

# Upper Delaware Scenic and Recreational River

2010 State of the Park Report



*Photo by David B. Soete*

***“It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values shall be preserved in a free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.” (Public Law 90-542)***

Congress forged an uncharacteristic “new” mission for the National Park Service (NPS) when designating the upper 73.4-mile section of the main-stem Delaware River as a unit of the Wild and Scenic Rivers System. We are charged with protecting our “Outstandingly Remarkable” values-- overall tranquil scenic beauty of the valley; camping, hunting, fishing, swimming, sightseeing and river related recreational opportunities; outstanding habitat for both a cold and warm water fishery; large and small wildlife species; history and archeological sites. The twist is that we must do so with and through many partners, on land that we do not own.

For over 30 years, compliance with the *Secretary of the Interior’s Guidelines for Land and Water Use Management* through the *Upper Delaware River Management Plan* which guides municipalities was sufficient to protect the significant resources that comprise our “outstandingly remarkable” values through local planning and land use regulation. Since 2003, however, the pressure of energy resource development at an industrial magnitude never anticipated challenges our staff, governmental management partners, and the community: How it will be possible to preserve and protect our outstanding resource values in view of our metropolitan New York City and Philadelphia neighbors’ increasing need for both high quality water and energy consumption.

## Natural Gas Drilling

Recognizing the pressure placed on the resources of the Delaware River basin by placement of an estimated 10,000 natural gas wells (currently five test wells have been drilled near the Upper Delaware Scenic and Recreational River [UPDR] boundary) and well infrastructure in the Delaware River basin, an interdisciplinary team convened for monthly teleconferences to address the impacts anticipated within NPS areas. The team includes NPS staff from UPDR and other parks, NPS Geologic Resources Division, NPS Water Resources Division, Northeast Regional Office, the DOI Northeast Region Solicitor's Office, and Upper Delaware Council. A more geographically-broad federal interagency team includes NPS representation to concentrate on overall resource management issues.

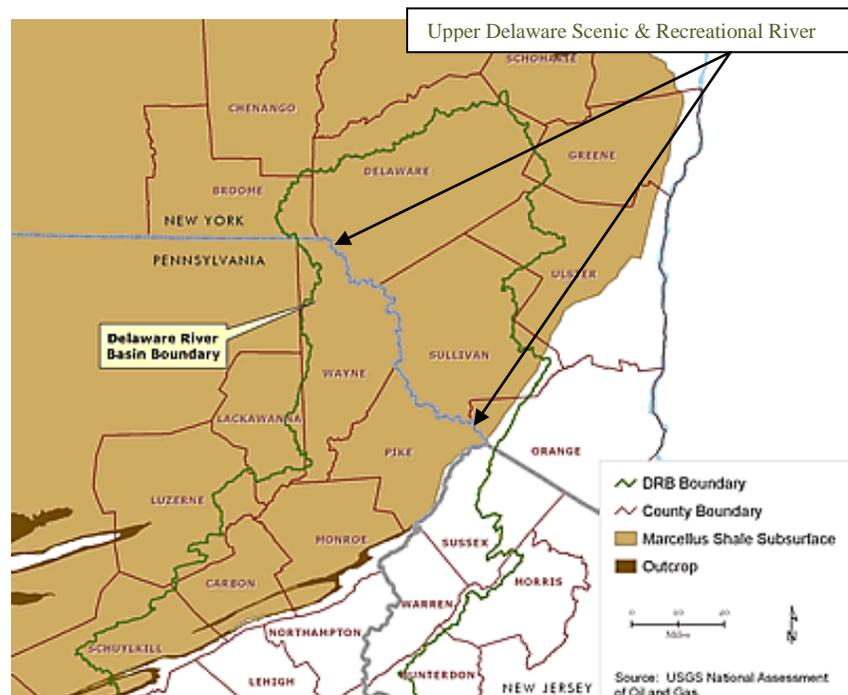
A key management partner, the Delaware River Basin Commission (DRBC) is a federal-interstate compact government agency formed by 1961 concurrent legislation enacted by the United States, Pennsylvania, New York, New Jersey, and Delaware (which includes the Middle and Lower Delaware units of the Wild and Scenic Rivers System). DRBC has legal authority over both water quality and water quantity-related issues throughout the basin, including water quality protection, water supply allocation, regulatory review (permitting), water conservation initiatives, watershed planning, drought management, flood loss reduction, and recreation.

