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National Capital Region

U. S. Department of the Interior
National Park Service



Spotlight On National Park Resources



in the National Capital Region

Sponsored by
Urban Ecology Research Learning Alliance and
George Mason University

George Mason University
Fairfax Campus, Fairfax, Virginia

March 29-30, 2006

Welcome!

NOTES

We are pleased to have the opportunity to spotlight the unique natural and cultural resources of the National Park Service’s National Capital Region. New and interesting facts and facets of park resources are continually being discovered by National Park Service staff and diverse partners; these facts can often provide additional insight and information on which to base management actions and decisions. We continue to be awed by the diversity and tenacity, and at times, fragility of park resources. We welcome this opportunity to share with you the complex responsibility of our mission: preserving these resources for future generations.

Joseph M. Lawler, Regional Director

National Capital Region Parks	Acronym
Antietam National Battlefield	ANTI
Catoctin Mountain Park	CATO
C&O Canal National Historical Park	CHOH
George Washington Memorial Parkway	GWMP
Harpers Ferry National Historical Park	HAFE
Manassas National Battlefield Park	MANA
Monocacy National Battlefield	MONO
National Capital Regional Office	NCRO
National Mall & Memorial Parks	NAMA
National Capital Parks – East	NACE
Potomac Heritage Trail	PHST
President’s Park	PRPA
Prince William Forest Park	PRWI
Rock Creek Park	ROCR
Wolf Trap National Park for the Performing Arts	WOTR

Salvaging Natural and Cultural Resources from Disasters
Pam West and Bob Sonderman

Members of the Museum Emergency Response Team (MERT) have responded to 3 hurricanes in the last 3 years. These hurricanes affected both cultural and natural resources, including park and CESU held specimens. A synopsis of what the team is doing will spread the word about how even the most damaged resources can be salvaged and preserved.

The Northwest Passage: Creating Fish Passage in Rock Creek
Perry Wheelock, Bill Yeaman, and Tim Morris

As part of the environmental mitigation for the construction of the new Woodrow Wilson Bridge crossing over the Potomac River, six structures have been constructed of stone and other materials in Rock Creek that are engineered to help anadromous fish complete their annual migration upstream. These structures, which are scheduled to be finished in time for the spring 2006 fish run, have been designed and constructed around several historic and non-historic features of Rock Creek Park. These include Milkhouse Ford, Peirce Mill dam, and three active sewer lines. Our joint paper will discuss key aspects of the natural and cultural resource considerations for this large multi-agency project, with a particular focus on the efforts to balance both program areas in the design and decision-making process. Tim Morris, an environmental mitigation manager for the Potomac Crossing Consultants, will also participate in the presentation. discuss key aspects of the natural and cultural resource considerations for this large multi-agency project, with a particular focus on the efforts to balance both program areas in the design and decision-making process. Tim Morris, an environmental mitigation manager for the Potomac Crossing Consultants, will also participate in the presentation.

ACKNOWLEDGEMENTS

The National Capital Region would like to recognize the following individuals and organizations for their contributions to the 2006 *Spotlight on National Park Resources Conference*:

Joe Lawler for his continuing support of the Natural and Cultural Resource Programs in the National Capital Region

Jim Sherald and Darwina Neal for their leadership of the Natural and Cultural Resources Programs

Steering Committee and Conference Moderators: Giselle Mora-Bourgeois, Chair (NCRO), Joy Beasley (MONO), Michelle Carter (ANTI), Catherine Dewey (NCRO), Frank Faragasso (NACE), Diane Pavek (NCRO), Vincent Santucci (GWMP)

Refreshments Sub-Committee: Michelle Carter (ANTI), Catherine Dewey (NCRO)

Logistics Sub-Committee: Diane Pavek (NCRO), Frank Faragasso (NACE)

Programs & Posters Sub-Committee: Joy Beasley (MONO), Michelle Carter (ANTI)

Panel Discussion Participants: John Howard (ANTI), Maureen Joseph (NCRO), Brian Carlstrom (WASO), Marie Frias-Sauter (CHOH)

The George Mason University, Department of Environmental Science and Policy: Chris Jones, Jim Lawrey, Carol Lawrence

Refreshments courtesy Eastern National

March 29, 2006

Morning Session A

Moderator: Giselle Mora-Bourgeois, National Capital Region

- 9:00 Welcome and Introduction—**Jim Sherald**, Chief, Natural Resources and Science, National Capital Region, National Park Service
- 9:05 GMU Introduction—**Chris Jones**, Chair, Environmental Science and Policy Department, George Mason University
- 9:15 Opening Remarks—**Joe Lawler**, Director, National Capital Region, National Park Service
- 9:50 *Conservation in the Parks*
Catherine Dewey, Architectural Conservator, National Capital Region, National Park Service
- 10:05 *An Overview of the Invertebrate Fauna of Plummers Island, Maryland*
John Brown, Research Entomologist, Systematic Entomology Laboratory, US Department of Agriculture
- 10:20 *Enhancing Archeological Interpretation in Unlikely Places*
Lena Mortensen, Assistant Director, Center for Heritage Resource Studies, University of Maryland
Barbara Little, Archeologist, National Park Service
- 10:35 **BREAK**

Working with Elderhostel Groups

POSTER

Keven Walker and Jane Custer

In 2004, the cultural resource division at Antietam National Battlefield teamed up with a local camp (Shepherd Springs) to host Elderhostel work projects. To date over 2,000 hours of work has been completed through these work projects. We generally have one spring and one fall week long work project. Work projects have included vegetation removal to clear 1200 feet of historic lane, 700 feet of worm fence construction, interior painting, tree planting and paling fence construction. Park staff members work along side the elderhostel participants and share the history and importance of the resources with them. Having the elderhostel work projects at Antietam has been beneficial for the park and the participants as well. With the added workers the park has been able to undertake projects we could not have done as effectively and the elderhostel participants gain a better understanding of the park's resources and most leave feeling a stronger appreciation for the park and the National Park Service.

