

Results of the 2013 HerpBlitz at Dick Cross Wildlife Management Area, Mecklenburg County, Virginia

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Introduction

The eighth annual HerpBlitz was conducted at Dick Cross Wildlife Management Area (WMA). The Wildlife Management Area is named for a former Executive Director of the Department of Game and Inland Fisheries. It was selected due to the limited number of surveys conducted in this county and in south central Virginia in general. This location was also selected due to its proximity to the most northern location of *Eurycea chamberlaini*, which has been found 21 km south of Buggs Island Dam in Vance County, North Carolina (Hoffman, 2012). Finding this species would represent a new state record.

Dick Cross WMA is in Mecklenburg County on the north side of the Roanoke River. It comprises 567 ha (1400 ac) of converted cattle farm. This property is found in the Piedmont physiographic province and has an elevation of 60 – 90 m (200 – 300 ft). Included within the confines of the property are vernal pools, agricultural fields, ephemeral and perennial streams, mature mixed hardwood and pine forest, and bottom land bordering the Roanoke River and Allen Creek. One hundred sixty-five acres of wetland impoundments created on the property serve as waterfowl habitat. Allen Creek winds through the eastern third of the WMA before forming the southeastern border.

Materials and Methods

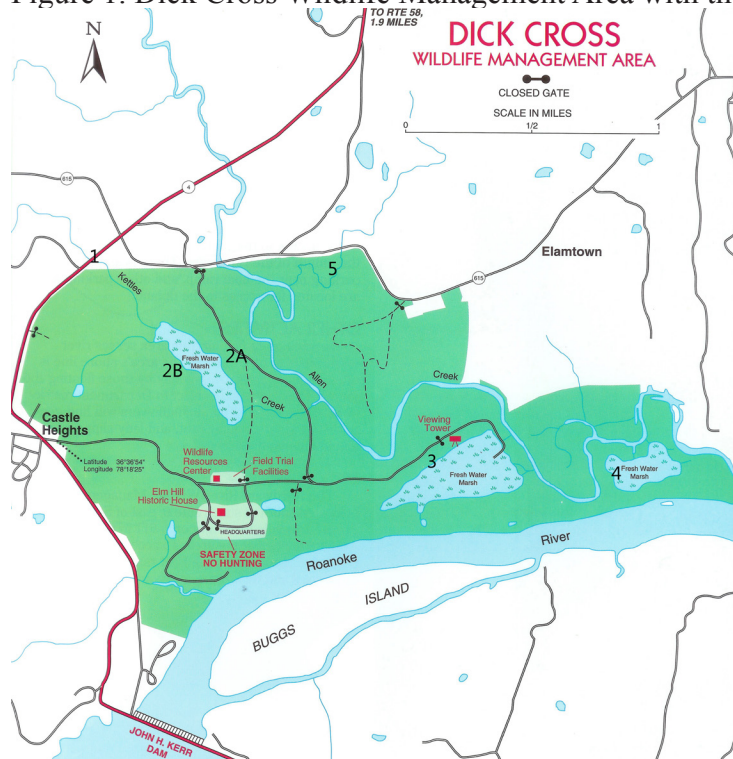
Sixteen volunteers participated in the Herp Bioblitz from 7-9 June 2013 using multiple collecting methods to find amphibians and reptiles. These methods included visual observation, listening for calling anurans, hand capture, and overturning cover objects such as logs and boards with snake hooks. Turtle traps, each baited with sardines, were positioned in several points of the freshwater marsh at Site 3. All captured animals were observed to identify possible malformations, injuries or disease, and other unique markings and characteristics, and released at the point of capture. Digital photos were taken of many of the captured animals and GPS coordinates of locations for many specimens were recorded. Survey group leaders summarized and submitted all relevant data on VHS survey group data sheets.

Study Sites:

Five major areas of the Dick Cross Wildlife Management Area were surveyed. All were near water to increase chances of finding both amphibians and reptiles. Most had deciduous forests surrounding them. The sites are shown below in Figure 1.

