USGS Study Finds Dyke Marsh Eroding Rapidly

The U. S. Geological Survey has completed an 80-page study, at the request of the National Park Service, which concludes that Dyke Marsh is “eroding rapidly,” as much as six feet each year. The report is a comprehensive, authoritative analysis of Dyke Marsh’s geologic history, destabilization and degradation.

When the sand and gravel mining ended around 1973, the wetland “had been transformed from an approximately 184-acre stable tidal wetland into a geologically unstable 83-acre remnant.” Marsh loss has continued. Congress mandated the marsh’s restoration in 1974.

Here are some highlights from the USGS study:

“Analysis of field evidence, aerial photography, and published maps has revealed an accelerating rate of erosion and marsh loss at Dyke Marsh, which now appears to put at risk the short term survivability of this marsh. . . [italics ours]. This freshwater tidal marsh has shifted from a semi-stable net depositional
New FODM Board Member

Pat Salamone is a native Washingtonian who lives in the Alexandria section of Fairfax County. She has also lived in the Boston and St Louis areas, and moved back to Virginia in summer 2004. She has been a life member of the Friends of Dyke Marsh since 2007. Her roles for FODM include arranging nature walks in the marsh; these are intended to complement the weekly bird walks, focusing on other aspects of marsh life. (Suggestions for topics and walk leaders are welcome!) Pat’s interests include reading, gardening, native plants, and American history. She has a B.S. from Worcester Polytechnic Institute and an M.S. from Boston College, both in physics. She is a systems engineer in The MITRE Corporation’s Center for Acquisition and Systems Analysis. She is also a weekend mansion guide at Gunston Hall, the home of George Mason.

Friends of Dyke Marsh Board of Directors

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Barry Murphy 703-836-0888, proudhouse@mac.com
Mary Jo Detweiler 703-765-8087, mjdetweiler@cox.net
Pat Salamone 703-329-1748, salamone@mitre.org

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Sandy Spencer (Research) 804-333-1470, Sandy_Spencer@fws.gov

The Marsh Wren is a quarterly publication of the Friends of Dyke Marsh, Inc., a nonprofit 501(c) (3) organization. Letters and submissions to The Marsh Wren are welcome. Send them to the editorial address above. Board members too, can receive mail at this address. Special thanks to Duncan Hobart for managing our website (www.fodm.org), and to Paula Sullivan and Ed Eder for their photography contributions to The Marsh Wren and website.
President’s Message
Glenda C. Booth, President, Friends of Dyke Marsh

“When we reached Dyke, at a quarter to five [a.m.], the storm had passed. . . This kind of wilderness, neither land nor plain water, is almost inaccessible to man. . . We heard the wrens this morning before there was light to see them. All over the marshes we heard them, singing in a steady chorus, each song a gurgling chatter, brief but repeated with hardly time for breath between. When it became light enough, we saw the singing wrens as far as the eye could reach over the marshes, carried upward on fluttering wings above the grass-tops by the very exuberance of their song, and sinking back again. The dots were bobbing up and down everywhere, like a natural effervescence given off by the marsh.”

These are the exquisite words of Louis J. Halle from Spring in Washington, 1947, truly an inspiration for us to protect and restore Dyke Marsh.

Spring is rebirth, a time of return and regeneration. We have at least six Osprey nests and one Bald Eagle nest in the preserve. I am buoyed by the “spring” spirit among our members and friends who care about this wetland ecosystem. Thank you for all that you do.

Our Challenges

While we welcome spring’s resurgence, challenges continue, from turtle poaching to waterfowl hunting, from endless trash to persistent invasive species, from shoreline erosion to polluted stormwater runoff. The streams in the Belle Haven watershed have been rated among the sickest in the county. The Potomac River and Hunting Creek are under a PCB advisory for fish consumption. Hunting Creek is also impaired because of Escherichia coli bacteria. An off-leash dog park may be created near the wetland’s western boundary.

