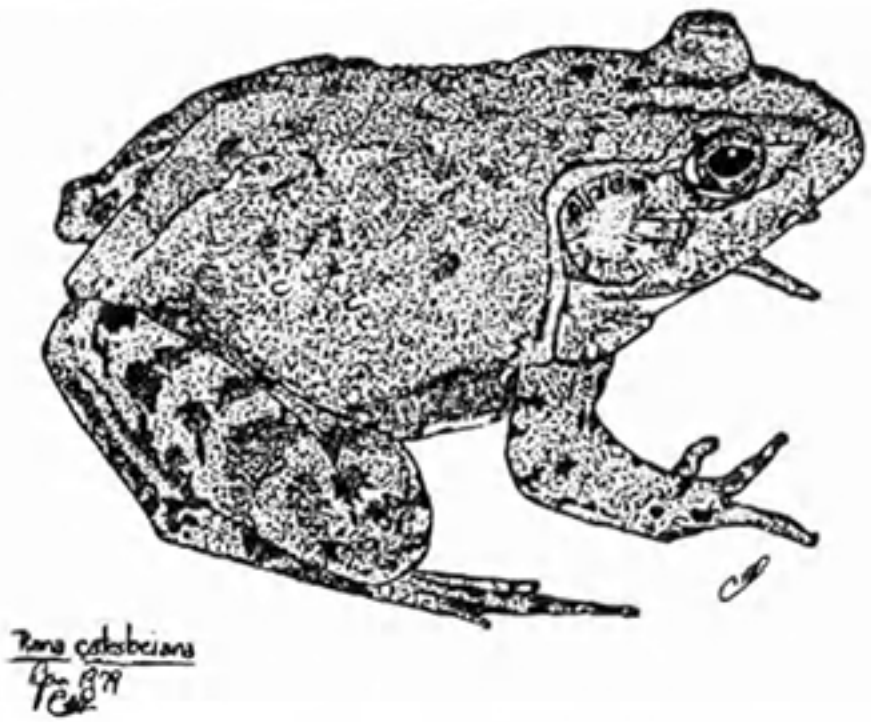
CATESBEIANA



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BULLETIN INFORMATION

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The principle function of *Catesbeiana* is to publish observations and original research about Virginia herpetology. Rarely will articles be reprinted in *Catesbeiana* after they have been published elsewhere. All correspondence relative to suitability of manuscripts or other editorial considerations should be directed to Co-editors, *Catesbeiana*, Department of Biology, Liberty University, Box 20,000, Lynchburg, VA 24506.

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(Editorial policy continued on inside back cover.)

CATESBEIANA

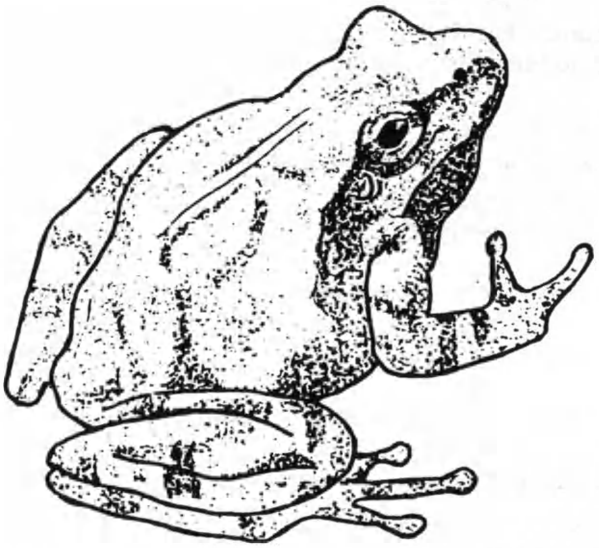
Bulletin of the Virginia Herpetological Society

Volume 15 Spring 1995 No. 1

Contents

MEETING NOTICE

The Spring 1995 VHS meeting will be held on 28-30 April 1995 at Fort A.P. Hill near Bowling Green, VA. See pages 29-31 for details.



