Jewelweed (*Impatiens capensis*)

Soft rush (*Juncus effusus*)

Rice cutgrass (*Leersia oryzoides*)

Cardinal flower (*Lobelia cardinalis*)

Yellow pond-lily (*Nuphar lutea*)

Cinnamon fern (*Osmunda cinnamomea*)

Rare Species:

Fort Pickett provides habitat for a number of rare wetland plants in Virginia. A **rare species** is one that is uncommon in its distribution within the state. The number of occurrences determines the degree of rarity, and some plants are so rare that they are only known from fewer than five locations in Virginia! Two of the rare wetland plant species at Fort Pickett are shown below:

Velvety sedge (*Carex vestita*)

American water lotus (*Nelumbo lutea*)

Invasive Species:

An **invasive species** is one that has the potential to aggressively take over an area and out-compete other species for available space and resources. **Invasive plants**, for example, tend to reduce biodiversity within an area by invading in large numbers and occupying the space within which other plants would normally survive. Often, many invasive species are also considered to be **exotic**; that is, they are plants that have been introduced from other countries. In their native region (for example, China), these plants may have natural enemies like insects or other plants that help to keep their numbers down. When such exotic plants are introduced in the U.S., they often do not have comparable natural enemies, and therefore can proliferate and take over entire regions of forest, field, or wetland.

At Fort Pickett, some of the most problematic invasive species to look out for are shown below:

Autumn olive (*Elaeagnus umbellata*)

Chinese privet (*Ligustrum sinense*)

Japanese honeysuckle (*Lonicera japonica*)

Cattails (*Typha* spp.)

Marsh dewflower (*Murdannia keisak*)

Kudzu (*Pueraria lobata*)

Other Natural Resources

Upland buffers & Riparian Corridors:

Uplands are as important to water quality and protection of downstream resources as the wetlands described above. **Upland buffers** around wetlands help to filter pollutants and nutrients from surface runoff *before* they get into the wetlands and streams. Forested buffers are particularly important because forests tend to support a deep root zone that helps to bind the soil and prevent erosion. Forests also support several layers of vegetation that help to intercept rainfall, provide habitat for animals, and promote shade which reduces soil temperature and provides a more suitable environment for soil organisms. Upland buffers along streams and waterways are referred to as **riparian corridors**, and serve similar functions within the landscape. Such streamside zones are also important as wildlife **migratory corridors** – zones through which animals can travel from one region to the next. Because of the large number of streams and watercourses at Fort Pickett, upland buffers and riparian zones are very important at helping to preserve habitat and downstream resources.

Unique Habitats:

Other unique habitats at Fort Pickett include rock outcrops like the **granitic flatrocks** region in the central portion of the base, which is a globally rare community type that supports drought-tolerant species. Other unique habitat types include marginal, fire-maintained scrub/grasslands which support rare species such as the federally endangered **Michaux's sumac** (*Rhus michauxii*). Michaux's sumac is an extremely rare and unique plant, and Fort Pickett has the largest known populations of this plant in the southeast. Land management activities at Fort Pickett such as **prescribed burning** help to maintain rare species like Michaux's sumac. Prescribed burning also produces globally rare community types such as **loblolly pine savannas** with their pine canopy and open understory, and **oak-hickory woodland/savannas** with a similar appearance, but dominated by hardwoods.

What You Can Do

At Fort Pickett, the Environmental Division is tasked with preserving natural features and promoting sensible and sustainable use of environmental resources within the base. These objectives must be balanced with the greater military mission. Good stewardship of the land involves all who come to the installation, and we can all make a difference. While you are stationed at Fort Pickett, consider the following practices:

~ If training activities require off-road vehicular use, remember to avoid wetlands and streams if possible, crossing them only if unavoidable, and making sure to cross in a perpendicular fashion.

~ Do not litter.

~ Exercise proper disposal of chemicals and solvents.

~ Report any incidents of potentially illegal or environmentally damaging activities to your superior.

~ Avoid the temptation to pick native flowers or other plants from natural habitats at Fort Pickett.

~ Respect our natural heritage, and enjoy the many environ mental resources that Fort Pickett has to offer!

WILLIAMSBURG ENVIRONMENTAL GROUP, INC.

Virginia Army National Guard Maneuver Training Center-Fort Pickett

Wetlands and Other Natural Resources At Fort Pickett

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Wetlands

What is a wetland?