Our national parks are under attack by some in the U.S. Congress, at a time when NPS faces a maintenance backlog of nearly $11 billion (billion) or $600 million each year, according to the National Parks and Conservation Association. FODMers may want to let their U. S. senators and representatives know that our national parks should be a priority, especially in urban and suburban areas where so few natural areas remain.

Our Initiatives

In this issue, we outline some of our initiatives like supporting new scientific research and supporting our neighboring Belle View Elementary School to develop an outdoor classroom, near the western edge of Dyke Marsh, an area of the wetland that has had minimal human disturbance.

We had a successful raptor demonstration and wetlands walk on Earth Day, April 23. We again helped NPS host 600 Carl Sandburg Middle School students for a learning experience. We exhibited at a Prince William Conservation Alliance forum on March 21, at an April 6 Streams/Smart Growth workshop and at Alexandria’s Earth Day on April 30. On June 5, we will participate in Greenway on the Highway at Woodlawn Plantation, sponsored by the Southeast Fairfax Development Corporation, Woodlawn Plantation and Arcadia Center for Sustainable Food and Agriculture.

We work steadily on controlling non-native plants and we continue our popular Sunday morning bird walks led by dedicated experts. We will have a plant walk with NPS Horticulturist Barry Stahl on June 25 (see article page 6).

Halle continued to describe this beautiful May day in 1947: “The wrens were the principal feature, but the whole marsh would have been alive even without them. Kingbirds were engaging noisily in exhibitions of power flight and aerial control. Red-wings were crying and singing and flying wherever you looked. Twice we alarmed a female wood duck in an inlet, each with a flotilla of ducklings; the drakes were constantly rising and circling out over the marshes. Great blue herons trailed their legs in flight, an Osprey was hunting, black ducks took off and put down here and there, quacking softly. Late as was the season, we surprised a lone female red-breasted merganser on an inlet and made her take the air, splashing over the still water to launch herself.”

Enjoy Dyke Marsh and all its richness.
Restoring Dyke Marsh: USGS Reports Six Feet of Erosion Annually

USGS STUDY (Continued from page 1)

environment (1864–1937) into a strongly erosional one, during a time when it currently is in early-phase planning for comprehensive restoration.

“The marsh has been deconstructed over the past 70 years by a combination of manmade and natural causes. The marsh initially experienced a strong destabilizing period between 1940 and 1972 by direct dredge mining of the marsh surface. By 1976 the marsh had entered a net destructive phase, where it remains at present.”

USGS conducted extensive shoreline erosion analyses and concluded this:

“The more recent time interval [2002 to 2006] shows a marked increase in erosion in the southern part of Dyke Marsh, following a wave-induced breach of a small peninsula that had protected its southern shoreline. Field observations and analyses of annual aerial imagery between 1987 and 2006 revealed a progressive increase in wave-induced erosion that presently is deconstructing Hog Island Gut, the last significant tidal creek network within the Dyke Marsh.”

The study documents “an overall average westward shoreline loss of 6.0 to 7.8 linear feet per year [italics ours] along the Potomac River during this 19-year time interval. Additionally, photographic evidence documented that lateral erosion now is capturing existing higher order tributaries in the Hog Island Gut. Wave-driven stream piracy is fragmenting the remaining marsh habitat, and therefore its connectivity, relatively rapidly, causing the effective mouth of the Hog Island Gut tidal network to retreat headward visibly over the past several decades.

“Based on our estimates of total marsh area in Dyke Marsh derived from 1987 aerial imagery, as much as 12 percent of the central part of the marsh has eroded in the 19-year period we studied (or ~7.5 percent of the original ~78.8 acres of 1987 marshland) [italics ours].”

USGS’s major findings:

Dyke Marsh is a naturally-occurring freshwater marsh that started forming about 530 years ago, thus in the 15th century. It is not 5,000 to 7,000 years old as previously estimated.