The poster will document projects and discuss tips for coordinating Elderhostel work projects.

Restoration of Harperella, Endangered Plant Species, in C&O Canal NHP

POSTER

Elizabeth Fortson Wells

Harperella (*Ptilimnium nodosum*), the only endangered plant species in the National Capital Region, National Park Service, has been located three times on the Potomac River on C&O Canal NHP land in the past 90 years, then extirpated by severe flooding.

Research since 2001 has demonstrated that harperella requires stream cobblebars in full sun, protection from severe erosion, limited range of water depth, freedom from invasive non-native plants, and sandy soil. Recently seeds have been shown to germinate as they are produced in late summer, in warm temperatures. Flooding in late summer washes seeds away, but plants, if submerged, produce plantlets at the nodes, which take root and overwinter, as the older, biennial plants die in the fall.

In 2003 and 2004 seeds and seedlings were transplanted into plots along the Potomac River on park land, but were lost in subsequent floods. In 2005 seedlings were transplanted into selected sites in the canal prism and have survived.

declassified, people have had no means to find out about their own family history. Presenters found that their information was not an abstract item of study, but a touchstone for many. Visitors came hours to attend, often for all five events. Many took extensive notes. This presentation will explore the connections made and how historical resources can bring a park's history close to home.

The Cost Effective Use of Architectural Documentation for the Treatment of Historic Structures

POSTER

Tom Vitanza

Former NPS Supervising Architect for Historic Structures Charles E. Peterson once said, "... there is no (better) way to appreciate an existing, working structure – its virtues and its failures – like making a careful drawing of it." This presentation will demonstrate that one way to learn about a historic structure and conduct architectural fabric investigation is through the production of HABS quality architectural measured drawings. Traditional hand-measuring and hand-drawing is a cost effective way to obtain useful, quality and in-depth documentation of a structure and to identify its character defining features. The resultant drawings can then be used for a variety of park uses including identification of treatment recommendations and becoming the base drawings for a treatment project.

The Roulette Springhouse Historic Structure Report

Keven Walker

Antietam National Battlefield's Cultural Resources Division has taken a relatively new approach to completing a Historic Structure Report for the Roulette Springhouse. Rather than contracting for the HSR's completion, Antietam has worked within the Park Service to produce almost the entire document "in house." By working with HABS, HPTC, Monocacy National Battlefield, and the Harpers Ferry Center, the staff at Antietam has been able to complete the document at a fraction of the expense usually incurred by contracting for the same services, and has also produced an HSR that meets NPS standards and will be a document useable by the park for which it was produced.

Partnerships within the Service were the key to Antietam's efforts to document this historic structure. How this document was produced; the advantages and disadvantages of completing documents like this one "in house"; and the possible use of this approach on other projects are the focus of this presentation.

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Morning Session B

Moderator: Joy Beasley, Monocacy National Battlefield

- 10:50 *Disturbed Lands Reclamation of the Former Bradford Tract*
Paul Petersen, GIS Specialist, Prince William Forest Park
James Pieper, Jr., Biological Science Technician, Prince William Forest Park
- 11:05 *The Cost Effective Use of Architectural Documentation for the Treatment of Historic Structures*
Tom Vitanza, Senior Historical Architect, Historic Preservation Training Center
- 11:20 *Bias in Deer Density Estimation: Fact or Fiction?*
William J. McShea, Research Scientist, National Zoological Park's Conservation and Research Center
Chad M. Stewart, Wildlife Biologist, National Zoological Park's Conservation and Research Center
Shawn L. Carter, Inventory & Monitoring Coordinator, Center for Urban Ecology, National Park Service
Scott Bates, Wildlife Biologist, Center for Urban Ecology, National Park Service
- 11:35 *Greenbelt Park: Layers of History in a Recreational Landscape*
Tim Kerr, Senior Architectural Historian,
Robinson & Associates, Inc.
Judith Robinson, Principal, Robinson & Associates, Inc.
- 11:50 *The Roulette Springhouse Historic Structure Report*
Keven Walker, Cultural Resource Specialist, Antietam National Battlefield

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Afternoon Session A

Moderator: Michelle Carter, Antietam National Battlefield

- 1:05 Presentation of Natural Resource Challenge Award
Mike Soukup, Associate Director, Natural Resource Stewardship and Science, National Park Service
- 1:35 *Archeological Investigations at the U.S. Armory Grounds*
Andrew S. Lee, Archeologist, Harpers Ferry National Historical Park
- 1:50 *A "Whale" of a Resource: Fossils From NACE Parks*
Jason P. Kenworthy, Paleontology Technician, NPS Geologic Resources Division, George Washington Memorial Parkway
Vincent L. Santucci, Chief Ranger, George Washington Memorial Parkway
Mike Antonioni, Park Curator, National Capital Parks-East
- 2:05 *When Spies Talk*
Kirsten Talken-Spaulding, Chief of Interpretation, Prince William Forest Park
Laura Cohen, Park Ranger, Prince William Forest Park
- 2:20 *Deer and Disturbance: Will Our Forest Regrow?*
Becky Loncosky, Park Ranger/Resource Management, Catoctin Mountain Park
- 2:35 **BREAK**

