

A Survey of the Amphibians and Reptiles
of Dyke Marsh Wildlife Preserve in Alexandria, VA

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Introduction

Dyke Marsh Wildlife Preserve (DMP) is located about 10 km south of National Airport along the Potomac River in Alexandria VA and is managed by the U.S. National Park Service (NPS). The preserve is approximately 196 hectares and consists of three main habitats: tidal freshwater marsh, floodplain, and swamp forest. The preserve is bordered to the east by the tidal Potomac River and to the west by a major 4 lane commuter highway: the George Washington Memorial Parkway. The preserve is also surrounded by a heavily used bike trail, picnic area, and boat launch/marina.

Over 360 species of plants have been recorded at DMP. (NPS DMP website) The dominant species of the tidal freshwater marsh is the narrow-leafed cattail *Typha latifolia*. Other species associated with the tidal marsh include: arrow arum *Peltandra virginica*; pickerel weed *Pontederia cordata*; sweetflag *Acorus calamus*; spatterdock *Nuphar advena*; and northern wild rice *Zizania palustris*. Flora in the floodplain includes: swamp rose *Rosa palustris*; button bush *Cephalanthus occidentalis*; sweet gum *Liquidambar styraciflua*; and red maple *Acer rubrum*. The swamp forest includes a variety of native trees and shrubs including: green ash *Fraxinus pennsylvanica*; pumpkin ash *Fraxinus profunda*; and spice bush *Lindera benzoin*. Invasive exotic plants are a major problem at the preserve. Non-native species include: English ivy *Hedera helix*; Japanese honeysuckle *Lonicera japonica*; and porcelainberry *Ampelopsis brevipedunculata*. (FODM brochure)

Past human influences on DMP included the diking of the marsh in the early 1800's, farming, and commercial dredging and dumping in the 1960's. (FODM brochure) Current negative human impacts on the preserve include boat wakes eroding the marsh, illegal poaching of turtles (pers comm Ned Stone), pollution from urban run-off and the Blue Plains Waste Treatment Plant, and the introduction of exotic plants and animals, including Chinese soft-shell turtles *Pelodiscus sinensis* (Abugattus 2012).

Study Sites

Site 1- Brambles Aplenty/Former House Site (38.778037,-77.050327)

This area was sandwiched between the picnic area to the north, the marina to the east, the parking lot to the west and the access road to the south. A feral cat colony lives here along with a tangle of vegetation including poison ivy *Toxicodendron radicans*, multiflora rose *Rosa multiflora*, and a variety of exotic vines.

Site 2- Haul Road East Side (38.771245,-77.049447)

Beaches and freshwater tidal marsh land are the main characteristics of this site. Tangles of exotic vines and tidal detritus piles were also abundant.

Site 3 – Haul Road West Side (38.770175,-77.051464)

Floodplain and swamp forest are the primary habitats in this site.

Site 4- Pipeline Bay/Swamp Forest Area (38.758212,-77.047666)

Tidal freshwater marsh, swamp forest, and floodplain are all represented in this site.

Site 5 – Kayak Trip (38.768518,-77.047709)

Open tidal river, freshwater tidal marsh, and swamp forests were all explored by kayak in this area.

Materials and Methods

The survey took place on Thursday 3 May 2012. The day was divided into three parts: a 3 hour terrestrial survey in the morning; a 3 hour water survey by canoe/kayak in the afternoon and a 1 hour frog call survey after sunset. Approximately 45 volunteers participated: 30 in the morning; 10 in the afternoon; and 10 in the evening. The survey volunteers included NPS biologists; Fairfax County Park Authority and Northern Virginia Regional Park Authority naturalists and biologists; U.S. Fish and Wildlife Service biologists; Master Naturalists; Friends of Dyke Marsh (FODM) members and local residents who were interested in the wildlife found in their neighborhood.

For the morning terrestrial survey, the group was divided into four teams of approximately 8 people. Each team was assigned a different terrestrial site to survey. Surveying consisted of: visual search, turning cover objects, and listening for calling frogs. The afternoon kayak survey consisted of visual search and listening for calling frogs. The night time frog call survey consisted of listening for calling frogs and visual searching with flashlight along Haul Road in the middle of Sites 2 and 3.

Results

Total Species Found: 16

Amphibians

Frogs

1. Northern Green Frog *Lithobates clamitans melanota* – 7

Reptiles

Lizards

1. Common Five Lined Skink *Plestidon fasciatus* – 6

Snakes

1. Eastern Worm Snake *Carphophis amoenus amoenus* - 1
2. Common Water Snake *Nerodia sipedon sipedon* – 24
3. Rough Green Snake *Opheodrys aestivus* - 1
4. Eastern Rat Snake *Pantherophis alleghaniensis* – 2
5. Northern Brown Snake *Storeria dekayi dekayi* – 2
- *6. Eastern Garter Snake *Thamnophis sirtalis sirtalis* – 1

Turtles

1. Eastern Snapping Turtle *Chelydra serpentina serpentina* - 3
2. Eastern Painted Turtle *Chrysemys picta picta* - 1
3. Northern Red-bellied Cooter *Pseudemys rubiventris* – 2
4. Eastern Musk Turtle (Stinkpot) *Sternotherus oderatus* - 1

5. Eastern Box Turtle *Terrapene carolina carolina* - 2
 6. Red Eared Slider *Trachemys scripta elegans* - 3
 7. Yellow Bellied Slider *Trachemys scripta scripta* - 1
 8. Yellow Bellied Slider X Red Eared Slider *Trachemys scripta scripta* X *Trachemys scripta elegans*
- Unidentified Basking Turtles - 50+ on kayak trip

*Note: The Eastern Garter Snake *Thamnophis sirtalis sirtalis* included in this list was found on 22 March 2012 in a “pre-survey” of the site.

