

# The Environmental Quarterly

QUARTER 1

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## GREEN YOUR LIFE:

Keeping the air pressure in your tires up to the vehicle's guidelines improves mileage by about three percent

## American Water Projects Saving Energy

It is not every day that a company can find a way to reduce energy usage by 74 percent, but that is what American Water achieved by improving their wastewater lagoon operations. American Water identified the two lagoons located at the Wilcox Wastewater Treatment Facility had lost over 25 percent of their volume due to the settlement of solids over the years. Under their Repair and Replacement Program, they cleaned, re-graded, and re-lined the main lagoon to provide enough capacity to meet their operational needs. The second lagoon is offline but remains ready to meet any future demands. They also evaluated their lagoon operations and included mixers to supplement the aerators. The old lagoons had ten aerators running 24/7, but now only four smaller mixers run 24/7 and a single larger aerator runs six hours a day. These improvements combined to save over 350,00kwh and \$34,800 per

year. American Water also replaced two existing aerator blowers with high efficient units saving 14,900kwh and \$14,600 per year (a 57 percent reduction). It should be noted that American Water is provided electricity per their contract, so these savings go directly to Fort A.P. Hill. Way to go!

Written by Troy Smith  
- Environmental Specialist and Energy Manager



## Aldo Leopold (1887-1948) : Father of Wildlife Management



*"A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise." - Aldo Leopold*

Jan. 11 celebrates the life of environmentalist, writer, philosopher, teacher and forester Aldo Leopold. Born in Burlington, Iowa, Leopold had a natural inclination to the great outdoors from an early age. After earning a degree in Forestry from Yale, he was promoted to supervisor for Carson National Forest, New

Mexico at 24. By his persistence, the country received our first national wilderness area—40 years before the Wilderness Act. He also founded the Wilderness Society and wrote the first textbook on wildlife management. In his wildlife ecology class at the University of Wisconsin, his goal was "to teach the student to see the land, to understand what he sees, and enjoy what he understands." He and his family bought and restored the land of an abandoned farm near Baraboo, Wisconsin—an area known as the

"sand counties." During this time that he wrote his most familiar work, *A Sand County Almanac*.

Sadly, a week after Oxford Press accepted his essays for publication, he suffered a heart attack while helping put out a neighbor's grass fire that was spreading toward his land. *A Sand County Almanac* was published in 1949. Leopold was the most influential conservation thinker of the 20th century, his legacy a pivotal worldview on the harmonic relationship between nature and man.

# Fish and Wildlife: Bald Eagle



On Jan. 5 we celebrate National Bird Day, and what better bird to highlight than our National Bird and Fort A.P. Hill resident, the Bald Eagle (*Haliaeetus leucocephalus*).

These majestic creatures were placed on the endangered species list in 1967 because the population was threatened with extinction; their recovery is one of the greatest conservation comeback stories in history. Even though it was delisted in 2007, the Bald Eagle is still federally protected under the Bald and Golden Eagle Protection Act. Fort A.P. Hill's excellent habitat has supported as many as 11 nesting pairs in a single breeding season and congregations of more than 50 migrant individuals have been

observed. Fort A.P. Hill lies within the Lower Rappahannock Important Bird Area, which is recognized for supporting the densest breeding population of Bald Eagles in Virginia. It is also one of the largest summer and winter eagle concentration areas in eastern North America.

The Fort A.P. Hill Fish & Wildlife Section performs annual nesting activity surveys to monitor and protect known-nesting locations, and periodically coordinates flyover surveys to assess productivity and locate new nest sites. Eagles mate for life and will return to the same nest each year. Bald Eagles add fresh material to nests each year, which can sometimes get as large as a Volkswagen Bug!