1. Route 4 crossing Kettles Creek: Kettles Creek at the point it crosses under Route 4, just SW of Co. Rt. 615 in an area where the Creek forms a freshwater marsh. Surveyed on the evening of 7 June 2013. ($36^{\circ} 37' 33.08''\text{N}$, $78^{\circ} 18' 14.65''\text{W}$)
2. Freshwater Marsh #1: The western most of three freshwater marshes (Hundley Pond) on the Wildlife Management Area, north of the Wildlife Resources Center. Surveyed on 8 June 2013. 2A is the eastern side of Hundley Pond ($36^{\circ} 37' 12.05''\text{N}$, $78^{\circ} 17' 37.97''\text{W}$), 2B is the western side of Hundley Pond ($36^{\circ} 37' 9.22''\text{N}$, $78^{\circ} 17' 47.87''\text{W}$). The margins of the pond were surveyed using visual searches, dip netting, and overturning cover objects. The margins of the pond included forested areas and open grassy meadows.
3. Freshwater Marsh #2: The central of three freshwater marshes on the Wildlife Management Area, east of the Wildlife Resources Center. Surveyed on 8 June 2013 ($36^{\circ} 36' 52.01''\text{N}$, $78^{\circ} 16' 43.62''\text{W}$). There was a large area of submerged vegetation in addition to open water. There was a road on the north side of the pond and a deciduous forest.
4. Freshwater Marsh #3: The eastern most of three freshwater marshes on the Wildlife Management Area, due east of Freshwater Marsh #2. Surveyed on 8 June 2013 ($36^{\circ} 36' 49.95''\text{N}$, $78^{\circ} 16' 2.48''\text{W}$). There were cattails and small shrubs in the shallows, in addition to some open water. The pond was surrounded by deciduous forest and a grassy/dirt road.
5. Along an unnamed tributary to Allen Creek, south of where the tributary crosses Co. Rt. 615: Surveyed on 9 June 2013 ($36^{\circ} 37' 35.47''\text{N}$, $78^{\circ} 17' 9.18''\text{W}$). The floodplain of the creek, going through a deciduous forest was surveyed.

Figure 1. Dick Cross Wildlife Management Area with the five survey sites indicated.



Survey of Dick Cross WMA

Site 1 was surveyed on the evening of 7 June by two volunteers. Sites 2A, 2B, 3 and 4 were surveyed on 8 June by six to thirteen volunteers. Site 5 was surveyed on 9 June by six volunteers. The number of person-hours per survey site is listed below in Table 1.

Table 1. Survey effort per site.

Site	1	2A	2B	3	4	5
# Surveyors	2	9	7	13	6	6
Hours surveyed	0.25	3.0	3.0	1.25	2.0	0.8
Person Hrs of survey effort	0.5	27.0	21.0	16.25	12.0	4.8

Results

A total of fifteen amphibian and fourteen reptile species were found at Dick Cross WMA during the June 2013 HerpBlitz for a total of twenty-nine different species (Table 2). Of the fifteen amphibians, there were eleven anurans and four salamanders. Of the fourteen reptiles, there were seven snakes, two lizards, and five turtles. The VHS online list of herps includes 53 different species which had been previously vouchered for Mecklenburg County. Our survey found 27 of the 53, or more than half of the reported species. We also added two additional species, *Hyla cinerea* and *Kinosternon subrubrum*, as new county records .

Table 2. List of species observed at each site in the Dick Cross Wildlife Management Area.

** New record for Mecklenburg Count. * Second record for Mecklenburg County.

Species/Site	1	2A	2B	3	4	5	Total
Amphibians							
<i>Ambystoma opacum</i>		4		1			5
<i>Acris crepitans</i>	1	6	8	35			50
<i>Anaxyrus a. americanus</i>		3	5	2			10
<i>Anaxyrus fowleri</i>		1		4			5
<i>Desmognathus sp?</i>						1	1
<i>Gastrophryne carolinensis</i>	1			3			4
<i>Hyla chrysoscelis</i>	20			6			26
<i>Hyla cinerea</i> **	50	2	3	100	6		161
<i>Hyla versicolor</i>	30		1	20			51
<i>Lithobates catesbeianus</i>				3	1		4
<i>Lithobates clamitans</i>		2		7	6		15
<i>Lithobates spenocephalus</i>		2	6	5	21	5	39
<i>Notophthalmus viridescens</i>		4	1	1			6
<i>Plethodon cylindraceus</i>		1	1	1		1	4
<i>Pseudacris crucifer</i>		2	39	12	4		57
Reptiles							
<i>Carphophis a. amoenus</i>		1	2				3
<i>Chelydra serpentina</i>				2			2
<i>Chrysemys p. picta</i>			2	1			3

<i>Coluber c. constrictor</i>		2		3			5
<i>Diadophis punctatus</i>				1			1
<i>Kinosternon s. subrubrum**</i>		1		1			2
<i>Nerodia s. sipedon</i>				2		1	3
<i>Opheodrys aestivus</i>	1						1
<i>Pantherophis alleghaniensis</i>			1				1
<i>Plestiodon inexpectatus</i>							1
<i>Scincella lateralis</i>					2		2
<i>Terrapene c. carolina</i>		2					2
<i>Trachemys s. scripta *</i>				2			2
<i>Virginia v. valeriae</i>			1				1
Total	103	33	70	212	40	8	467

