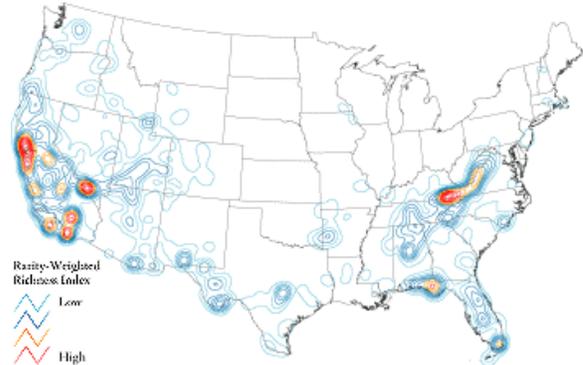




**PRECIOUS HERITAGE BOOK RELEASED**

More than 200,000 species are now known from the United States—a figure double the previous estimate, and this figure only includes those species that scientists have formally named and may represent fewer than half the species yet to be discovered in the United States. *Precious Heritage, The Status of Biodiversity in the United States* is based upon a review of 25 years of information collected primarily by State Natural Heritage Programs, and is the first time an attempt has been made to compile the state data into one report. The richly illustrated book sponsored by the Association for Biodiversity Information and The Nature Conservancy documents the enormous breadth of U.S. species and ecosystems, and also considers how they are faring, what is threatening them, and what is needed to protect our nation's natural heritage. The good news is more than 200,000 species are known from the U.S., a surprising number of life forms are more diverse in the U.S. than anywhere else on Earth, and the U.S. supports a broader array of ecosystems than any other nation on Earth. The bad news is one-third of U.S. species are at risk, more than 500 species are already extinct or missing, and nearly 60% of the U.S. outside of Alaska has lost most of its natural vegetation. Habitat destruction is the leading threat to U.S. species followed closely by alien species invasions like purple loosestrife, zebra mussels, and kudzu. An innovative analysis of heritage data reveals identifies several biological hotspots including our own southwest Virginia. To find out more and to order a copy visit [www.abi.org](http://www.abi.org).



**Hot Spots of Rarity**

*Hot spots of rarity in America appear in dramatic relief in this view of imperiled species distributions. Based on field data gathered by state Natural Heritage Programs and a sophisticated computer analysis, scientists ranked areas according to how unique—or irreplaceable—are their complement of rare species.*

**ENTOMOLOGIST IDENTIFIES NEW MOTH SPECIES IN VIRGINIA**

Natural Heritage zoologists hosted a visit from Dale Schweitzer, a Nature Conservancy entomologist with expertise in northeastern North America moths. Dr. Schweitzer **examined over 7,000 moths** collected in 1999 from across the state by natural heritage staff. In addition, to confirming numerous identifications made by heritage program staff, he was able to confirm many species new to Virginia.

**COMMUNITY CLASSIFICATION COMPLETED AT FORT BELVOIR**

The Natural Heritage field ecologist met with personnel from Fort Belvoir and Paciulli, Simmons, and Associates to permanently mark and georeference vegetation sample plots at Army Garrison, Fort Belvoir. Data from the vegetation samples were collected during the 1999 field season for the development of a base-wide community classification. After an initial

analysis of the data, six ecological community groups and at least eleven community types have been identified. Representative plots of each community type were marked. The project and final report will be complete in Spring 2000.

### THREE INVENTORY REPORTS SUBMITTED TO QUANTICO MARINE CORPS BASE

Natural Heritage biologists submitted to Quantico Marine Corps Base three final reports for surveys conducted on the Base in 1998 and 1999. Zoological surveys focused on the status of a federally endangered freshwater mussel, the dwarf wedgemussel (*Alasmidonta heterodon*)(G1/S1) and on a survey of the butterflies and moths of the Base. The dwarf wedgemussel population has declined severely since its discovery in 1990 and its persistence in Aquia Creek is questionable. Although no rare Lepidoptera have been identified to date (some await expert identification), 61 species of butterflies and 301 species of moths were observed over the two years.

A survey for the federal and state listed orchid small whorled pogonia (*Isotria medeoloides*) (G2G3/S2) in four timber compartments resulted in the finding of one new occurrence of 24 stems contained within four colonies. A flora inventory of the fire-maintained grasslands and woodlands within an area of the Base that undergoes frequent ordnance-produced fires yielded a list of 351 species, with two state rare species, red milkweed (*Asclepias rubra*)(G4G5/S2) and Buxbaum's sedge (*Carex buxbaumii*) (G5/S2), and 41 taxa new to a county. Occurrences of three significant fire-maintained vegetation communities were also documented including two occurrences of the globally rare Piedmont Prairie, two occurrences of the globally rare Oak-Hickory Woodland/Savanna, and three occurrences of Coastal Plain / Piedmont Seepage Bog.