Written by: John Yowell  
- Fort A.P. Hill Natural Resources Specialist

## GREEN YOUR OFFICE SPACE:

Place plants around your desk to be more relaxed and focused. Plants also improve indoor air quality

# What's Blooming: Skunk Cabbage

It is true that most plants in Virginia bloom in the spring or summer. However, there is one Fort A.P. Hill plant that waits until the coldest part of winter to bloom—I'm of course referring to the elegant, peculiar, pungent, and down-right fascinating—Skunk Cabbage (*Symplocarpus foetidus*)! If you've ever driven along A.P. Hill Drive between Shackelford Road and the drop zone, you may have noticed a strikingly green plant with huge fan-like leaves covering the forest floor of wetlands during the warmer months. Although this species may have its leaves above ground during the summer, it doesn't produce a flower until the coldest months in winter!

This is when things get weird.

Unless you know what to look for, Skunk Cabbage flowers don't look like any other flower in Virginia, and quite frankly, they don't look much like flowers at all! These bizarre blossoms have only one large petal that wraps around the

might be purple and yellow-striped, spotted or solid purple.

By now you might be wondering why this species is called Skunk Cabbage. It's because instead of producing a pleasant sweet smell, this species reeks like rotten garbage! This foul odor might seem repugnant to you or me, but to many insects this smell is very alluring. When the bugs visit the skunk cabbage flower, they're happy to help pollinate the malodorous flower.

But I still haven't told you the coolest part. If the putrid smell and bizarre winter flowers haven't piqued your interest, Skunk Cabbage has one more astounding ability—it generates heat! Skunk Cabbage wouldn't be effective attracting pollinators in the winter if its flowers were buried under snow, so, to solve this problem, Skunk Cabbage flowers radiate warmth. It is not uncommon for a solitary flower to melt a basketball-sized hole through several inches of snow! Wetlands with lots of flowering Skunk Cabbage will stand out after snow falls. At first glance it may look like snow fell everywhere except that wetland, but in actuality, the snow fell and then melted because of these little "botanical space-heaters."

Written by: Robert H. Floyd  
- Fort A.P. Hill Natural Resource Specialist

Skunk Cabbage in the Spring



reproductive parts of the flower. These blossoms

# What's Bugging Us: Gypsy Moths

The upcoming months signal a waking up period for dormant insects, like the invasive Gypsy moth (*Lymantria dispar*). From 1869 to 1902 after accidentally being introduced in Massachusetts, the Gypsy Moth spread throughout the New England states, eastern New York and areas of New Jersey, with a population range that continues to expand. Males, take flight with their dark buff wing color while larger female moths equipped with white wings and black markings stick to crawling.

Known as defoliators, Gypsy Moth caterpillars hatch when hardwood trees such as oak, apple, some poplars, willow, alder and hawthorn

start to grow their leaves. Targeting leaves, the young caterpillars eat holes in the leaves while the older caterpillars eat leaves from the outside in. Their damage is extensive and is a direct cause of tree mortality; a loss of 51 percent or more leaves qualifies as heavy defoliation.

To date, the gypsy moth has not inflicted severe damage to Fort A.P. Hill's forests. According to Anne Ulrey, Fort A.P. Hill Forestry Planner, "The tree species that are preferred by the moth, particularly oak (*Quercus* spp.) comprise a significant portion of our forest composition, so remaining aware of gypsy moth activity locally and in the region is certainly important. Our personnel

working in the forest on a daily basis watch for known forest pests or the tell-tale damage that they inflict on the trees."

Wrapping burlap around a tree trunk will attract caterpillars hiding from predators, but it is also a useful management trap for collection and disposal. Because they tend to feed high in the treetops, destroying the egg masses instead of using insecticides is another method of controlling these creatures for the homeowner.



## Mattaponi River: "River of High Banks"

From its establishment by the Virginia General Assembly in 1658 led by Chief Powhatan, to its most recent Chief, Webster Custalow, the Mattaponi tribe has a rich history as one of the oldest in the nation. The political alliance of Tsenacomoco was composed of six central tribes of Algonquian-speaking Indians, including the primary Matapamient town. The shad from the nearby Mattaponi River have sustained the native people groups for many moons both nutritionally and financially.

