Prince William Forest Park

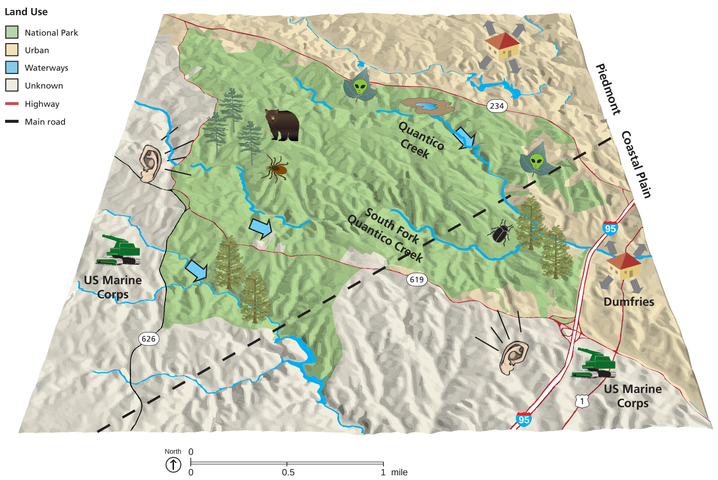
Virginia

National Park Service
U.S. Department of the Interior

National Capital Region Network

Preserving Virginia's Natural Heritage

Prince William Forest Park is the largest protected example of Piedmont forest in the National Park System. The ~15,000 acre park in northern VA also protects the Quantico Creek watershed, and is a sanctuary for numerous native plant and animal species. Because the park includes two physiographic provinces (Piedmont and Coastal Plain) and lies in the transition zone between northern and southern climates, it has a wide range of vegetative communities, including rare seepage swamp habitat and remote stands of old-growth eastern hemlock. Major threats to park resources include adjacent land development, noise pollution, and the introduction of invasive species and disease.



Resource Values

- Freshwater flow: Quantico and South Fork Quantico Creeks
- Physiogeographic regions
- Forests: eastern hemlock and white pine
- Native wildlife: black bear
- Wetlands: seepage swamp

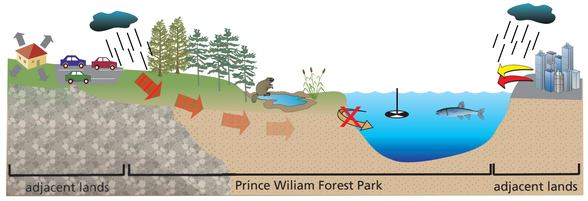
Resource Stressors

- Development: suburban
- Military site
- Noise: air and road traffic
- Invasive/exotic plants
- Insect pests: wooly hemlock adelgid and deer tick

The forest edge is being encroached by suburban development.

Water Quality and Hydrology

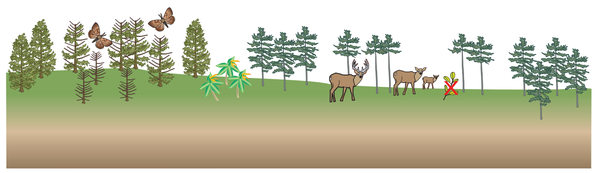
Continuous forest habitat protects watershed



Most of the Quantico Creek watershed lies within the park. The water quality of Quantico Creek is excellent and supports numerous fish species and other aquatic life . Continuous forest habitat protects this watershed and contributes to the high water quality by helping to filter nutrients and sediment , stabilize soils , and moderate flooding. The health of this watershed is potentially impacted by increasing development , impervious surfaces , and urban input .

Ecosystem Pattern and Processes

Large intact forest provides valuable indicators of ecosystem processes

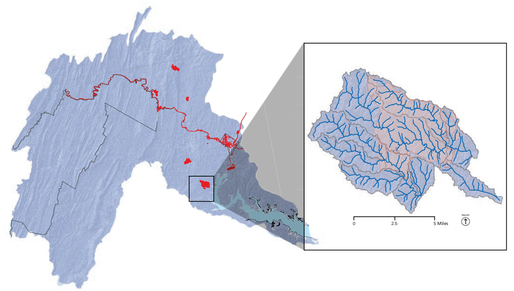


The large intact forests of Prince William Forest Park provide an opportunity to track changes in forest communities through time and space. Natural processes of succession may be perturbed by overabundant deer populations or outbreaks of forest pathogens and pests . The park supports a wide variety of forest-dwelling species including the small-whorled pogonia , a Federally-listed threatened species. The confluence of diverse habitat types makes these forests valuable early indicators of the effects of regional environmental change such as changes in climate.

Quantico Creek has good water quality.

Vegetation monitoring by park staff.

Prince William Forest Park Watershed



(Above left) Potomac River watershed and National Capital Region Network parks (red). (Above right) Prince Wiliam Forest Park watershed and boundary.

Park map showing major roads and waterways.

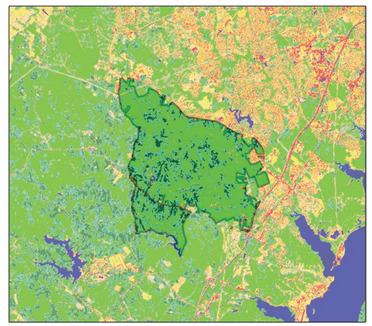
Vital Signs Monitoring

Assembling the puzzle

Park vital signs monitoring is designed to inform managers of the condition of water, air, plants and animals, and the various ecological, biological, and physical processes that act on those resources. This site-specific data will provide parks the information needed for ecologically sound management of the natural resources.

In Prince William Forest Park, data are being collected on **Water Quality and Hydrology** and **Ecosystem Pattern and Processes**, with reference to park specific concerns as well as understanding regional issues.

Prince William Forest Park protects a large intact patch of forest (greens) within a rapidly developing area (orange and red). Along the edges of the park are Interstate 95 and Route 234, both major transportation routes through Prince William County. The orange and red portions of the map show the rapid urbanization encroaching on the park. In addition to protecting a large intact forest patch, Prince William Forest Park protects water quality in Quantico Creek. Research being conducted in the park will help determine the effect of encroachment on water quality in this watershed.



Anderson Level 2 landcover map showing surrounding encroachment to the woodlands of Prince William Forest Park.

National Capital Region Inventory & Monitoring Program
National Park Service
www.nps.gov/cue

Integration & Application Network (IAN)
University of Maryland Center for Environmental Science
www.ian.umces.edu

Photos by NPS