The name "**wetland**" says it all: wetlands are "lands" that are "wet". But how wet does land need to be to earn the name? The U.S. Army Corps of Engineers defines a wetland as an area that is saturated or covered with water for a long enough period during the growing season to deplete the supply of oxygen in the soil – such soils are "**chemically reducing**" and lead to a condition called "**hydric soils**".

When wetlands are identified in the field, three diagnostic criteria are used: 1) **wetland vegetation** (a prevalence of plants that commonly grow in wetlands), 2) **hydric soils**, and 3) **wetland hydrology** (evidence of water like blackened leaves or soil saturation). All three criteria must be present for an area to be classified as a wetland.

Why are wetlands important?

Wetlands provide a host of services to the landscape. These are usually termed "**wetland functions**". One such function is nutrient retention. Wetlands are often called the "kidneys of the landscape", because they filter nutrients and pollutants from surface and groundwater, preventing harmful effects downstream.

Wetlands also trap sediments, provide flood protection, buffer shorelines from erosion, and provide surface water storage and groundwater recharge by infiltration through the soils. Wetlands are extremely important as habitat for wildlife and waterfowl, including recreationally important species such as deer, geese, and game fish. Wetlands are critical habitats for maintaining biodiversity within the landscape – biological diversity within certain wetland habitats is among the highest in the world.

Finally, wetlands can be aesthetically pleasing features, providing opportunities for ecotourism, educational outreach, and scientific research. Wetlands have often been misunderstood as places of pestilence and disease, harboring mosquitoes and malaria and even evil spirits! On the contrary, a healthy wetland will actually *decrease* troublesome pests like mosquitoes, because healthy wetlands promote beneficial animals like amphibians and dragonflies that feed on mosquitoes and help to keep their numbers down.

How are wetlands protected?

In the United States, wetlands are protected by a number of environmental laws, the most prominent of which is the **Clean Water Act**. The Clean Water Act regulates discharge of dredge or fill material into wetlands, and requires a permit from the U.S. Army Corps of Engineers prior to conducting such activities. In Virginia, wetlands are also regulated by **State Water Control Law**. In addition to the Corps permits, applicants must acquire state permits from the Virginia Department of Environmental Quality.

Wetland types at Fort Pickett

Wetlands are generally classified according to how wet they are, where their source water comes from, their geographic settings, and/or what types of plants grow in them. The most common wetland type on Fort Pickett is **palustrine** – which simply means any wetland that is not associated with a tidal system or a river or lake. Palustrine wetlands at Fort Pickett come in several varieties:

~ **forested** (dominated by trees),

~ **scrub-shrub** (dominated by shrubs and young trees),

~ **emergent** (dominated by herbaceous plants), and open water features such as ponds, lakes, and streams,

In addition, Fort Pickett has ~ **riverine** wetlands that are supported by flooding from the Nottoway River to the south.

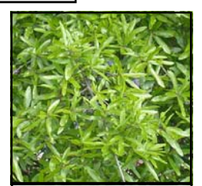
Wetland Plants

Plants are very important in characterizing wetlands. The types of plants growing within a wetland can give clues to different site conditions such as soil chemistry, previous land use and disturbance, water source, how wet the site is, and what types of animals will likely be found there. Examples of common wetland plants at Fort Pickett are provided below:

Trees:

Red maple (Acer rubrum)

River birch (*Betula nigra*)



Willow oak (*Quercus phellos*)

Sweet gum (*Liquidambar styraciflua*)

Sweetbay (*Magnolia virginiana*)

Green ash (*Fraxinus pennsylvanica*)

Sycamore (*Platanus occidentalis*)

Swamp chestnut oak (*Quercus michauxii*)

Black gum (*Nyssa sylvatica*)

Shrubs:

Tag alder (*Alnus serrulata*)

Buttonbush (*Cephalanthus occidentalis*)

Marsh hibiscus (*Hibiscus moscheutos*)

Winterberry (*Ilex verticillata*)

Spicebush (*Lindera benzoin*)

Swamp rose (*Rosa palustris*)

Black willow (*Salix nigra*)

Highbush blueberry (*Vaccinium* spp.)

Arrowwood (*Viburnum dentatum*)

Herbaceous Plants:

False nettle (*Boehmeria cylindrica*)

Shallow sedge (*Carex lurida*)

Wood reedgrass (*Cinna arundinacea*)