The 85-mile long river meanders just west of Fort A.P. Hill. The post sits along the drainage divide with the Rappahannock River watershed to the north and the Mattaponi/York River watershed to the south. One third of the installation's water drains to the tidal Mattaponi which eventually empties into the Chesapeake Bay.

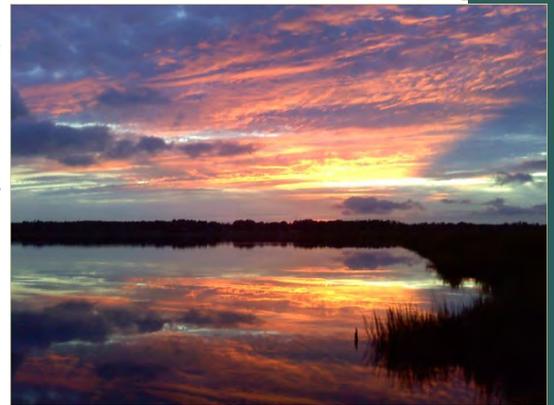
Similarly, as the Mattaponi relied on the river to meet their way of life, the city of Newport News also saw value in the river to meet its expanding water needs. In the early 1990's, the city requested the Army Corps of Engineers to construct a dam and reservoir. So ensued a

twenty-year battle over the benefits and detriments of the construction.

Environmentally, there were concerns over possible relocation of state-threatened bald eagles, the destruction of vulnerable plant species and, most critical, the flooding of 400 acres of wetlands.

Mitigation of two acres for every acre flooded was proposed but was not found adequate. John Mullin, Fort A.P. Hill Cultural Resource Manager, notes that "Culturally, complications arose due to a land rights treaty the Mattaponi held with Britain dating from the mid-1600's." Though a federally unrecognized Native American nation, the endangerment of the culturally significant Mattaponi historical sites and shad hatchery were risks the Army Corps of Engineers were not willing to take.

Finally, in September 2009, after the process of denial and appeals from various permits and agencies the city's construction attempts were denied.



The Fort A.P. Hill Environmental & Natural Resources Division provides proactive Compliance and Natural Resource Management services to support Fort A.P. Hill mission activities and enable a secure future.

## Schedule of Events

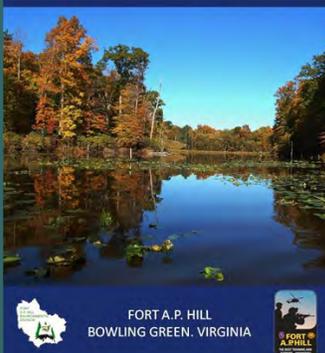
- **Feb 5 (8:00-3:30) — HAZWOPER training**
  - Invite only, Contact Allen Lawson (804) 633-8726 for further info
- **March/April various dates — Lead/Asbestos awareness training**
  - Open to all, required for applicable personnel
  - Five two-hour classes
  - Contact Troy Smith (804) 633-8975 or Mark Fisher (804) 633-8489 for further info
- **March 22 — World Water Day**
  - The average adult taking a five minute shower uses more water than an average person in a developing third world country does in a whole day - conserve water!
- **March 28 (8:30 a.m.-9:30 a.m.) — Earth Hour**
  - Stay tuned for the March/April Newsletter for more about this worldwide event!
- **April 23 — Fort A.P. Hill Earth and Safety Day**
  - 50+ cultural and natural resources exhibitors
  - Military vehicles
  - Appearance by Smokey Bear

If you would like to submit an article idea or would like more information on a topic that was covered, call Olivia Mills 804-633-8393 or email [keirah.o.mills.ctr@mail.mil](mailto:keirah.o.mills.ctr@mail.mil).

If you have any questions or would like more information on our Environmental Program Areas please give us a call 804-633-8255.



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