The scientists estimated these total acreages for these years: ~184 (1937); ~169 (1959); ~83 (1976); ~79 (1987); ~69 (2002); and ~60 (2006).

The tidal creeks are the primary source of sediment that is delivered to and sustains the marsh.

The “post-mining marsh remnant is shrinking rapidly.”

“... storm waves driven northward up the Potomac River valley, from tropical storms and hurricanes in the summer and nor’easters in the winter, were the primary agents of marsh erosion.”

“... The erosion is decreasing the acreage of the marsh surface and thus decreasing marsh habitat for state-listed species, migratory waterfowl, and predatory birds (Bald Eagle and Peregrine Falcon).”

“Historically, the shallow western river bottom and a forest floodplain promontory south of the marsh (that extended ~1,500 feet northeastward into the Potomac River) jointly buffered most storm activity directed toward the marsh. These enabled the marsh to keep a semi-stable configuration for at least 70 years. Dredge mining before 1959 removed those protections, destabilizing the marsh and exposing it to repeated storm erosion. Also, deep mining-scar channels (>25 feet below mean low water) now exist in the western river bottom adjacent to the present shoreline, cut into what originally was emergent marsh inside the park boundary. The mining channels have become active scour channels along this stretch of the Potomac, increasing the intensity of storm erosion at the shoreline, and adding to the marsh’s instability.”

“We conclude that the marsh is not in a geologically sustainable state. ... [emphasis ours] Dyke Marsh will continue to be subjected to strong lateral shoreline erosion and stream piracy until (1) its former geological protections are restored by human intervention or (2) it is fully dismembered and eroded away by recurrent future storm activity (if left alone).”

“The minimal primary protections that likely are needed to protect and enhance natural deposition at the marsh include a functional wave break at the position of the former promontory and an effective blockage of the deep scar channels that parallel the shore line with the Dyke Marsh eastern boundary.”

The report is here: http://pubs.usgs.gov/of/2010/1269/. There is an excellent executive summary at the beginning. The lead authors are Ronald J. Litwin, Joseph P. Smoot and Milan J. Pavich, with assistance from 11 others.

Editor’s note: Look for additional articles about this important study in future issues of The Marsh Wren.
Profile of a National Park Service Official - Miguel Roberson

This is one of a series of profiles that FODM will publish introducing readers to some of the U. S. National Park Service officials with whom we work.

Miguel is an interpretative ranger for the George Washington Memorial Parkway, conducting interpretative and education programs. Miguel is our clean-up coordinator, working with volunteers to keep our park beautiful. Look for him in Dyke Marsh! We asked Miguel to tell us about himself:

I was born on March 7, 1981 in Washington, D.C. I was raised in Prince George’s County, Maryland but visited my entire family in Louisiana at least twice out of a year for almost a month’s period each visit. I attended Hampton University in Hampton, Virginia my freshman year in college in 1999, and transferred to Morgan State University in Baltimore, Maryland where I received a Bachelor of Science Degree in 2003. I majored in Telecommunications and Public Relations. I was a Tour Guide for Morgan State University. I started working for the National Park Service at Great Falls Park in July of 2003. I’ve worked at the George Washington Memorial Parkway’s Virginia District since April 2006. I enjoy fishing, traveling, being active by playing sports, riding bikes, playing/listening to music—and eating. I believe everyone and everything must eat, so I cannot help but talk about how food is related to almost everything you do. In my family, whether it’s happy times or sad times, food always has a place. I mention food through almost every program, because the Chesapeake Bay is near and dear to so many in this area. In my opinion it’s because of the Maryland blue crabs. I dedicate my work for the National Park Service all for the love of food.

2011 Dyke Marsh BBS to Start

The Dyke Marsh Breeding Bird Survey will be conducted every weekend between Memorial Day and Independence Day. We use a series of behavioral criteria to determine the breeding status of birds in the Dyke Marsh Wildlife Preserve. To participate, contact Larry Cartwright for details at 703 9413142 or prowarbler@verizon.net.