March 29, 2006

Afternoon Session B

Moderator: Catherine Dewey, National Capital Region

- 2:50 *Stratified Prehistoric Sites along the C&O Canal*
Stuart Fiedel, Louis Berger Group
- 3:05 *Aquatic Bioassessments in National Capital Region Streams*
Robert H. Hilderbrand, Assistant Professor, University of Maryland Center for Environmental Science, Appalachian Laboratory
Richard L. Raesly, Professor, Frostburg State University
Paul F. Kazyak, Ecological Assessments Program Chief, Maryland Department of Natural Resources
- 3:20 *A "Tail" of Temperance: Restoration of a Historic Structure*
Jennifer Talken-Spaulding, Cultural Resource Specialist, National Mall & Memorial Parks; presented by **Tony Donald**

Assessment (SBA). Based upon the United States Department of Agriculture – Natural Resources Conservation Service's Stream Visual Assessment Protocol (Technical Note 99-1), the SBA program incorporated two additional features into its methodology, geo-referenced photo-points and channel profiles. This survey has resulted in numerous baseline datasets. A library of visual media, channel-centered Global Positioning System data, a series of incremental profile measurements, and indices of physical health scores now exist for all of PRWI's first order streams. From this information, it has been determined that the majority of PRWI's stream channels are in fair to good condition, with a few examples each of excellent and poor condition sites. With the incorporation of the SBA program into PRWI's Water Quality Monitoring program, park management now has a well-rounded view of its Water Resources.

A Tail of Temperance: Restoration of a Historic Structure
Jennifer Talken-Spaulding

The Temperance Fountain, located in the National Mall & Memorial Parks, was donated to the city of Washington and accepted by Congress in 1882. This unique structure consists of a bronze crane sitting atop a small open temple with four granite columns with the fountain inside. The fountain is a zinc sculpture of two dolphins, or fish, with their tails intertwined.

In April 2005, the dolphin sculpture was subjected to an unauthorized gilding (gold-leaf application) by an associated private group. The park, with the assistance of the regional conservator, assessed the effects of the gilding on this historic sculpture and determined that removal of the inappropriate, and potentially harmful, treatment was in order. What followed was an interdisciplinary project that led to new discoveries and the successful restoration of this historic structure. This presentation will discuss the restoration project and the invaluable support provided by conservation professionals in the region.

When Spies Talk
Kirsten Talken-Spaulding and Laura Cohen

In honor of the 60th anniversary of the disbanding of the U.S. Army Office of Strategic Services (OSS), the progenitor of the Central Intelligence Agency, Prince William Forest Park hosted a month-long speaker series in October 2005. Through the use of historic photographs, maps, and other artifacts, resource management and interpretive staff connected visitors with a little known part of park history. In unexpected ways, this series impacted presenters and participants. Many participants used the information presented to make connections to their family's past. With OSS documents only recently

placed on a grid throughout the plot. Plot results were compared to those from an old-field grassland.

Land Use/Land Change Analysis in PRWI

POSTER

Paul Peterson

Prince William Forest Park was established in 1933 as the Chopawamsic Recreation Demonstration Area. Prior to this designation, the 15,000 acres of land was used for subsistence farming, timber harvesting, and mining. Seventy plus years of federal protection has encouraged vegetation re-growth, and the park is now primarily forest.

Park Resource managers have attained historic black and white aerial photographs, taken in 1937 and 1954 of the park and surrounding area. These images have been used to develop a coarse analysis of land-use/land-change for the park over a seventy-year period. Classification and textural analysis in ERDAS were used to enhance information in the imagery, and aid in the interpretation of basic land-use characteristics, such as coniferous forest, deciduous forest, fields, and cropland.

The information in this project helps managers better understand the transition of protected lands over time.

Disturbed Lands Reclamation of the Former Bradford Tract

Paul Petersen and James Pieper, Jr.

This project involved the reclamation of a 14.2 acre disturbed site located within Prince William Forest Park, known as the Bradford Tract. Prior to reclamation, much of the site was open and level, sloping gently to the south, and situated on fill, or soils that had been graded to some extent. In many areas, the topography of the site had been altered, affecting natural drainage patterns and creating problems with erosion. Several structures were removed; however, there were patches of concrete still remaining. Initial site reclamation was completed during the summer of 2005 and included removing concrete, asphalt, tires, trash, and all remaining structures, re-grading the terrain, restoring historic drainages, and planting native grasses. Native trees and shrubs were planted in the fall of 2005.

Stream Bank Assessment: A Baseline Survey of Physical Channel Health

POSTER

James Pieper, Jr.