DRBC regulates Special Protection Waters (SPW) for point source (or "end-of-pipe") discharges and for non-point source pollutant loadings carried by runoff to protect existing high water quality in areas of the Delaware River Basin deemed "to have exceptionally high scenic, recreational, ecological and/or water supply values."

In connection with natural gas drilling, the Commission has identified three major areas of concern:

1. Gas drilling projects in the Marcellus Shale or other formations may have a substantial effect on the water resources of the basin by reducing the flow in streams and/or aquifers used to supply the significant amounts of fresh water needed in the natural gas mining process.
2. On-site drilling operations may potentially add, discharge or cause the release of pollutants into the ground water or surface water.
3. The recovered "frac water" must be treated and disposed of properly.<sup>1</sup>

With NPS support, DRBC's Executive Director expanded on a 2009 determination, concluding that "all natural gas well sponsors, including the sponsors of natural



Extent of Marcellus Shale Formation in the Delaware River Basin

<sup>1</sup> From Delaware River Basin Commission website [www.drbc.net](http://www.drbc.net), used with permission

gas well projects intended solely for exploratory purposes, must first apply for and obtain commission approval before commencing any natural gas well project for the production from or exploration of shale formations within the drainage area of [Special Protection Waters](#) in the Delaware River Basin."

DRBC is developing natural gas regulations to ensure protection of basin waters while minimizing regulatory duplication. The draft regulations will likely be published in December 2010, and will be accompanied by a public rulemaking process. This process will entail two public hearings and a written comment period.<sup>2</sup>

See *Natural Resources Section* for more information on this issue.

### **Changing of the Guard**

"There is nothing permanent except change".<sup>3</sup> During Fiscal Year 2010, Superintendent Vidal Martinez accepted a Superintendent position at Prince William Forest Park after nearly 2 years at UPDE; Assistant Superintendent Sandra Schultz retired after 36 years with the NPS (Sandy worked on the Legislative Support Data Package for UPDE, as a Regional Planner assigned to UPDE, as UPDE's Chief of Planning, Management Assistant and then Assistant Superintendent during her career, as well as several long-term Acting Superintendent assignments), and Acting Chief of Protection Joe Nicholson retired after over 30 years with NPS, two of them at UPDE.

Sean McGuinness assumed the Superintendency on February 3, 2010, one month before the Assistant Superintendent departed; and, Natural Gas Drilling began to pervade nearly every aspect of the partner building process. UPDE's partners have come to recognize him as an outspoken and reliable consensus builder.

### **Administration**

*Assistance to Other Sites is in the fabric of UPDE's Administrative Staff, who:* Provided mentoring to new Administrative Officers at WOR1 and FOST and closeout assistance to MAVA; managed GovTrip and Timekeeping for FOST and MAVA; provides assistance and management for the NPS Property Management system for the Upstate NY sub-cluster and UPDE. Our AO provides PCS support to several parks in upstate NY, PA and NJ, as well as UPDE. And she and the team of IPPM instructors re-wrote the IPPM course. She also taught two IPPM classes at the beginning of FY-2010.

Five permanent employees were hired at UPDE in FY-2010: Four 4 subject to furlough WG-05 positions in Maintenance and 1 part-time GS-05 Office Automation Assistant in the Superintendent's Office. 14 seasonal positions were shared among three divisions.

Purchasing overall took a lot longer to accomplish because of learning new requirements of the MABO. The park provided training in IDEAS and Agreements.

Construction on HQ buildings disrupted network and internet use for a few weeks and electrical storms caused feedback into systems at two other locations also disrupting network and internet use. The necessary services and equipment were purchased to repair damaged equipment. Radio system coverage was reviewed to provide information to assist in determining requirements for improvement.