Annotated Checklist:

Amphibians:

Anurans:

Acris crepitans: (Sties 1, 2A, 2B, and 3) One Eastern Cricket Frog was calling from the marsh at Site 1 on the evening of 7 June. Two adult Eastern Cricket Frogs were hopping on the forest floor along the eastern margin of the freshwater marsh at Site 2A. Several males were calling from the same marsh. Eight Cricket Frogs were observed on the western side of the marsh, two calling and six on the ground. At Site 3 there were at least 35 Cricket Frogs, many along the margin of the second freshwater marsh, and some males calling from the marsh.

Anaxyrus a. americanus: (Sites 2A, 2B, and 3) One adult and two metamorph Eastern American Toads were seen hopping on the ground around the eastern margin of the freshwater marsh at Site 2A. Five metamorphs were seen around the western side of the Marsh at Site 2B. Two subadults were found in a grassy field at Site 3.

Anaxyrus fowleri: (Sites 2A and 3) A small adult Fowler's Toad was hopping on the forest floor along the wooded margins of the freshwater marsh at Site 2A. Four adult males were observed at the second freshwater marsh (Site 3). Three were calling and the fourth was on the road running along the northern shore.

Gastrophryne carolinensis: (Sites 1 and 3) One Eastern Narrow-mouthed Toad was calling the evening of 7 June from the swamp at Site 1. There were at least 3 males calling from the thick submerged vegetation of the marsh at Site 3.

Hyla chrysoscelis: (Sites 1 and 3) Both *Hyla chrysoscelis* and *H. versicolor* were calling at Site 1. Approximately 40% were *Hyla chrysoscelis* with about 60% *Hyla versicolor*, about 20 *Hyla chrysoscelis* were calling in all at Site 1. There were several individuals calling from the marsh at Site 3.

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Hyla cinerea: (Sites 1, 2A, 2B, 3 and 4) A large chorus of at least 50 males was heard calling from the marsh at the point where Route 4 crosses Kettles Creek at Site 1 on the evening of 7 June. Several Green Treefrogs were calling from the freshwater marsh at Site 2A. Two adult males were heard calling from the western side of the marsh, and one observed on emergent vegetation. There was a large, continuous chorus of at least 100 individuals calling from the marsh at Site 3. Six adult Green Treefrogs were observed and photographed on the emergent vegetation of the third marsh at Site 4.

Hyla versicolor: (Sites 1, 2B and 3) Approximately 60% of the Gray Treefrogs, 30 in all, were *H. versicolor*, and identified by their call at the swamp at Site 1. A single male was heard calling from the freshwater marsh at Site 2B. A continuous chorus was heard at the marsh at Site 3.

Lithobates catesbeianus: (Sites 3 and 4) There were three American Bullfrogs seen along the road on the northern shore of the marsh at Site 3. A single male American Bullfrog was heard calling from the freshwater marsh at Site 4.

Lithobates clamitans: (Sites 2B, 3, 4, and 5) A metamorph Green Frog was seen in a puddle at Site 2A and a juvenile was found in the grassy meadow near the freshwater marsh. At Site 3 there were several males calling from the marsh, and one adult found on the road along the northern shore of the marsh. Six different males were heard calling from various parts of the third marsh at Site 4.

Lithobates spenocephalus: (Sites 2A, 2B, 3, 4 and 5) Two metamorph Southern Leopard Frogs were captured in the meadow areas around the eastern shore of the freshwater marsh at Site 2A. Six metamorphs were found along the western side of the marsh at Site 2B. At Site 3 there were four juveniles and an adult seen on the road along the northern shore of the marsh. Twenty-one juvenile Southern Leopard Frogs were seen, mostly in the grassy/dirt lane along the margin of the marsh at Site 4. Five adults were seen in the flood plain of the stream at Site 5.

Pseudacris crucifer: (Sites 2A, 2B, 3 and 4) Two metamorph Spring Peepers were found hopping on the forest floor in a grove of pines along the margin of the freshwater marsh at Site 2A. Thirty nine metamorph Spring Peepers were found on the forest floor on the western side of the marsh at Site 2B. Twelve metamorphs were observed near the marsh at Site 3. Four metamorph Spring Peepers were seen in the grassy/dirt lane along the margin of the marsh at Site 4.

Salamanders:

Ambystoma opacum: (Sites 2A, 3 and 4) One adult and three juvenile Marbled Salamanders were found under logs in the wooded edges of the freshwater marsh at Site 2A. A metamorph was found under a log in the forested northern shore of the freshwater marsh at Site 3.