This poster presents the cumulative findings of two field seasons of data collection from Prince William Forest Park's (PRWI) Stream Bank

March 30, 2006

Morning Session A

Moderator: Diane Pavcek, National Capital Region

- 9:00 Opening Remarks—**Darwina Neal**, Chief, Cultural Resource Preservation Services, National Capital Region, National Park Service
- 9:05 *Current Native Bee Research and Monitoring in the National Capital Region*
Sam Droege, Head of the USGS Native Bee Inventory and Monitoring Lab, US Geological Survey
- 9:20 *Archeology and History in Rock Creek Park*
John Bedell, Louis Berger Group
- 9:35 *The Arthropod Fauna of Dyke Marsh Preserve, Virginia*
Edward M. Barrows, Professor of Biology, Laboratory of Entomology and Biodiversity, Department of Biology, Georgetown University
- 9:50 *Order from Chaos: Frederick Law Olmsted, Jr., and the Creation of the National Mall*
Kay Fanning, Landscape Historian, National Capital Region, National Park Service
- 10:05 *Developing an Integrated Earthworks Management Plan: Balancing Legislative Mandates, Resource Protection, and Recommended Preservation Practices*
Brandon Bies, Cultural Resource Specialist, George Washington Memorial Parkway
Matt Virta, Cultural Resources Program Manager, George Washington Memorial Parkway
- 10:20 *Restoration of the Hahnemann Monument*
Judy Jacob, Senior Conservator, Architectural Preservation Division, Northeast Regional Office, National Park Service
- 10:35 **BREAK**

Morning Session B

Moderator: Frank Faragasso, National Capital Parks East

10:50 *Salvaging Natural and Cultural Resources from Disasters*
Pam West, Director, Museum Resource Center, National Park

Service

Bob Sonderman, Senior Staff Archeologist, National Capital Region,
National Park Service

11:20 *The Northwest Passage: Creating Fish Passage in Rock Creek*
Perry Wheelock, Cultural Resource Manager, Rock Creek Park
Bill Yeaman, Natural Resource Specialist, Rock Creek Park
Tim Morris, Environmental Mitigation Manager, Potomac
Crossing Consultants

March 30, 2006

Afternoon Session

1:00 **Panel Discussion:** *Balancing Cultural and Natural Resource Values
in Management Decision-Making*

Moderator:

Vincent L. Santucci, George Washington Memorial Parkway

Discussants:

Maureen Joseph, Regional Historic Landscape Architect
National Capital Region

John W. Howard, Superintendent
Antietam National Battlefield

Brian Carlstrom, Legislative Affairs Specialist, Bevinetto Fellow
NPS Office of Legislative and Congressional Affairs

Marie Frias-Sauter, Natural Resources Management Specialist
C&O Canal National Historical Park

3:00 Summary
Vincent L. Santucci

2003-2005. It includes information about techniques of capture, movement summary, density information, and health information.

Enhancing Archeological Interpretation in Unlikely Places **Lena Mortensen and Barbara Little**

Archeology is everywhere and visitors are interested in learning more about this “path to the past,” wherever they go. Many NCR parks have archeological resources that are not interpreted to the public, but the possibilities are intriguing. The Mather Training Center and the University of Maryland used NCR’s CESU to cooperate on the development of training in the effective interpretation of archeological resources. The training sequence, modeled after NPS Fundamentals, incorporates both classroom and online training. To accommodate decreasing travel budgets and increasing time pressures on park staff, the University’s Center for Heritage Resource Studies has re-designed a training module from on-the-ground to on-line. We’ll summarize the sequence of training, focusing on the benefits and successes of running existing online courses, and introduce the new self-paced, web-based study tour that can open up a world of possibilities.

Harpers Ferry Federal Armory Season One Excavations

POSTER

Mike Owens, Kathryn Berlin, Michelle Hammer, and Misti Haines

The poster overviews the first season of excavations at the Federal Armory at Harpers Ferry National Historical Park. Photos, maps, drawings and other documents provide a brief explanation of the history of the site and show some highlights of the excavation.

Small Mammal Re-colonization of Restored Lands

POSTER

Dr. Gregory Perrier and Bryan Gorsira

In 2004, the Manassas National Battlefield Park recontoured an area to restore the landscape to its civil war era condition. The desired landscape is to be a mosaic of forests and grasslands. To enhance the recovery of the grasslands, the Park seeded these areas with Indian grass, partridge pea, round head lespedeza, black-eyed Susan, tall coneflower, and marsh blazing star. The objectives for this study were to monitor the establishment of the seeded species and to document the successional changes that occur in the vegetation and small mammal communities as the grassland reestablishes. A one hectare study plot was established and plant cover by species was determined by recording the species found at each meter mark along four 100-meter transects. The occurrence of small mammals was measured using thirty-six live traps

Archeological Investigations at the U.S. Armory Grounds

Andrew Lee

The U.S. Musket Factory site at Harpers Ferry is an historic site of the first order of significance because of its direct association with the John Brown Raid of 1859. The Archeology Program of Harpers Ferry National Historical Park has initiated a three year study in order to document the physical history of the site. This presentation will focus on some of the findings made to date and outline future goals of the project.

Deer and Disturbance: Will Our Forest Regrow?

Becky Loncosky

Catoctin has been monitoring paired open and enclosure vegetation plots within two disturbed areas, one the site of a microburst storm event and the other the site of a small woodland fire, for over five years. These sites have demonstrated the effects of heavy deer browse on the ability of vegetation to rebound from these disturbance events.

Bias in Deer Density Estimation: Fact or Fiction?