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<sup>2</sup> DRBC Webpage <http://www.state.nj.us/drbc/naturalgas.htm>

<sup>3</sup> Greek philosopher Heraclitus

## Maintenance

Removed 500 linear feet of chain link fence and installed a secure, automatic sliding gate at headquarters complex.

Completed an ARRA-funded weatherization project for three Headquarters buildings to replace deteriorated log siding and roofing. New thermal windows, insulation and a vapor barrier were installed on the main headquarters building.



Removed and installed new concrete sidewalks and steps and hand railings at the Headquarters complex.

Prepared the Zane Grey Museum for installation of new exhibitory by removing old exhibits, painting, and installing electrical wiring and devices.

Supervised replacement of the Zane Grey Museum roof with 35 Squares of Cedar shake shingles on the roof and dormers, replaced flashing, and re-pointed, cleaned and repaired the chimneys.

Painted the exterior of the Margold house adjacent to Roebling Bridge.

Completed UPDE Integrated Solid Waste Alternatives Plan.

The maintenance staff, Safety Officer and Safety committee chair attended the EPA training for Lead Safety for Renovation, Repair and Painting. All are certified for this new regulation.

## UPDE Protection Division

In the wake of Chief Ranger Joe Nicholson's retirement one year after that of the former Chief Ranger, several protection employees have served as Acting Supervisory Park Ranger and Chief of Protection. Hot dry weather kept visitation high and our patrol function was altered to areas with the highest visitation. This flexibility, combined with an expanded boating and river safety program, resulted in **no** visitor fatalities in 2010.



The new joint NCSP/NPS Training curriculum allows both NCSP and NPS to advance through swift water rescue and motorboat operator certification

In partnership with the National Canoe Safety Patrol (NCSP), we developed a 4-tier curriculum which allows NCSP and UPDE employees to document training and advance through swift water rescue and MOCC (motorboat operator certification course). We co-instruct sessions during the NCSP training weekend and weekly skill drills (tailgate safety sessions).

Our staff assisted Delaware Water Gap (DEWA) with a wildfire at Sunfish pond by providing Firefighters, squad boss, and a FALB (class B faller). We also assisted DEWA in a multi-day search for a missing person in the spring of 2010, and with prescribed fire burns in fall of 2009.

We have merged our dispatch operation with DEWA, resulting in 24-hour coverage as required by DO/RM-9. As part of this merger, we worked with GIS staff to develop “duff” maps for use by dispatch personnel.

Protection staff also:

- Represents UPDE on the Delaware River Water Trail's signage and rivers and trails subcommittee.
- Participated in DRBC flexible flows, floods and other committees.
- Assisted Women's Rights NHP for a 3 week protection detail.

During the 2010 visitor season, 6 UPDE rangers closed 345 cases. We issued 115 citations, 105 verbal warnings, 95 case cards, 30 written warnings, and 343 case incident reports. A high percentage of these statistics were for violations pertaining to visitor safety, boating and PFD violations.

### Interpretation

UPDE staff made nearly 81,000 visitor contacts in 2010. The greatest number of visitor contacts occurred at riverside kiosks and on roving patrols as the interpretive staff concentrated on providing safety information to river users. Water Safety was a major thrust in our curriculum-based education program with over 1,800 students participating. The *Delaware and Hudson Canal Days* off- and on-site programs, a partnership among divisions, involved eight schools and 718 4<sup>th</sup> grade students. Interpretive and Natural Resources staff collaborated to expand the *Water Snapshot* Program with 382 students participating in both classroom and the on-site water testing. Overall education programming increased by 20% this year as UPDE exceeded our GPRA goals for Visitor Satisfaction, Visitor Satisfaction with Facilitated Programs, Visitor Understanding, Visitors Attending Facilitated Programs, Visitor Safety, and Visitor Fatalities.

Centennial Initiative funding provided two Seasonal Interpretive Rangers, allowing UPDE to provide additional interpretive river safety patrols, increase our assistance to the cultural and natural resource management divisions, and to open the Zane Grey Museum daily from Memorial Day Weekend through the end of September.