Desmognathus sp? (Site 5) A dusky salamander was seen but not captured from under a rock in the stream at Site 5. The species could not be determined.

Notophthalmus viridescens: (Sites 2A and 3) One adult Red-spotted Newt was found under a cement block in one of the barns at the field trial facilities. Numerous larvae and one adult were dipnetted from the swamp/pond on the east side of the freshwater marsh at Site 2A. A red eft was found on the forest floor at the margin of the marsh at Site 2A. Another eft was found under a log in the forested northern margin of the marsh at Site 3.

Plethodon cylindraceus (Sites 2A, 2B, 3 and 5) One adult White-spotted Slimy Salamander was found under a log in the forested area just north of the freshwater marsh at Site 2A. Another adult was found under a log in the wooded western margin of the marsh at Site 2B. An adult was also found under a log in the wooded northern margin of the marsh at Site 3. An adult was captured from under a log in the flood plain of the stream at Site 5.

Reptiles:

Snakes:

Carphophis a. amoenus: (Sites 2A and 2B) An adult Eastern Wormsnake was found under a log in the forested margin of the freshwater marsh at Site 2A. Two adult Eastern Wormsnakes were found along the western shore of the marsh at Site 2B, one under a log, the other in a log.

Coluber c. constrictor: (Sites 2A and 3) Two adult Northern Black Racers were seen (one captured) along the margin of the meadows on the east side of the freshwater marsh at Site 2A. They were both basking when first observed. Three adults were captured while they were foraging along the margin of the marsh at Site 3.

Diadophis punctatus: (Site 3) An adult Ring-necked Snake was found under a log in the forested northern shore of the marsh at Site 3. It had a complete band around the neck and spots on the venter.

Nerodia s. sipedon: (Sites 3 and 5) Two adult Northern Watersnakes were observed foraging along the margin of the marsh at Site 3. An adult Northern Watersnake was found DOR on Route 615 where it crosses the stream at Site 5.

Opheodrys aestivus: (Site 1) A DOR juvenile Northern Rough Green Snake was found on the road where Route 4 crossed the swamp at Site 1.

Pantherophis alleghaniensis: (Site 2B) The shed skin of an Eastern Ratsnake was found on the west side of the freshwater marsh at Site 2B.

Virginia v. valeriae: (Site 2B) A juvenile Eastern Smooth Earthsnake was found under a board at the southern end of the freshwater marsh at Site 2B.

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Lizards:

Plestiodon inexpectatus: (On the Wildlife Resources Building at the staging area) One adult male Southeastern Five-lined Skink was captured on the cinderblock wall of the Wildlife Resources Building at the staging/meeting area south of the freshwater marsh of Sites 2A and 2B.

Scincella lateralis: (Site 4) Two adults were observed in the grassy/dirt lane running along the side of the third freshwater marsh at Site 4.

Turtles:

Chelydra serpentina: (Site 3) Two small adults were captured in the hoop traps set in the second marsh at Site 3.

Chrysemys p. picta: (Sites 2B and 3) One adult male Eastern Painted Turtle was found crossing a grassy meadow on the west side of the freshwater marsh at Site 2B. An adult female was found in the same area digging a nest hole. An adult female with a large leech attached to her venter was caught in a hoop trap set in the second freshwater marsh at Site 3.

Kinosternon s. subrubrum: (Sites 2A and 3) An adult Eastern Mud Turtle was found walking on the forest floor in the wooded area just north of the freshwater marsh at Site 2A. Voucher photographs were taken for deposition in the VHS Archives (Archive # 280). An adult male was captured in a hoop trap set in the marsh at Site 3.

Terrapene c. carolina: (Site 2A) The shells of one adult and one juvenile Eastern Box Turtle were found in the meadows surrounding the freshwater marsh at Site 2A.

Trachemys s. scripta: (Site 3) Two adult females were found crossing the road on the north shore of the second freshwater marsh at Site 3. They were presumably looking for nesting sites.

Discussion

Most of the species recorded during the 2013 HerpBlitz are common species found in most surveys. However, two additional species were added to the Mecklenburg County list by this survey.

It was not surprising to find *Kinosternon subrubrum*, the Eastern Mud Turtle, as it has been found in Charlotte and Halifax Counties to the west, Greenville to the east, and Prince Edward and Carroll to the north. Our record (VHS Archive #280) helps fill a hole in the distribution. Our finding of two specimens from within the wildlife management area, plus an additional unreported road crossing from outside the WMA, indicate the Eastern Mud Turtle is not uncommon in this general area. We would suggest the species can also be found in Lunenburg County to the north and Brunswick County to the east, for which there are still no vouchers.

