
Date: March 2003	Contact: Jeffrey Marion	Phone: 540-231-6603	Email: jmarion@vt.edu	Address: USGS Patuxent Wildlife Research Center Virginia Tech/Forestry (0324) Blacksburg, VA 24061
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Technical assistance to the National Park Service

Description:

The Virginia Tech Field Station is administered by the USGS Patuxent Wildlife Research Center but is located in Blacksburg, VA where it is affiliated with the Department of Forestry, College of Natural Resources. Station staff conduct a variety of research, inventory and monitoring, technical assistance, and information and technology transfer activities serving the National Park Service and other federal and state land management agencies. To date, 44 natural and social science studies totaling approximately 1.7 million dollars have been contracted to the Station and University scientists.

The goals established for managing protected natural areas charge agencies with a dual mandate to provide for appropriate recreational activities while protecting natural environments and processes and avoiding conspicuous evidence of human use. However, research has shown that visitor activities inevitably alter natural conditions, particularly on campsites and trails where visitors spend the majority of their time. Wildland recreation, characterized by visitor freedom from societal constraints, is frequently regulated or restricted by management efforts to protect resources. Thus, recreation may endanger resource protection goals just as resource protection actions may restrict opportunities for recreation. Recent research has also shown that resource conditions on campsites and trails directly affect the quality of recreational experiences.

To clarify the seemingly contradictory obligations of recreation provision and resource protection, protected area managers often establish policy and management actions by turning to scientists for expertise and information necessary to make informed decisions. The research focus of this Field Station is research in the emerging discipline of recreation ecology, which seeks to describe the types, amounts, and rates of ecological changes resulting from recreational use, including relationships with

environmental and use-related factors that influence these changes.



Progress to Date:

Station personnel have assisted managers of many national parks and forests in the development and implementation of visitor impact monitoring efforts for campsites, recreation sites, and trails. A particular focus has been on the development of a monitoring program at Shenandoah National Park to evaluate and improve implementation of a new comprehensive program of backcountry camping management. Criteria for the selection of impact-resistant



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designated campsites were also developed and field tested. Assistance was also provided to NPS staff of the Appalachian Trail Project Office and the Appalachian Trail Conference in assessing and managing recreation impacts at high-use destination areas along the Appalachian Trail. Other studies are underway at Acadia, Cape Cod, and Zion National Parks, Big South Fork National River and the Hoosier National Forest. The unit responds to numerous other requests for information and literature.

Management Implications:

Protected area managers require objective information documenting the type and severity of visitor-related impacts to natural resources. Such information is often used in carrying capacity decision frameworks, or simply to evaluate changing conditions over time and to gauge management success in minimizing such impacts.

Recreation ecology demands a broadened perspective, one that integrates a scientific understanding of ecological changes caused by

recreational activities with knowledge of recreation resource management and resource protection. Knowledge contributed by this discipline offers managers reliable information and insight into the dynamic relationship between wildland visitors and the visited environment. Such information can objectively describe recreation-related resource changes, facilitate an understanding of causes and effects, and improve insights regarding the prevention, mitigation, management, and restoration of problems.

Contacts:

Jeff Marion

USGS Patuxent Wildlife Research Center

Virginia Tech/Forestry (0324)

Blacksburg, VA 24061

Phone: 540-231-6603

Email: jmarion@vt.edu

For more information about Patuxent and our science, please visit our website at

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