We continue to support local partners by participating in numerous festivals, sponsoring river clean-up events with area high schools, conducting in-service training for teachers, and providing river safety training to public safety agencies and livery staff. In celebration of Public Lands Day, UPDE partnered with Kittatinny Canoes and Woodloch Resort to host a river clean-up event.

The Zane Grey House was open Memorial Day through mid-October. The annual Zane Grey Festival was presented in partnership with Zane Grey's West Society.

Eastern National sales at the Zane Grey House and the Narrowsburg Information Center totaled \$12,483.50, a 19% increase.

**Volunteers** – 409 Volunteers, including six interns, the National Canoe Safety Patrol, the Zane Grey's West Society, the Eagle Institute, and the annual summer River-Clean-Up in partnership with Kittatinny Canoes, contributed 11,977 hours.

**Natural Resources**

**Tracking Marcellus Shale Natural Gas Development Issues near UPDE**

On June 2, 2010, the [Upper Delaware Scenic and Recreational River gained the dubious distinction of being named "America's Most Endangered River" by the conservation organization American Rivers](#), due to impending natural gas development in the region. We are 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 spend a great deal of time focused 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. We continue to get a great deal of help with this issue from the NPS Geologic Resources Division, and the Air and Water Resources Division staff.

New York State Department of Environmental Conservation released an 809-page [Draft Supplemental Generic Environmental Impact Statement](#) on the Oil, Gas, and Solution Mining Regulatory Program. UPDE, the NPS Northeast Region, the Geologic Resources Division, the Water Resources Division, the North Country Trail, and the DOI Solicitor's Office collaborated to review and comment on this document.

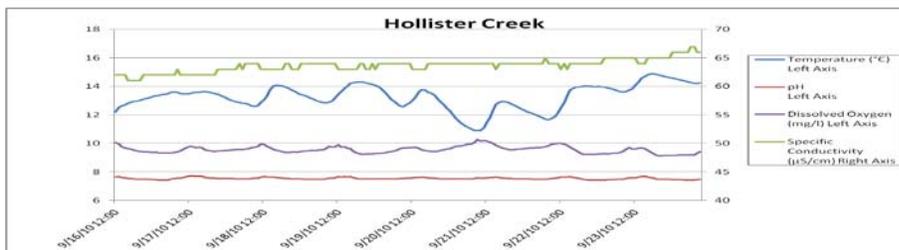
In mid-December, we reviewed and provided comments on DRBC draft dockets for a water withdrawal on the West Branch of the Lackawaxen River, and further development of the Matoushek well in Clinton Township, Wayne County, PA.

A submerged sonde, temporarily out of its protective, camouflaging PVC sleeve.



**Continuous Water Quality Monitoring**

UPDE instituted continuous water quality monitoring of Delaware River tributaries. Multi-probe instruments, or "sondes", are placed directly in the water flow to measure water quality parameters such as dissolved oxygen, pH, conductivity, temperature, and turbidity. The results are downloaded for analysis. Funds were provided by the NPS Northeast Regional Office for 7 additional instruments, four of which will be equipped with telemetry to allow off-site real-time monitoring, thus enabling rapid detection of significant water quality changes.

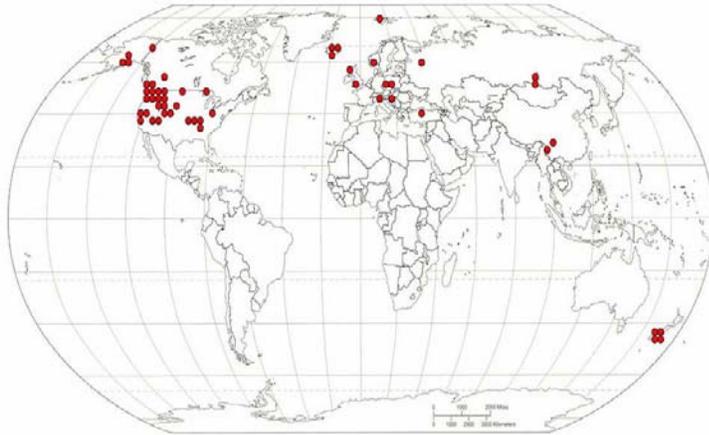


Hourly data collected for a one week period in Hollister Creek clearly shows the diurnal cycle of the water temperature and the corresponding changes in dissolved oxygen levels (mg/L). A lesser diurnal variation was also exhibited by pH. Conductivity remained relatively constant.