Dr. William J. McShea, Chad M. Stewart, Shawn L. Carter, and Scott Bates

Annual monitoring of populations of white-tailed deer (*Odocoileus virginianus*) is necessary within National Parks to detect changes in the population density. Currently, density estimates use distance sampling techniques, which entails spotlighting from a vehicle to determine the number of deer and their distance from a transect. However, spotlighting transects follow roads, which are not random samples of the habitat, but contain features that may attract or repel deer, violating a major assumption of the technique. We tested this assumption using remote-trip cameras in Catoctin National Park and Antietam National Battlefield. Twenty cameras were placed along four distance categories (0-25m, 25-50m, 50-100m, and 150-200m) from each park's survey route. Cameras were moved every 20 days until 80 points were sampled. The number of deer photographed was compared between buffers to determine distribution relative to the survey road. The distribution was also compared to the distribution of deer sighted during the annual census.

Deer Movement Research – Antietam National Battlefield

POSTER

Dr. William McShea and Chad M. Stewart

This poster will summarize the process and findings of the pilot Deer Movement Study completed by the Smithsonian Conservation & Research Center and the National Park Service at Antietam National Battlefield from

PANEL DISCUSSION PARTICIPANTS

Moderator:

Vincent L. Santucci, Chief Ranger, George Washington Memorial Parkway

As Chief Ranger at George Washington Memorial Parkway, Vincent L. Santucci has management responsibility for the cultural resource, natural resource, environmental compliance, permitting, and interpretation / education programs. He began his career in 1985 and held assignments at Badlands, Petrified Forest, Grand Canyon, Yellowstone, Fossil Butte and with the NPS Geologic Resources Division. Vince was the recipient of the George Wright Society Natural Resource Management Award in 2001.

Panelists:

Brian Carlstrom, Legislative Affairs Specialist, NPS Office of Legislative and Congressional Affairs, Bevinetto Fellow

Brian has worked with the NPS since 1985 and has experience in the parks and recreation field at the county, regional and advocate group levels. Brian has a diverse range of experiences including, laborer, visitor use assistant, interpretive ranger, generalist ranger, natural resource specialist, resource planner, GIS analyst, and resource manager. Brian has a B.S. in Parks, Recreation and Leisure Studies from George Mason University and conducted graduate work in Environmental Sciences. He is a 2001 graduate of the USDA Graduate School's, Executive Leadership Program for Mid-Level Employees. He presently serves as the 16th Bevinetto Fellow working on National Park Service legislative issues.

John W. Howard, Superintendent, Antietam National Battlefield & National Cemetery

John W. Howard is a thirty-one year veteran of the National Park Service and has served for 10 years as Superintendent of Antietam National Battlefield & National Cemetery with management responsibility for 3,288 acres of National Park Service resources. Previous to this assignment he has worked in nine National Park Service areas in four Regions. His field assignments concentrated on Natural Resource Management and Visitor Protection. He has also served at the National Capital Regional Office as Regional Natural Resource Management Specialist.

Maureen D. Joseph, Regional Historical Landscape Architect for the National Park Service, National Capital Region.

Maureen D. Joseph earned her B.S. degree in landscape architecture from Colorado State University. Since 1990, she served as park landscape architect at Harpers Ferry National Historical Park; project historical landscape architect for the Denver Service Center; and cultural landscape inventory coordinator for the National Capital Region. She has authored or co-authored numerous Cultural Landscape studies for Lower Town and Virginius Island (Harpers Ferry National Historical Park), Pecos National Historical Park, Wolfe Ranch (Arches National Park), Jordan Pond House (Acadia National Park), West Woods (Antietam National Battlefield), Manassas National Battlefield Park, Lincoln Memorial Grounds (National Mall & Memorial Parks), and Dumbarton Oaks Park (Rock Creek Park).

Marie Frias Sauter, Natural Resources Program Manager, C&O Canal National Historical Park

A graduate of the University of Georgia with a degree in Geography, Marie Frias Sauter has worked for the National Park Service since 1987. Her diverse ranger experience includes resource management, law enforcement and GIS support. She has held assignments at the Great Smoky Mountains National Park, Shenandoah National Park, Rocky Mountain National Park and Prince William Forest Park. During the last 10 1/2 years at the C&O Canal National Historical Park she has served as the GIS Coordinator, natural resources specialist and program manager.

and Pleistocene gravels have produced fossils within many NACE parks. These fossils include petrified wood, plant material, and many marine invertebrates and vertebrates. The summary also stimulated work on a “forgotten” partial whale skull, which may represent a new taxon. NACE also maintains a growing paleontological museum collection. With many discoveries already documented, there is great potential for future paleontological research in NACE, far from the “fossil parks” of the west.

Greenbelt Park: Layers of History in a Recreational Landscape
Tim Kerr and Judith Robinson

While few physical traces of Greenbelt Park’s past are visible today, its history remains available in numerous documents that can be used for current interpretation. Robinson and Associates has just completed a historic Resource Study for Greenbelt Park. The authors will present a few of what they consider key insights about the park. They will focus on the many human uses of the land over time from Native American, colonial settlement, the variety of agricultural activities, encroaching urbanization and finally federal urban planning during the Roosevelt administration. They will conclude with a reflection on the implication of all these changes for the management of the park by the NPS.