Ubiquitous “Styrofoam” Bits Litter and Harm Potomac River Shoreline

Cups, plates, coolers, trays, carryout food containers—we know them as “Styrofoam.” These single-use products are actually made of polystyrene; Styrofoam is the trademark for products made of polystyrene. The Potomac River shorelines are littered with pieces of polystyrene, from the size of cooler tops on down, much of it invisible to the human eye.

At the April 9 cleanup, two FODM volunteers worked two 12-by-12 feet areas of Dyke Marsh shoreline for an hour picking up pieces and never got it all. Polystyrene products are very brittle so they break up quickly into small pieces difficult to collect. The products are rarely recycled or composted.

Birds and other animals mistake the small pieces for food. If ingested, these bits of polystyrene can clog digestion and cause starvation or choking. “Plastics are a contaminant that goes beyond the visual... a potential contaminant to wildlife that’s more on the molecular level,” said Bill Henry of the Long Marine Laboratory, University of California, in a 2009 Science News article. Plastics, including polystyrene, are “common in the wads of undigested matter that black-footed albatrosses cough up before fledging,” he commented.

Polystyrene foam breaks down into smaller styrene units and “...the smallest of these units – the styrene monomer – is carcinogenic in mice,” reported Rachel Ehrenberg in the Science News article. Joel Baker of the University of Washington-Tacoma is quoted as saying that there is “a growing body of evidence that plastics break down in water into pieces too small to see.”

Some localities are banning polystyrene food packaging. California’s Marin County, for example, says on its website that “styrene, a compound in Styrofoam, is a known hazardous substance and a suspected carcinogen.”

Watch “Virginia’s” Eagles

Check out the activity in this bald eagle’s nest in the Norfolk Botanical Gardens. One enthusiast said on April 7, “Eaglets are just a month old, have lost their white fuzz and are growing fast and eating often. You can still tell the birth order by the differences in size.” Visit this website to see the "eaglecam":http://www.wvec.com/marketplace/microsite-content/eagle-cam.html
FODM Supports Dyke Marsh Science

Thanks to many generous contributions from members and friends, FODM is funding two projects to fill in gaps in our knowledge of the natural resources of the Dyke Marsh Wildlife Preserve. Knowledge of living things is essential in understanding the ecological value of the preserve and nature’s dynamics.

One scientist has estimated that there are upwards of 18,000 species in the preserve, including 6,000 species of insects, but only 1,000 of the insect species have been identified. Several known species of insects found in Dyke Marsh have set Virginia records.

Bees: We are helping Dr. Edd Barrows, an entomologist at Georgetown University and Director of Georgetown’s Center on the Environment, complete an analysis of bees in the Dyke Marsh Wildlife Preserve. The historical, baseline sample is from 1998 - 1999 and comprises about 5,000 bees. Only 20 percent of the species of bees are currently identified. The remaining 80 percent of bees are mostly halictid bees and need to be precisely identified. Mr. Sam Droege (U.S. Geological Survey) will co-author an anticipated publication with Dr. Barrows. When Dr. Barrows completes his work, he will make a presentation on his findings and their significance.

Albert Einstein once said, “If the bee disappears from the surface of the Earth, man would have no more than four years to live. No more bees, no more pollination . . . no more men.”

Dragonflies and Damselflies: Dr. Steven M. Roblé, a zoologist with the Virginia Natural Heritage Program of the Department of Conservation and Recreation, known as the top dragonfly expert in the state, will conduct a survey of odonata (dragonflies and damselflies) in the preserve starting in May. He also will make a presentation on his work after its completion.

Often unappreciated, insects are the “little things that run the world,” according to renowned biologist Edmund O. Wilson. They pollinate, provide food, dispense seed and aerate the soil, for example.

Thanks to all for helping us with these efforts. If you have suggestions for other areas of research FODM could support, let us know.