### Scenic Rivers Monitoring Program

With the addition of a new site on the West Branch, 20 locations on tributaries and the main stem Delaware River were sampled bi-weekly from May through September. Fecal coliform, E.coli and enterococcus bacteria, and a host of chemical parameters including nutrient levels, total chloride, total alkalinity, and total hardness data is maintained in the national EPA STORET database by the Delaware River Basin Commission, as well as at UPDE.

The Lackawaxen Township, Pennsylvania, Sewage Enforcement Officer requested our assistance to collect and test water samples at an effluent “outfall” believed to be contributing point source pollution into the Delaware River.



Confirmed presence and portion of published records of *D.geminata* from around the world. Dots show rough geographic area of populations (From Spaulding and Elwell 2007; Map by Sarah Spaulding, USGS).

### Addressing identified research needs for the nuisance freshwater diatom

#### *Didymosphenia geminata*

*D. geminata* (a.k.a. Didymo or “rock snot”) is expanding, emerging as an organism with extraordinary capacity to impact stream ecosystems on a global scale.

UPDE Resource Management Specialist Don Hamilton sought out and collaborated with a USGS scientist to develop a joint research request to better understand this organism in the Delaware and other river systems. The proposal, “*Determining the ecological and evolutionary processes associated with distribution and behavior of the nuisance freshwater diatom Didymosphenia geminata*”, was funded for FY2011-13.

Samples of *D. geminata* collected in 2010 from locations on the Delaware River mainstem were sent to the Academy of Natural Sciences in Philadelphia (ANSP) for confirmation. Dr. Marina Potapova, a world-renowned phycologist at ANSP and a Co-Principal Investigator in our study, is attempting to culture *D. geminata* in her lab using these samples (something that no researcher has been able to do so far). This would be an important step in further studying the species and better understanding factors linked to the vegetative stalk growth.

### Biological Monitoring of Benthic Macroinvertebrates

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. UPDE is partnering with two entities to monitor benthic macroinvertebrates (BMI) as a means of assessing the health of stream ecosystems:

Biologists from the Delaware River Basin Commission have had a structured study and sampling program for BMI at UPDE and DEWA for the past 7 years. [A local newspaper article covered this program recently](#), helping the public to develop an understanding and appreciation of this component of the Delaware River’s ecosystem.

We are also partnering with the NPS Eastern Rivers and Mountains Network (ERMN) in a long-term BMI sampling effort on 12 UPDE tributaries as part of the Vital Signs program. The second season of monitoring UPDE tributaries was completed in fall 2009, and we recently received the [2008 Summary Report](#).

We continue to advise and share data with the Equinunk Watershed Alliance in stewardship of Equinunk Creek, which has the highest water quality of the UPDE tributaries sampled by ERMN staff.

### Bald Eagle Essential Habitat Study

In cooperation with the *New York State Department of Environmental Conservation* and *The Eagle Institute*, a local organization dedicated to bald eagle conservation and education, a multi-year study to determine the most important habitats for bald eagles along the Upper Delaware River is in the data analysis and report writing phase. Sixteen birds fitted with satellite and radio transmitters provide information about their habitat use. The Data Manager/GIS Specialist from the Eastern Rivers and Mountains Network is assisting to model some of the habitat use data.

From a total of 18 active nests (that we know of) within the UPDE corridor, the successful nests produced about 30 fledglings in 2010.

