Specialist, a Biologist, and this past year also included a term Biological Science Technician. The Chief of Resource Management position has been vacant for 5 yrs.

#### Tracking Marcellus Shale Natural Gas Development Issues

- The Upper Delaware Scenic and Recreational River is at the intersection of the largest and most rapidly developing natural gas field in the U.S., the Marcellus Shale; and the longest reach of Special Protection Waters in the country, the upper 197 miles of the main stem of the Delaware River.
- We continue to focus on natural gas development issues, attending meetings, reading reports, participating in conference calls, keeping abreast of developments, and reviewing and commenting on proposed regulations in an effort to best protect UPDE resources and values. NPS Geologic Resources Division and the Air and Water Resources Division staff team members provide a great deal of assistance with this issue.
- On September 7, 2011, the New York State Department of Environmental Conservation (NYSDEC) released their long-awaited Revised Draft Supplemental Generic Environmental Impact Statement (dSGEIS) on the Oil, Gas, and Solution Mining Regulatory Program, a 1537-page document outlining how they proposed to regulate this activity in New York state. UPDE staff will review and comment on this document during the 90-day comment period and collaborate with other NPS and DOI staff to provide agency comments.
- The Delaware River Basin Commission's (DRBC) proposed natural gas development regulations were revised several times this year alone; our staff reviewed and provided comments for each iteration. Throughout FY2011, we have held monthly natural gas conference calls involving NPS staff from UPDE and other parks; the NPS Geologic Resources Division; NPS Water Resources Division; the Northeast Regional Office; the DOI Solicitor's Office in Newton, MA; Upper Delaware Council; and DRBC staff. These calls have been very helpful for sharing information, developing responses and strategies, and better understanding our authority over this activity at UPDE.

## Continuous Water Quality Monitoring



Daily measurements are taken on the hour for 30 days or longer. The software allows sections to be analyzed if irregularities arise, such as the increase in Turbidity coinciding with June 12, 15 and 17, rain events which increases sediment and particles moving through the water

- Funding received through the Regional Director's Office in 2011 made it possible to acquire 7 new multi-probe datasondes (sondes), submersible, multiprobe continuous water quality monitors, that can be deployed in waters for extended periods and time and programmed to record water quality parameters, enabling expanded continuous water quality monitoring on a number of Delaware River tributaries.
- Datasondes are deployed inside a protective PVC sleeve, anchored in streams by a steel cable. The devices measure water quality parameters such as dissolved oxygen, pH, conductivity, temperature, turbidity, specific conductivity and depth. The information is analyzed using AQUARIUS water quality monitoring software. The park's continuous water quality monitoring program was featured



Real time, off-site water quality monitoring will be accomplished with datasondes co-located with USGS gates on the Delaware River and the Lackawaxen River

in the local newspaper two part series titled Watching Water Quality; Multiple Efforts Underway.

- A USGS/NPS Water Quality Partnership Program proposal was one of only eight (8) projects funded nationwide. As a result of this funding, USGS will provide technical assistance to install 4 data sondes with solar panels and satellite transmitters, co-located with USGS gages, enabling off-site real-time monitoring of core water quality parameters. Three of these installations will be on the Delaware River main stem, and one will be on the Lackawaxen River, a major tributary of the Delaware.

With these installations projected for spring of 2012, we are on track to become the first NPS unit to serve continuous water quality monitoring data via telemetry to the NPS Water Resources Division's AQUARIUS server. The remaining 5 UPDE datasondes will be deployed in UPDE tributaries between March and December of 2012. This fleet of datasondes will then provide water quality monitoring over a range of key sites, enabling rapid detection of significant changes in water quality.

#### New Milanville Office Water Lab



**Bio-Tech Jessica Newbern Calibrates a Datasonde in the new UPDE Water Quality Lab**

- In 2006 our basement lab took on 3.5' of flood water, and numerous flood-threatening events since then have caused us to dismantle and remove equipment to a higher floor in the building. Our Maintenance Division constructed a new lab space in a vacant room on the first floor of the Milanville Office in 2011.