FODM Partners with Belle View Elementary School

FODM has partnered with the Belle View Elementary School, the Belle View Parent-Teacher Association and the National Park Service on the school’s project to create an outdoor K-6 science classroom, wetland and other habitats on school grounds. The outdoor learning laboratory will be consistent with Virginia science standards and will include teacher professional development.

The school has already made a great start planting native plants and putting up bluebird, purple martin and bat houses. They also have other bird houses and a frequent red-tailed hawk visiting the southern edge of the school grounds next to Westgrove Park. An enthusiastic group of teachers, the administration and PTA hope to add an amphitheater, a rock pile and planting beds, including a sunflower garden and a butterfly garden.

Kudos for Friends of Dyke Marsh

On February 19, 2011, Fort Hunt Patch.com named the Friends of Dyke Marsh one of five area “great non-profit organizations making a difference in our community.” The editor wrote, “As the country continues to pay attention to society’s impact on the environment, the work of the Friends of Dyke Marsh becomes even more important. The non-profit organization raises money for scientific research of the marsh and seeks to educate the public about the environmental issues facing the region.”

Patch is an online community-specific newspaper. Visit www.Patch.com and click on Virginia to find various editions in northern Virginia. Articles pertaining to Dyke Marsh appear in the Fort Hunt and Mount Vernon editions.

Many Honor Ed Risley

FODM wishes to thank the many people who so generously donated to our organization in honor of one of our founders, Ed Risley, who passed away on December 24, 2010. The Board of Directors agreed that Ed would wish that the donations be used for scientific research related to Dyke Marsh. Read the accompanying article describing some of the projects these donations are supporting.

Nature Walk - June 25

Please join us at Dyke Marsh on Saturday, 25 June, for a nature walk led by Barry Stahl, the National Park Service (NPS) Horticulturalist for the George Washington Memorial Parkway. The emphasis of the walk/talk will be on the horticulture, cultivation, care, and maintenance of recent native plantings at Dyke Marsh. Last October, four FODM volunteers, led by NPS Ranger Amanda Chidsey, planted 85 native plants between the bridge and the boardwalk, including black haw, buttonbush, elderberry, sassafras, southern arrowwood, spicebush, swamp rose mallow, and winterberry holly. Come join us and see how they’re doing this spring!

The walk will take place from 10 A.M. to noon, and we’ll meet at the entrance to the Haul Road.
Thank You Volunteers

From Eagle Scouts to Surfriders, we’ve had many volunteers out in the Dyke Marsh Wildlife Preserve this spring. On March 26, members of Surfriders DC came out in 4 canoes, 3 kayaks, and one stand-up paddle-board to clean up the Dyke Marsh shoreline, and came back with a mountain of bags and tires. When 600 Carl Sandburg Middle School students visited in April, FODMers helped. Two cleanups brought out young and old. We always need more, especially people to help with controlling invasive plants. Contact Ned Stone at nedstone@verizon.net if you can help.

Three New Life Members Join FODM

Please join us in welcoming our three new Life Members Helen Large, Barbara Perry and Sandra Sanborn. New annual FODM members are Belle View Elementary School, Carolyn Burnett, Jane Edwards, Mary Feeherry, Su Kim, Steve Kimbel, Jan Kool, Rob Krupicka, Mark & Johanna Lapiere, Mary Lawson, and Steven Nixon. Is it time to renew your membership in FODM? If your mailing label says 10 or earlier to the right of your name, renew NOW, so you’ll be up-to-date and continuing to support The Friends of Dyke Marsh. Thank you!

Volunteer for Research

The National Park Service could use several people to help with sediment research. You need to be able to help carry equipment, walk through cattails and mud and another one could take pictures, interview and write an article. Contact Erik Oberg at 703-289-2500.

Save September 14 for Bees

Bees are critical “players” in our ecology. On September 14, Alonso Abugattas, Manager of Long Branch Nature Center, Arlington, Virginia, will give a talk to FODMers on native bees and how to attract them to your yard. There are more than 1,000 species of bees in the eastern U.S. Some live in colonies; others are solitary. The next issue of The Marsh Wren will provide more details about this presentation, to be held at FODM’s fall quarterly meeting.