Thousands of school children follow the migrations and movements of UPDE-tagged bald and golden eagles every year, and learn about their habits and habitat needs at <http://www.learner.org/jnorth/eagle/>.



Photo © Scott Rando. Used with permission.

Study bird R27 (lower, photographed in January 2010, carries a backpack transmitter from a 2008 capture

### Targeted Mammal Inventory

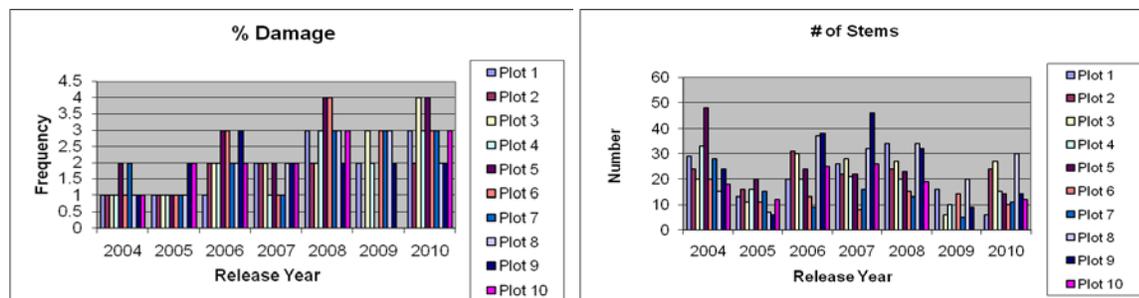
Fieldwork and review of the draft final Targeted Mammal Inventory (TMI) report was conducted under the direction of Dr. Howard Whidden of East Stroudsburg University (ESU). The three-part study of mammals supports a broader effort to catalogue the nation's natural resources throughout our national parks.

NPS Biological Resource Division provided \$2500 for ESU students to do a third year of acoustic monitoring to document declines in local bat populations as a result of white-nose syndrome (WNS), a cold-loving virus contributing to the deaths of over 100,000 hibernating bats in the northeastern United States.

### Invasive Species

The NPS Northeast Region Exotic Plant Management Team (NER EPMT) came three times this season to treat and assist with removal of non-native invasive plants, targeting Japanese knotweed, Japanese barberry and multiflora rose at NPS-owned Towpath Trail in Minisink Ford, NY, and the D&H Canal site at Corwin Farm.

Monitoring shows a definite decline in the loosestrife population at Pond Eddy. This is our seventh year of releasing *Galerucella pusilla* beetles, which feed exclusively on the leaves, stems and shoot tips of purple loosestrife, preventing seed production and distribution.



Both *Galerucella* beetles and eggs of the *Galerucella* beetles were documented in 2010 in our study area

Thanks to local Boy Scout Troop 122 and their leader, NPS volunteer Rich Egan, four years of eradication resulted in no new infestations of the invasive plant, water chestnut (*Trapa natans*) in the Upper Delaware River in 2010.

We assisted the Pennsylvania Chapter of The Nature Conservancy to remove Japanese knotweed from Butternut Island, a critical link between the Delaware River's headwaters in New York's Catskill Mountains and the unique heaths and mountains of Pennsylvania's Pocono Mountains.

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

[UPDE, the U. S. Fish and Wildlife Service \(FWS\), Pennsylvania Fish & Boat Commission \(PFBC\) and New York State Department of Environmental Conservation cooperated on a NPS-funded project to describe the age structure of the spawning stock of American shad \(AMS\) in the Upper Delaware River.](#)

From May 1 through June 19, 2010, UPDE staff contacted fishermen at twelve access points in a joint study. Using a FWS-designed creel survey valuable information was gathered from AMS anglers regarding 1) total length, 2) sex, and 3) scale samples. PFBC will study the scale samples to help provide a good sampling of the ages of AMS in the Upper Delaware basin. Data gathered in 2009 and 2010 will help to formulate the age range and obtain the percent of repeat spawning for the AMS in the Delaware River.