Annotated Checklist

Frogs

1. *Lithobates clamitans melanota* (Northern Green Frog) -

Four green frogs were seen and/or heard calling in the marsh near Pipeline Bay in Site 4. One green frog was heard calling in the marsh under a bridge along Haul Road and 3 more were heard calling in the marsh in Site 2.

Lizards

1. *Plestidion fasciatus* (Common Five Lined Skink) -

One dead five lined was found on a bike path with a squished tail in Site 4. Three skinks were seen basking on logs on the beach along Haul Road in Site 2; and 2 skinks were seen in the wetlands of Site 3.

Snakes

1. *Carphophis amoenus amoenus* (Eastern Worm Snake) -

The one worm snake, found at Site 4, was described as a “huge monster, he's the biggest I've ever seen” by Alonso Abuggatus. It was estimated to be at least 30.48 cm long.

2. *Nerodia sipedon sipedon* (Common Water Snake) -

By far the most commonly seen snake in our survey. This species was seen at all five sites: 4 at Site 1; 6 at site 2; 7 at Site 3; 2 at Site 4, and 5 on the kayak trip in Site 5. They were all found on the move terrestrially and aquatically or basking in the open.

3. *Opheodrys aestivus* (Rough Green Snake)

One rough green snake was seen on the move in vegetation in Site 3. The snake was not photographed as it disappeared too quickly for the spotter to capture.

4. *Pantherophis alleghaniensis* (Eastern Rat Snake)

One rat snake was seen crawling in a small tree between the marsh and the path in Site 2 and one was seen crawling in open in Site 1.

5. *Storeria dekayi dekayi* (Northern Brown Snake)

One brown snake was found under driftwood on the edge of the beach in Site 2 and one dead brown snake was found at the parking lot of Site 4.

6. *Thamnophis sirtalis sirtalis* (Eastern Garter Snake)

One Eastern garter snake was found basking in the open in Site 2 on our pre-survey scouting trip on 22 March 2012.

Turtles

1. *Chelydra serpentine serpentine* (Eastern Snapping Turtle)

One hatchling snapper was found crossing the path at in Site 2. Two adults were seen in the water at

Site 4.

2. *Chrysemys picta picta* (Eastern Painted Turtle)

One Eastern painted turtle was sighted and confirmed by the crew at Site 4. More painted turtles were likely seen, especially on the kayak trip in Site 5, however confirming the ID of the basking turtles on the kayak trip was extremely difficult for this survey leader.

3. *Pseudemys rubiventris* (Northern Red-bellied Cooter)

At least two red-bellied sliders were seen during survey, confirmed by the crew at Site 4. Many more large, basking turtles were sighted during the kayak trip, but I could not confirm their species.

4. *Sternotherus oderatus* (Eastern Musk Turtle, aka Stinkpot)

One stinkpot/musk turtle was found crawling through a very shallow stream area in the swampy marsh area of Site 4.

5. *Terrapene carolina carolina* (Eastern Box Turtle)

Both Eastern Box turtles were found at Site 1. One was found just off the bike path and the other was in the glade area.

6. *Trachemys scripta elegans* (Red Eared Slider)

Two red eared sliders were seen basking in Site 4; one red eared slider was ID'd by John White after I sent a picture to him of one of the turtles seen in Site 5 on the kayak trip. More red-ears were most likely seen, but not ID'd.

7. *Trachemys scripta scripta* (Yellow Bellied Slider)

One yellow bellied slider was identified in the marsh at Site 4. More were probably seen during the kayak trip into Site 5.

Discussion

All of the 15 species found on this survey were expected in this area. No species represented new county or park records.

It is difficult to ID basking turtles covered in mud and algae in an area where there are four species with similar sizes and markings (5 if you count the inter-grade.). To get a better understanding of the species of DMP, turtle traps should be used so that up close inspection and positive ID of the animals can be made.

The most remarkable aspect of this survey was the dearth of amphibians. In an area seemingly perfectly suited for *Lithobates sp.*, only 7 individuals of ONE species was found: *Lithobates clamitans melanota*. Fifty people spent morning, afternoon, and night in a large marsh without seeing or hearing any amphibians except for 7 green frogs.

The morning of the survey started with overcast skies and cool temperatures around 15 C, however, as the day progressed, the skies cleared and the temperature rose to a high of 27 C. The pressure was 76.4794 centimeters. The dew point was 14 C. Winds were light at about 11.5 kph. It was 2 days before a "super" moon.

When I arrived home that night in Annandale at 10:30 pm, plenty of *Hyla chrysoscelis* and *Anaxyrus fowleri* were calling in my neighborhood.

The nearby sewage treatment plant that dumps raw sewage into the Potomac during heavy rain and the growing population of the introduced *Channa argus* (Northern snakehead fish) are both factors in the ecological health at DMP.

I believe more nighttime amphibian surveys should be conducted at DMP to verify if this was just a “bad amphibian night” or if the amphibian population at the preserve is in trouble.

Literature Cited

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Acknowledgements

Special thanks to: Glenda Booth and Brent Steury for helping to organize the survey; Erik Oberg and Susan Watson for help in obtaining our NPS and VDGIF permits; Charles Smith, Mike McCaffery, and the whole FCPA and NVRPA crew; Kyle Loucks for driving all the way from PA for this survey (!); Alonso Abugattus for being Alonso; John White for ID'ing a turtle in a photo for me; and all the people who volunteered their time to search for herps in poison ivy, mud, muck, and sticker bushes. And a final, very special thanks to Ned Stone (DMP caretaker and guru) – for ferrying me around in his kayak since my arm injury prevented me from paddling. I literally could not have gone out into the marsh without you Ned.