More surprising is the finding of large numbers of *Hyla cinerea*, the Green Treefrog. While there had been heavy rains just before the HerpBlitz from Tropical Storm Andrea, which likely generated the large choruses heard (VHS Archive #279), we also had numerous visual sightings of Green Treefrogs (VHS Archive #278) on the emergent vegetation of all three freshwater marshes at the WMA. Three hypotheses can be postulated for the lack of records for this species in this county. Perhaps there is lack of previous surveys in Mecklenburg County or maybe if surveys have been conducted they were not done during the calling season. The third idea is that the species has been introduced to the area from surrounding counties or from local residents bringing the species back from visits to coastal areas. This is the first record of Green Treefrogs from the county. The nearest record is from two counties and 66 km east in Greensville County. The large population found in this new report makes it likely that Green Treefrogs may be found to the north in Lunenburg County, east in Brunswick County, or even further west in Mecklenburg or Halifax Counties.

Our report of two Yellow-bellied Sliders (*Trachemys s. scripta*) from Site 3 adds only the second record for Mecklenburg County according to the VaFWIS database. There had previously been only a single voucher for this species and our record (VHS Archive #277) provides support for the presence of the species in Mecklenburg County, which is the western extent of the species range in Virginia.

The finding of *Plestiodon inexpectatus* is not unusual as there are previous records for Mecklenburg County. With the exception of a few records from the western montane counties, this is near the western extent of their range in Virginia. Finding *P. inexpectatus*, but not the more common *P. fasciatus* or *Sceloporus undulatus*, is unusual. Both of the later appear to be common in the area (Mitchell, 1994).

Dick Cross Wildlife Management Area and Mecklenburg County more generally still have a lot of possible discoveries waiting to be found. The following section will take each taxonomic herp group and suggest possible species for herpetologists to be looking for in future surveys. Anurans which are likely to be documented in Mecklenburg County include the Eastern Spadefoot and the Upland Chorus Frog. Frogs found only one county to the east include the Pine Woods Treefrog and the Squirrel Treefrog. Surveys during tropical storms might quickly add some of these species to the county list. An interesting aspect of this area is that it is within the contact zone of the Eastern Cricket Frog and the Southern Cricket Frog (Mitchell and Reay, 1999). With news of the decline of Southern Cricket Frogs of late (Jensen, 2005; Micancin and Mette, 2009) this might be an area of interest to someone conducting research on these species. Although we did not find Chamberland's Dwarf Salamander during this survey, this is still a species which should entice some interest for herpetologists looking to add a new species to the state record. Species of salamanders which occur in neighboring counties include the Eastern Red-backed Salamander, the Mole Salamander, and the Northern Red Salamander. Salamander species found only one county to the east include the Amphiuma, the Dwarf Waterdog, and the Many-lined Salamander. Two interesting contact zones between closely related species are also found in this county. The ranges of the Southern and Northern Dusky salamanders and the Atlantic Coast and White-spotted Slimy

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Salamanders overlap in Mecklenburg County. Perhaps a herpetologist looking for a genetics project could have something interesting to discover here.

In regards to lizards, the Broad-headed Skink if found would be a county record. The Eastern Slender Glass Lizard, which is classified as a tier IV species, is documented for this county. More observations of this species would be welcomed. The spotted turtle is known for Mecklenburg County. This is a tier III species. Any addition locations found for this species should be reported.

There are six species of snakes which could possibly be added to the county species list. These include the Northern Scarletsnake, Red Corn Snake, Queensnake, Southeastern Crowned Snake, Common Ribbon Snake, and the Rough Earthsnake. Many of these previously listed snake species are secretive and fossorial so a little luck might turn one up. An alert herpetologist might even come across an Eastern Cottonmouth.

Dick Cross Wildlife Management Area has great habitat for reptiles and amphibians. We encourage wildlife managers to leave road ruts, allow debris piles to stay in place or even build them up, and allow the habitat to stay wild. Though not observed at this wildlife management area, we always discourage the use of horticultural netting. This takes a toll on snakes when they get caught in the mesh and die. Pesticides and herbicides can cause harm to wild animals. Therefore we discourage its use on management area land. We encourage managers to report any disease or malformation they observe in reptiles and amphibians. These observations are important and need to be documented. Most people have cell phone cameras and can send pictures of unusual observations. These observations could be reported to the Department of Game and Inland Fisheries or the Virginia Herpetological Society. Managers of wildlife management areas have a tough balancing job between the multiple groups who use the area. For reptiles and amphibians, these areas need to be wet, wild, and free of pesticides and herbicides.

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