A Habitat Suitability Model for Male Black Bears (Ursus americanus) in Prince William Forest Park, Virginia

POSTER

Laura Lakeman and Paul Petersen

Habitat suitability models provide a tool for wildlife managers to focus research efforts and investigate the use of categories of habitat quality—unsuitable, marginal, acceptable, and suitable. Biological, physical, and cultural factors interact to define bear habitat quality. Bear studies consistently identify topography, vegetation, and cultural activity as environmental variables that contribute significantly to habitat quality. These variables (aspect, slope, forest cover, proximity to streams, and proximity to cultural constructs) exist at a coarse geographic scale and are especially appropriate for GIS analyses. We created a black bear habitat model based on parameter estimates developed by Van Manen and Pelton (1996). Lacking bear data specific to Prince William Forest Park, we selected relevant habitat components from the Van Manen and Pelton variable subset for input into ModelBuilder (ArcGIS). Suitability maps were created for both male and female black bears, and will be used in PRWI’s ongoing carnivore study.

Restoration of the Hahnemann Monument

Judy Jacob

The Hahnemann Memorial, constructed in 1900 and located at the east end of Scott Circle, has suffered from deterioration over the years. In order to bring the monument to good condition, a phased preservation plan was initiated in 2004, with funds donated by the American Institute of Homeopathy. Conservators from the Northeast Regional Office's Architectural Preservation Division, the National Capital Regional Office, and the National Mall & Memorial Parks' Statue Preservation Crew worked together to carry out a successful preservation project. Work on the memorial included cleaning and waxing the bronze figure of Hahnemann and four associated plaques, cleaning the granite exedra and pointing open joints, and replacing missing glass tesserae from the mosaic half dome above the figure's head. At the time of this abstract, the mosaic and bronze work has been completed, improving the appearance of the monument greatly. When all of the work is complete, the memorial will once again be an honorable tribute to Dr. Hahnemann, and will have been carried out as a successful collaboration between three NPS offices.

An Overview of Ecological Studies at National Parks in the National Capital Region by George Mason University

POSTER

R. Christian Jones, James Lawrey, Donald Kelso, Ted Bradley, John Dodge, Larry Rockwood and Cody Edwards

Faculty and students at George Mason University have been engaged in a variety of field studies at National Parks in the National Capital Region over the past decade. Studies include plant, mammal, fish, and stream macroinvertebrate surveys of Prince William Forest Park, lichen biomonitoring in nine parks, studies of coyote and fox diets in Prince William Forest Park and Rock Creek Park. An overview of results obtained from these studies will be presented as well as suggestions for future collaborations

A "Whale" of a Resource: Fossils From NACE Parks

Jason P. Kenworthy, Vincent L. Santucci, and Mike Antonioni

Paleontological resources, fossils, are any remains of past life preserved in geologic context. A recently undertaken summary of paleontological resources in the National Capital Region revealed an astounding assemblage of fossils and fossiliferous geologic formations within and surrounding many parks. Within parks of National Capital Parks-East (NACE), the history of fossil study begins in the 1830s and continues today. Well known fossiliferous geologic formations including the Cretaceous Potomac Group, Cretaceous Severn Formation, Paleocene Aquia Formation, Miocene Calvert Formation,

POSTERS

The Archeology of the Middle Ford Ferry Tavern at Monocacy National Battlefield

Joy Beasley, Cultural Resources Program Manager, Monocacy National Battlefield

Tom Gwaltney, GIS Consultant

Developing a Spatially Explicit Participatory Model to Explore Anthropogenic Off-site Threats on Tributary Streams at the Potomac Gorge

Robin Brake, Graduate Student, Department of Environmental Science and Policy, George Mason University

Rehabilitating the Henry House

Ray Brown, Cultural Resources Program Manager, Manassas National Battlefield Park

Fusion of Natural Resource Management and Education at Manassas

Bryan Gorsira, Natural Resource Program Manager, Manassas National Battlefield Park

An Overview of Ecological Studies at National Parks in the National Capital Region by George Mason University

R. Christian Jones, Professor and Chair, Department of Environmental Science and Policy, George Mason University

James Lawrey, Donald Kelso, Ted Bradley, John Dodge, Larry Rockwood and Cody Edwards, Department of Environmental Science and Policy, George Mason University

A Habitat Suitability Model for Male Black Bears (Ursus americanus) in Prince William Forest Park, Virginia

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Harpers Ferry Federal Armory Season One Excavations

Mike Owens, Archeological Technician, Harpers Ferry National
Historic Park
Kathryn Berlin, Archeological Technician, Harpers Ferry National
Historic Park
Michelle Hammer, Archeological Technician, Harpers Ferry National
Historic Park
Misti Haines, Archeological Technician, Harpers Ferry National
Historic Park

Evaluation of Vegetative Establishment on Restored Lands

Dr. Gregory Perrier, Professor, Northern Virginia Community College,
Manassas Campus
Bryan Gorsira, Natural Resource Program Manager, Manassas National
Battlefield Park

Land Use/Land Change Analysis in PRWI

Paul Petersen, GIS Specialist, Prince William Forest Park

Stream Bank Assessment: A Baseline Survey of Physical Channel Health

James Pieper, Jr., Biological Science Technician, Prince William Forest
Park

***The Cost Effective Use of Architectural Documentation for the Treatment of
Historic Structures***

Tom Vitanza, Senior Historical Architect, Historic Preservation Training
Center

Working with Elderhostel Groups

Keven Walker, Cultural Resource Specialist, Antietam National Battlefield
Jane Custer, Chief of Cultural Resources, Antietam National Battlefield

***Restoration of Harperella, an Endangered Plant Species in
C&O Canal NHP***

Elizabeth Fortson Wells, Associate Professor of Botany, The George
Washington University

Creek confluence), underneath Late Woodland and Early Woodland (about 3000 years cal BP) components, an Early Archaic component was found at about seven feet below surface. Radiocarbon-dated to about 10,400 cal BP, this early occupation (one of the oldest yet found in the region) is characterized by chipping debris of exotic-looking materials such as jasper, chert, and chalcedony. I will explore both the culture-historical significance and resource management implications of this ongoing research.