U. S. Park Police, Emergency Number: 202-619-7300

Sunday Morning Bird Walks

Bird walks are held every Sunday morning, all year. Meet at 8 a.m. in the south parking lot of the Belle Haven picnic area. Walks are led by experienced birders and all are welcome to join us.

FODM Membership - Dues and Contributions

Support the Friends of Dyke Marsh by becoming a member or renewing your membership. Benefits include the Friends’ quarterly publication, The Marsh Wren; quarterly membership meetings with knowledgeable speakers; Sunday morning bird walks and notification of activities in and around the marsh. Most importantly, your membership lends your voice in support of Dyke Marsh, our local natural treasure. To renew your membership, please send your tax-deductible contribution, payable to FODM, P.O. Box 7183, Alexandria, Virginia 22307. The annual dues are $15.00 per household; $250.00 for life membership for an individual. Additional contributions are most welcome. The mailing label on this Marsh Wren indicates membership status. If the date indicated is 09 or 10, time to send in your renewal dues. For those with 09, renewal should be for 2 years (2010 and 2011) or $30. If the number is 10, a $15 renewal keeps you up-to-date. If your label says 11, you’re good for the current year. Finally, if the number is over 11 or if the label shows a *, thanks for your continuing support of the work of FODM.

FODM Membership - Dues and Contributions

DUES AMOUNT.......................... $ _____
ADDITIONAL CONTRIBUTION........ $ _____
TOTAL AMOUNT ENCLOSED.......... $ _____
NAME _______________________________
ADDRESS _____________________________
CITY_____ STATE __ ZIP ____
TELEPHONE NUMBER ___________________
EMAIL ADDRESS ________________________

Please address any questions or comments about The Marsh Wren to Dorothy McManus and about membership to Barbara Perry. You may contact them by mail at FODM, P.O. Box 7183, Alexandria, Virginia 22307-7183, by telephone or by email (see page 2).
BY GLENDA BOOTH

2011 is the “Year of the Turtle” for many conservationists who want to address the precipitous decline in the number of both fresh and saltwater turtles and tortoises. Habitat loss and degradation, human population pressures and road mortality are the major threats. Reptiles and amphibians are experiencing “exceptional declines among North American vertebrates,” reports Partners in Amphibian and Reptile Conservation (PARC). To learn more visit http://www.parcplace.org.

One such species experiencing a decline is the Bog Turtle. One of North America’s smallest turtles, it is only 3-3.5 inches long. The head features a yellow or orange patch. Protected under the Endangered Species Act, it faces several threats to its existence, mainly through loss of its wetland habitat to development and encroachment of non-native vegetation. Poaching for the illegal pet trade is also a threat to this species. Its range includes southwestern Virginia.

You can help another Virginia species by reporting any sightings of Eastern Box Turtles at the Virginia Herpetological Society’s website www.virginiaherpetologicalsociety.com/.

The Bog Turtle is a “threatened species.” Photo courtesy USFWS.

Ways to help turtles and amphibians:
• Avoid using pesticides.
• Discourage people from releasing non-native exotic pets into the environment (It’s also illegal).
• Avoid allowing domestic pets to run loose when outside.
• Discourage people from capturing wild reptiles and amphibians to keep as pets, even temporarily.
• Help dispel myths about herps and discourage fears about snakes.
• Create habitats around your home.
• Report pet store violations (e.g., native herps being sold).
• Participate in citizen programs.
• Help with the Virginia Frog and Toad Call Survey, part of the North American Amphibian Monitoring Program. Contact Ryan Niccoli at the Virginia Department of Game and Inland Fisheries for details.
• Sign up on Frogwatch USA to monitor frogs at www.aza.org/frogwatch/.

The Friends of Dyke Marsh
P.O. Box 7183
Alexandria, VA 22307-7183