*NPS volunteer Rich Egan reviewing Water Snapshot results with Damascus Elementary students.*

### Environmental Education

The *Water Snapshot* program was presented to over 400 local elementary school students, the biggest year to date. UPDE staff visited fourth through eighth grade students in two states, four school districts, six schools and twenty classrooms to explain concepts and principles of water quality and environmental stewardship. This basin-wide event helps students to look at water quality of the streams and rivers in their own backyards. The ["Upper Delaware Snapshot 2010" Water Snapshot booklet](#) is posted for students' and teachers' use. Students' posters were displayed at our Information Center for the month of July.

In its third year, *Trout in the Classroom* provides resources to teachers and helps students make the connection between Trout and local water quality issues.

### UPDE Cultural Resources

Building on the existing National Register listing for Zane Grey's residence, a nomination for the Zane Grey site, (including Zane Grey's mother's house and ancillary buildings, the orchard and garden) was completed. A Historic Structures Report for the Alice Grey House and Ancillary Buildings (coal house, barn, cottage-kitchen) and a structural assessment and report of the Zane Grey house were also completed.

Installation of new exhibits at the Zane Grey Museum was completed with the assistance of Harpers Ferry Center.



Historic furnishings in Zane Grey's office completed the Zane Grey Museum exhibit.

Congressman Chris Carney was a speaker at the Zane Grey Exhibit Grand Opening, along with keynote speaker Henry Nardi from the Zane Grey's West Society. Collette Fulton from the Zane Grey's West Society presented the park with a book, The Young Lion Hunter, the first in a series of books for young people that the society is having printed.

With the addition of a Seasonal Museum Technician, we were able to improve documentation and care of museum collections. All new objects received were accessioned and cataloged. Monitoring environmental conditions allowed us to establish baseline data for the new museum exhibits. All GPRA goals for FY 2010 were met, and goal 1a6 (NPS preservation and protection standards) was exceeded.



Zane Grey Museum Exhibit Ribbon Cutting L-R: Museum Curator Dorothy Moon, former UPDE Superintendent John T. Hutzky, Carolyn Weidner, Collette Fulton, Congressman Chris Carney, Henry Nardi, and Superintendent Sean J. McGuinness.

### Upper Delaware Council

Our key management partner, The Upper Delaware Council, Inc. (UDC), continued assessing potential impacts from the proposed development of natural gas in the Marcellus Shale play. Activities included gathering and disseminating information, attending meetings and hearings, submitting comment letters, and monitoring the status of regulatory programs by both states and the Delaware River Basin Commission.

Starting in March 2010, UDC's Water Use/Resource Management Committee devoted a portion of every monthly meeting to reviewing studies, hearing presentations, and discussing modifications of the Flexible Flows Management Program (FFMP). UDC is preparing recommendations for management of releases from New York City's Delaware River Basin reservoirs in advance of the FFMP's expiration date of September 30, 2011.

One hundred guests attended the UDC's 22<sup>nd</sup> Annual Awards Ceremony on April 25, 2010, with New York State Assemblywoman Aileen M. Gunther (98<sup>th</sup> District) as keynote speaker. [Awards were presented to individuals, organizations, and projects \(including the NPS Roebling Bridge and Towpath Trail Storm Damage Repair\), that have enhanced the quality of life or protected the resources of the Upper Delaware River Valley.](#)

### Conclusion

In FY2010, we worked with 137 formal and informal partners to further the mission of the NPS in the Upper Delaware Scenic and Recreational River Corridor, on issues as diverse as The joint Upper Delaware Council & Common Waters Natural Gas Drilling Stakeholders' forums, Delaware and Hudson Canal Transportation Heritage Council, Penn State Science programs, Upper Delaware Visioning, Delaware River Flows, safety of river visitors with the National Canoe Safety Patrol and Upper Delaware liveries, camps and guides, and meetings with each of the 15 township Supervisors, as well as Delaware River Champion, Congressman Maurice Hinchey; to name a few.

FY 2010 has been a year of considerable change, with significant commitment by both our staff and partners to protect The Upper Delaware Scenic and Recreational River. The balance lies in constant vigilance while considering the increased need for sustainability and reason.