Fusion of Natural Resource Management and Education at Manassas.

POSTER

Bryan Gorsira

Manassas National Battlefield Park recently restored approximately 30 acres of emergent and 15 acres of forested wetlands. Since this project was part of an agreement with the Smithsonian, consultants working for them will be monitoring the wetlands for the required 5 years. However, recently Manassas has begun Bridging the Watershed educational programs within the park. As part of that program, we are working on a park specific module. For this module, students will use nationally-standardized assessment techniques to continually monitor the health of the newly-re-established wetlands and document the area's steady return to its pre-development conditions. Data will be stored and displayed in Arc View GIS format for use by park interpretive and resource management personnel. Interventions such as plantings, invasive species management, and land-use changes (hiking or bridle paths) will also be tracked in order to better describe their impacts on the area.

Aquatic Bioassessments in National Capital Region Streams

Robert H. Hilderbrand, Richard L. Raesly, and Paul F. Kazyak

In an effort to increase knowledge about the streams flowing across NPS lands in the National Capital Region, we sampled 75 sites across all NCR parks (excepting Catoctin Mountain Park). Within each park we intensively sampled at least one site for fish, benthic invertebrates, stream chemistry, and physical habitat and produced assessments of stream health. We are using this information in conjunction with the Maryland Biological Stream Survey dataset to diagnose stressors likely to be influencing water resources. Sites dominated by agriculture and urban land uses tended to have poorer water quality (elevated nitrate and chloride), lower quality habitats, and generally lower scores for the fish IBI (Index of Biotic Integrity) and especially the benthic invertebrate IBI and associated metrics. Nitrate nitrogen was the most pervasive stressor measured in park streams and was elevated across a number of sites in all parks.

projects to improve the condition of their monuments or to uncover historical information such as chronoarchaeologies of paint or mortar components. Before, after, and during images will be shown of the projects and methodologies discussed.

Current Native Bee Research and Monitoring in the National Capital Region
Sam Droege

This presentation will focus on collaborative work on Native bees at Piscataway, Fort Washington, National Capital Parks East, National Mall & Memorial Parks, and George Washington Memorial Parkway units over the past four years. Research includes habitat preferences of plantings, native plant meadows, survey techniques, impacts of Lesser Celandine, discovery of new non-native bees, identification tools, and future surveys.

Order from Chaos: Frederick Law Olmsted, Jr., and the Creation of the National Mall
Kay Fanning

In the 1930s, the National Mall was a jumble of buildings and plantings. Hundreds of trees remained from the picturesque gardens of the 19th century, providing a well-loved public amenity but obscuring any sense of the Mall as a visual corridor between the Capitol and the Washington Monument.

Study of National Capital Region files from the 1930s is revealing the role played by landscape architect Frederick Law Olmsted, Jr., last surviving member of the 1901 Senate Park Commission, in recreating this visual axis. Olmsted adapted the Senate Park Commission plan to meet modern contingencies, such as the need for direct traffic routes across the Mall, while regarding and entirely replanting the area with lawns and lines of elms. Most important was his new design for Union Square, site of the Grant Memorial, at the east end to provide an appropriate transition between the Capitol Grounds and the new, formal Mall.

Stratified Prehistoric Sites along the C&O Canal
Stuart Fiedel

Geoarchaeological prospecting, conducted in 2003-4 as part of the NPS Systemwide Archeological Inventory Program, resulted in discovery of several deeply stratified, multi-component prehistoric sites on Potomac River floodplains within the C&O Canal National Historical Park. Occupation zones sealed by alluvial deposits include several Late Woodland components (about 700 calendar years before present [cal BP]) and two Terminal Archaic BROADSPEAR components (4200-3500 cal BP). At 18FR798 (near the Tuscarora

ABSTRACTS

Assessment of the Arthropod Fauna of Dyke Marsh Preserve, Virginia
Edward M. Barrows

Since 1995, the Laboratory of Entomology and Biodiversity, has been studying arthropods in Dyke Marsh Preserve (DMP), Virginia, a rich ecosystem which may contain over 4,000 arthropod species. They comprise a major component of DMP's food web. Information about these arthropods is required to manage them in the Preserve which is threatened by erosion, pollution, and possible mosquito control with insecticides. The Lab produced Arthropods of Dyke Marsh Wildlife Preserve, Virginia: A Searchable Online Database (ADMWPD) (<http://data.georgetown.edu/departments/biology/nps/dmwp.cfm>) for DMP managers and other interested parties. So far, the ADMWPD includes over 1000 species and morphospecies, including four Virginia insect state records (2 alderflies, 1 flower fly, and 1 sawfly). The Lab also created an online taxonomic key of DMP ants (http://pick4.pick.uga.edu/mp/20q?guide=Ants&cl=US/VA/Fairfax/Dyke_Marsh). So far, publications are on DMP soil arthropods and alderflies. Work-in-progress is focusing on DMP ants, ichneumon wasps, large noctuid moths, and soil mites.