#### Scenic Rivers Monitoring Program

- We monitored 20 locations bi-weekly, May through September for this physical and chemical water quality monitoring program — including tributaries and main stem Delaware River sites, for fecal coliform, E.coli and enterococcus bacteria, and for a host of other chemical parameters including nutrient levels, total chloride, total alkalinity, and total hardness. The local newspaper provided good coverage of this program.
- In 2011 we collected numerous additional water samples at a sewage treatment plant outfall. The samples were analyzed for fecal coliform bacteria, E.coli and enterococcus bacteria. This outfall is believed to be contributing point source pollution into the Delaware River. The Township Sewage Enforcement Officer is working with us, and has received copies of the data. We will continue to test at this location to ensure no pollutants reach the river.

#### Biological Monitoring of Benthic Macroinvertebrates

- The park is cooperating with the Delaware River Basin Commission (DRBC) and NPS Eastern Rivers and Mountains Network (ERMN) to monitor benthic macroinvertebrates (BMI) as a means of assessing the health of stream ecosystems. Freshwater BMI are a very important part of stream food webs because they form the primary source of nutrition for many aquatic and terrestrial animals. Biologists from the Delaware River Basin Commission have conducted a structured study and sampling program for BMI at UPDE and DEWA for the past 8 years. A recent local newspaper article helped the public to develop an understanding and appreciation of this component of the Delaware River's ecosystem. We are partnering with the ERMN in a long-term BMI sampling effort on 12 UPDE tributaries as part of the Vital Signs program.
- We continue to share data with the Equinunk Watershed Alliance. They are very interested in partnering with us in the stewardship of Equinunk Creek, which data indicates has the highest water quality of the UPDE tributaries sampled by ERMN staff.

#### Invasive Species

- The NPS Northeast Region Exotic Plant Management Team (NER EPMT) treated and assisted with removal of non-native invasive plant species, including Japanese knotweed, Japanese barberry, multiflora rose, and mugwort. 2011 work focused on the areas around the Towpath Trail in Minisink Ford, NY, and around the D&H Canal remains at the Corwin Farm.
- The purple loosestrife transect monitoring and biocontrol release continued for the eighth consecutive year in Pond Eddy, NY. 3,000 *Galerucella pusilla* beetles were released in 2011. These beetles feed exclusively on the leaves, stems and shoot tips of purple loosestrife, which prevents seed production and distribution. Annual transect monitoring continues to show a definite decline in the loosestrife population in Pond Eddy, NY. For the first time in 2011 we documented *Galerucella pusilla* larvae during our monitoring.
- The Terrestrial invasive plant species mile-a-minute vine (*Polygonum perfoliatum*) was discovered on NPS-owned land at Lackawaxen, PA in 2011. This was reported to the ERMN Early Detection and Rapid Response coordinator and was hand pulled to remove as much of the plant as possible.

## Environmental Education

- The Water Snapshot program was presented to approximately 300 local elementary school students in 2011. Fourth and fifth grade students in two states, three school districts, and five schools were visited by a UPDE Park Ranger to explain the concepts and principles of water quality and environmental stewardship. This Delaware River basin-wide event helps students to take a “snapshot” and look at the water quality of the streams and rivers in their own backyards. The completed “Upper Delaware Snapshot 2011” Water Snapshot booklet was posted on the “Water Snapshot” page of the UPDE web page for easy student and teacher viewing and downloading.



Cover art of 2011 Upper Delaware Snapshot booklet by Sullivan West Central School student Alex Unser.

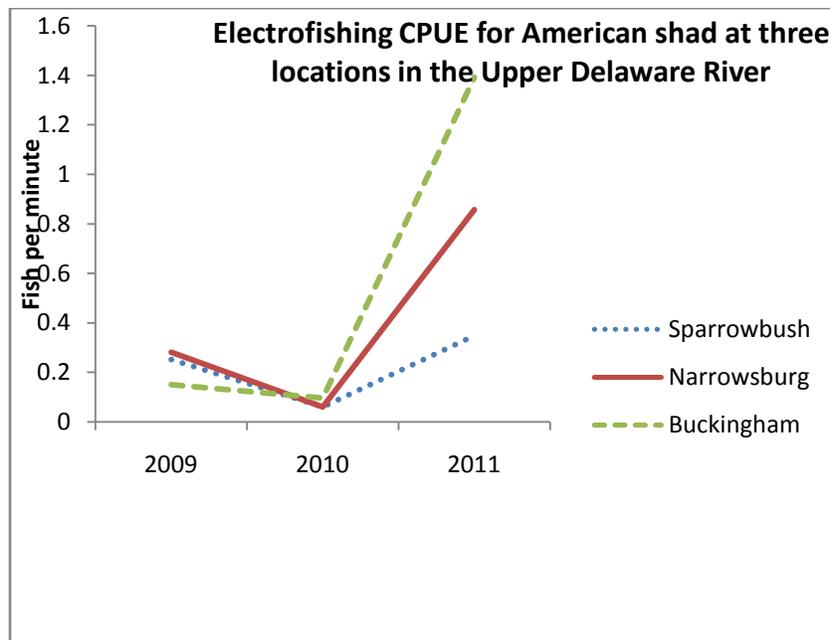
- We participated in the annual *Trout Release Day*, providing educational programs and helping students make the connection between this project and related local water quality issues, such as the ongoing Delaware River water quality monitoring programs conducted by the NPS.