### MONITORING AND INVENTORY PROJECT AT POOR MOUNTAIN NATURAL AREA PRESERVE, ROANOKE COUNTY

An intensive monitoring and inventory project has been initiated at Poor Mountain Natural

Area Preserve. This effort consists of the installation of permanent sampling plots in the eastern section of the Preserve. The project will provide quantification of the distribution and abundance of the rare parasitic shrub piratebush (*Buckleya distichophylla*) (GS/S2), as well as documenting the ongoing mortality of eastern hemlock (*Tsuga canadensis*) from the balsam wooly adelgid. Another intended outcome of the project is the delineation of management units for future stewardship efforts.



piratebush (*Buckleya distichophylla*) (GS/S2)

### DRAGON RUN INVENTORY COMPLETED

A final report detailing the findings of a natural heritage inventory of the Dragon Run watershed has been prepared for the Dragon Run Watershed Protection Project, a cooperative effort among Friends of Dragon Run, Gloucester County, and the Virginia Outdoors Foundation. Seventeen rare plant and animal populations and significant natural communities were located during the inventory process, which took place during the 1999 field season. These include the Bald Eagle, cypress sphinx (a moth), great purple hairstreak (a butterfly), and the plants Northern purple pitcher-plant, featherfoil, yellow water crowfoot, and red turtlehead. Perhaps even more significant is the baldcypress-tupelo swamp forest community, which is one of the most extensive (over 2,000 acres) and unspoiled in Virginia. Funding for the project was provided by the Department of Environmental Quality through a grant from the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, under the Coastal Zone

Management Act of 1972. This project will be continued in 2000 with additional funding.

#### KICK-OFF MEETING FOR CAMP PENDLETON NATURAL HERITAGE INVENTORY

The Natural Heritage field botanist, ecologist, and zoologist attended a kick-off meeting for the Natural Heritage Inventory Update to be conducted during 2000 at the US Naval Amphibious Base South Virginia Beach Annex (Camp Pendleton). The 367 acre base located south of Virginia Beach was inventoried by DNH in 1989-1990 and 1992 and found to support several state rare plant species including bog rush (*Juncus elliotii*)(G4G5/S1S2), bluejack oak (*Quercus incana*) (G5S2), fasciculate beakrush (*Rhynchospora fascicularis* var. *fascicularis*) (G5T?/S1?), and creeping seedbox (*Ludwigia repens*) (G5/S1), as well as two taxa, a plant and a subspecies of mouse, no longer monitored by DNH. During the project, GPS locations of the rarities known to be present will be obtained, and inventories will be conducted for other rarities including taxa from groups such as invertebrates not covered in the earlier inventory.

#### PHRAGMITES FEEDERS DOCUMENTED IN VIRGINIA

The GIS Projects Manager/Conservation Biologist met with Dr. Bernd Blossey, Director of Cornell University's Biological Control of Non-Indigenous Plant Species Program, at Dameron Marsh NAP to search for insects that feed on *Phragmites australis*. As many as four insect species and one mite species were found. Previously there were no records for these species in Virginia. These insects may hold promise as biological control agents for this invasive plant.

#### SHENANDOAH NATIONAL PARK NATURAL HERITAGE RESOURCES MONITORING

Natural Heritage stewardship biologists participated in a meeting at Shenandoah National Park to assist in development of biological monitoring goals and sampling objectives for various Park resources. The

meeting was attended by representatives from a number of state and federal agencies, including U.S. Forest Service, USGS, VA Dept. of Forestry, and research scientists from Virginia Polytechnic and State University, Penn State University, and The Nature Conservancy. The goal of the meeting was to develop monitoring objectives and identify measures to indicate progress toward management goals.

#### EASTERN SHORE NATIONAL WILDLIFE REFUGE RESOURCE MANAGEMENT PLAN

On March 21-22, 2000, NH Chief Biologist provided planning recommendations in a 2-day meeting to determine management needs for the significant biological resources at the Eastern Shore National Wildlife Refuge in southern Northampton County. During this meeting, numerous management strategies were discussed to help protect migrant birds and insects as well as rare plants and animals.

#### CHESAPEAKE BAY STEWARD PARTICIPATES IN BARRIER ISLAND AVIAN PARTNERSHIP PLANNING

The Natural Heritage Chesapeake Bay Steward recently participated in this annual meeting that also included researchers and land managers from the TNC-Virginia Coast Reserve, College of William and Mary, Eastern Shore of Virginia and Chincoteague National Wildlife Refuges, and the Biological Resources Division of the United States Geological Survey. Colonial and shorebird monitoring and breeding productivity data was reviewed for the 1999 breeding season for the Virginia barrier islands. Strategies for dealing with mammalian predators were also discussed, as well as the ongoing experimental project of predator removal.

#### PRESCRIBED BURN CREW "FIRE REFRESHER" WORKSHOP

On Friday March 3, Natural Heritage Fire Management staff conducted a one-day "Fire Refresher" workshop for DCR (NH & State Parks) and Nature Conservancy prescribed burn crew members. This daylong program included sessions on burn logistics, communications, safety, use of chainsaws and fire shelters,

engines and pumps, and use of hoselays to deliver water. Burn crew members and leaders also performed the annual standard physical fitness exam ("pack test" 3 miles walking carrying 45lb in under 45 minutes), which all participants passed.

#### BURNS CONDUCTED IN SOUTHEAST VIRGINIA

During the week of February 7, Natural Heritage staff participated in two successful and safe prescribed burns. Staff first assisted the Nature Conservancy by providing crew and resources to execute a 50-acre burn for marsh habitat maintenance on an island unit in the North Landing River in Virginia Beach. The following day, NH staff conducted their first prescribed burn of the year and first ever at North Landing River Natural Area Preserve. While this burn of a 17-acre canebrake unit was of low intensity, it is anticipated that desired goals of fire management will be met. This burn also served as excellent training experience for crewmembers prior to the main burn season approaching in April thru June.

*James S. Gilmore, III, Governor*

*John Paul Woodley, Jr.  
Secretary of Natural Resources*

*David G. Brickley, Director  
Department of Conservation &  
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