The Archeology of the Middle Ford Ferry Tavern at Monocacy National Battlefield

POSTER

Joy Beasley and Tom Gwaltney

In 2004, archeologists from the National Park Service and the University of Maryland uncovered the Middle Ford Ferry Tavern, a mid-eighteenth century tavern associated with an early ferry over the Monocacy River. This site was investigated as part of a larger multi-year study of the Thomas Farm, one of the six component properties that comprise the battlefield. A wide variety of domestic artifacts dating to the eighteenth and early nineteenth centuries were uncovered, as well as the footprint of a small structure. Subsequent primary and secondary documentary research have uncovered a great deal of information about the tavern's occupational and social history. As the park's oldest known historic site, the Middle Ford Ferry Tavern offers a rare opportunity to explore a rural colonial tavern, and also provides clues to the park's earliest transportation history.

Archeology and History in Rock Creek Park
John Bedell

Fieldwork has recently been completed for the third year of a four-year archeological survey and inventory of Rock Creek Park in Washington, DC. The finds to date include a series of extraordinarily rich Native American camp

sites used repeatedly between 2500 BC and AD 1400, colonial tenancies, nineteenth-century dwellings, and Civil War military artifacts from the Battle of Fort Stevens in 1864. Documentary research has uncovered many interesting details about the history of the park, and many of the archeological sites can be associated with known historical characters, from John Carroll of Annapolis to African-American tenants of the 1890s. The story of the park is long and fascinating, and this study is helping to bring it to light.

Developing an Integrated Earthworks Management Plan: Balancing Legislative Mandates, Resource Protection, and Recommended Preservation Practices

Brandon Bies and Matt Virta

The George Washington Memorial Parkway was established May 29th, 1930 through the Capper-Crampton Act, which mandated the protection and preservation of the Gorge of the Potomac from Mount Vernon through Great Falls. This legislation, in addition to the National Park Service Organic Act, which established parks for the purpose of conserving "the scenery and the natural and historic objects and the wildlife therein", provides a legislative framework for the management of GWMP lands. Contained within GWMP are the remains of Fort Marcy, an 1861 Civil War earthwork constructed as part of the Defenses of Washington. Today, Fort Marcy exists in an upland deciduous forest that presents both challenges and benefits to the long-term preservation of the earthworks and the archeological resources contained within. GWMP resource management staff is attempting to strike a balance between legislative mandates, cultural and natural resource management practices, and recommended procedures for the preservation of earthworks.

Developing a Spatially Explicit Participatory Model to Explore Anthropogenic Off-site Threats on Tributary Streams at the Potomac Gorge

POSTER

Robin Brake

The Potomac Gorge Site Conservation Plan identifies conservation targets, analyzes threats, and presents strategies for mitigating environmental problems currently observed in one of the most biologically significant areas in the eastern United States. Tributary streams were the only conservation target to receive a "Very High" threat rating. A spatially explicit participatory model will be produced that will allow NPS personnel to analyze existing conditions and conduct scenario analysis. Components will include physio-geographic aspects, land use, and landowner characteristics. A survey of representative communities near the Gorge will collect data relative to practices that impact area water resources. Survey data will be applied to the larger model for use in simulating resident attitude/behavior in demographic, cultural, and

informational drivers. This pilot project will identify future priorities for work within the Potomac Gorge and will provide a generalized application in social science issues confronting the National Parks as a whole.

An Overview of the Invertebrate Fauna of Plummerville Island, Maryland

POSTER

John Brown

The biota of Plummerville Island, Maryland, the research home of the Washington Biologists' Field Club and a portion of the Chesapeake and Ohio Canal National Historical Park, has been the subject of countless biological investigations over the last 100 years. While the flora and vertebrate fauna are fairly well known, the invertebrate fauna remains poorly documented with the exception of several families of insects. Recent field work (1998-2005) funded by the Washington Biologists' Field Club, coupled with "data-mining" activities, focused on the insect collection of the National Museum of Natural History Museum. This project was also funded by the National Park Service (2002-2004) and has documented over 3,000 species of invertebrates on the site. While the species composition of some groups of insects appears to have remained fairly constant over the past 100 years, that of other groups has changed dramatically. Methods of field-collecting, specimen data-capture, and literature-review will be presented and summarized.

Rehabilitating the Henry House

Ray Brown

In 2005, Manassas National Battlefield Park completed the rehabilitation of the historic Henry House near the park's Visitor Center. The house, which dates to 1870, became a battlefield landmark for returning Civil War veterans and later housed a museum after the Sons of Confederate Veterans acquired the farm in the 1920s to establish a privately-run battlefield park, a precursor to Manassas National Battlefield Park.

The project included restoration of the dwelling's exterior to its appearance during the Henry family's occupation of the property in the late 19th century, repairs to deteriorated portions of the building, and rehabilitating the interior for use in interpretive and educational programs. The poster will highlight physical work on the building, as well as archeological, historical, and architectural research that was undertaken preparatory to the project.

Conservation in the Parks

Catherine Dewey

This past summer, the NCR architectural conservator has assisted several of the parks (including ANTI, NAMA, ROCR, PRPK and GWMP) with various