## Study on Age Structure of Spawning Stock of American Shad in the Delaware River

For the third season, UPDE worked cooperatively with the U. S. Fish and Wildlife Service, Pennsylvania Fish & Boat Commission and New York State Department of Environmental Conservation on a NPS-funded project to provide data toward an overall description of the age structure of the spawning stock of American shad (AMS) in the Upper Delaware River. The 2011 electrofishing work produced 30 AMS sampled at Sparrowbush, NY access, 30 AMS sampled and 20 tagged and released AMS at Narrowsburg, NY access, and 30 AMS sampled and 17 tagged and released fish at Buckingham, PA access.



Data being collected from American shad before being tagged and released into the Delaware River.



Catch-per-unit-effort for American shad for three years at three locations in the Upper Delaware Scenic & Recreational River

- Volunteer Rich Egan, a retired Ph.D. chemist, has generously donated his time and expertise toward a variety of efforts, including preparing and deploying continuous water quality monitors (sondes); preparing datasheets, sampling containers, and equipment for sampling runs in support of the Scenic Rivers Monitoring Program, as well as testing samples and doing lab work; entering reports and documents in NatureBib, the bibliographic database for natural resource documents; participating in the Water Snapshot program with school presentations and river access sampling; and entering Angler Log data

## Upper Delaware Council

Our management partner, the Upper Delaware Council, is responsible for leading implementation of the Upper Delaware River Management Plan. In this role, the Council:

- Filed a Land Use Appeal in the Pike County Court of Common Pleas against Lackawaxen Township's approval of a Conditional Use Application for a 40-acre expansion of an existing 10-acre quarry located entirely within the river corridor. The Council, which was denied party status to offer formal testimony by the township supervisors, claims that the approval violates Lackawaxen Township's own zoning ordinance and is out of substantial conformance with the Land and Water Use Guidelines of the Upper Delaware River Management Plan.
- Hosted a work session with DRBC staff to review draft DRBC Natural Gas Development Regulations; attended public hearings; and recommended that DRBC prohibit all surface activities of natural gas development within the Upper Delaware Scenic and Recreational River corridor, as heavy industrial uses are incompatible in the corridor.
- Funded six grants to member municipalities, including: development of a Multi-Municipal Road Use Preservation Local Law; a pamphlet researching laws and court decisions in Pennsylvania relevant to the natural gas industry; a town website; a feasibility study of a new police and court facility; a town map and brochure update; and a searchable index to a town's zoning law.
- Offered recommendations for a new water management plan to govern Delaware River basin releases and flows and support for a new protocol which would: 1) make more water available to increase minimum conservation release levels and provide flood mitigation; 2) base availability on New York City estimated actual consumption, rather than on a worst case maximum legal NYC diversion; 3) correct the directed-release induced "yo-yo" releases; 4) not count PPL water releases from Lake Wallenpaupack toward the Montague flow target under certain circumstances to help maintain adequate flow and temperature conditions in the Delaware River above the confluence with the Lackawaxen River; and 6) require NYC to fix the leaks in their aqueduct system.

## Additions to the UPDE Family

- Chief Ranger Joe Hinkes
- Maintenance Worker Chad Horn
- Maintenance Worker James Hoadley
- Biology Technician Jessica Newburn
- Park Ranger Ron Babus
- We also welcomed Eliza Kate Myers on December 15, 2010. Eliza is the baby daughter of Biologist Jamie Myers