Pseudacris crucifer
MJP '95

RECORDS OF AMPHIBIANS AND REPTILES FROM THE CLINCH RANGER DISTRICT, JEFFERSON NATIONAL FOREST

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The Clinch Ranger District of the Jefferson National Forest lies in extreme southwestern Virginia within the counties of Dickenson, Lee, Scott and Wise (plus a small parcel in Kentucky). The herpetofauna of this region of Virginia has been poorly sampled as evidenced by the lack of county records for many common species (Tobey, 1985; Mitchell and Pague, 1984; Mitchell, 1994). In 1993, the Division of Natural Heritage was contracted to conduct rare plant and animal surveys within a limited portion of the eastern section of the Clinch Ranger District. The survey area was limited to Scott and Wise Counties in the vicinity of Coeburn and Norton. Approximate boundaries of the survey area were Alternate U.S. Route 58 (north), State Route 72 (east), County Route 653 (south) and Big Cherry Reservoir (west). The highest peak in this area is High Knob at an elevation of 1287 meters. During the course of our rare animal surveys, we noted all species of amphibians and reptiles that were encountered.

Methods

We made a total of three trips to the Clinch Ranger District during 1993. Survey dates were: June 7-11, June 23-24 and September 20-24. One site (Little Stony Falls) was revisited on 13 September 1994. Survey methods included searching under logs and rocks, inspecting crevices in sandstone outcrops, dipnetting in ponds, road cruising at night and listening for calling frogs. We also operated two drift fences (25 and 30 feet in length) with pitfall buckets in a beaver meadow (elevation 967 m) along Glady Fork, Scott County, off Forest Service road 2575, 10 km SE junction of U.S. Route 23 and Alternate U.S. Route 58 in Norton.

Survey Sites

Species were recorded at 19 sites, not counting road crossing records. The names and locations of these sites are listed below and refer to numbered locations on the accompanying map.

Wise County:

1. Powell Mountain, old logging road off Forest Service Road 621 approximately 9 km SW of Norton (beaver pond and small pools)
2. Forest Service Road 621 at South Fork Powell River (two crossing sites)
3. High Knob
4. Camp Rock - outcrops along Forest Service Road 619, approximately 100 meters north of the Wise-Scott County line.
5. High Knob Lake
6. Wildlife ponds along Forest Service Road 238 near junction with Forest Service Road 2020
7. Forest Service cabin, 1 km W jct. Co. Routes 699 and 706
8. Wildlife pond 300 m N of site #7.

Scott County:

9. Little Stony Falls
10. Davey Land Branch (beaver ponds)
11. Bark Camp Lake
12. Very small wildlife pond along Forest Service Road 2575, 100 m W jct. Co. Route 706
13. Glady Fork (extensive beaver meadow)
14. Woodland sinkhole pond 0.6 km NE of Hagan Hall
15. Headwaters of tributary to Hagan Spring Branch
16. Staunton Creek in vicinity of Route 653 bridge
17. Sulphur Spring and surrounding hillsides
18. Forest Service Road 776, 2 km WNW Hagan Hall
19. Devil's Fork, Forest Service Road 619, 0.7 km W jct. Co. Route 619

Results

Thirty-six species were recorded, including 22 amphibians (14 salamanders, 8 anurans) and 14 reptiles (10 snakes, 2 lizards, 2 turtles). Significant range extensions were documented for two amphibians. Six new county records were substantiated and three additional unverified county records are reported solely on the basis of observational data. All specimens are deposited in the Virginia Museum of Natural History, except as noted below.

CLINCH RANGER DISTRICT RECORDS

Annotated Checklist of Species

Salamanders

Ambystoma jeffersonianum (Jefferson Salamander)

Site #1. On 23 September, we found approximately 10 larvae nearing transformation in two adjacent 1 m x 2 m pools in an old logging road. A relatively young 2-3 acre beaver pond was present within 50 m of these pools. Four larvae were collected and reared to transformation. This constitutes a new county record. The nearest published record in Virginia is from Wythe Co. (Tobey, 1985). The latitude of the Wise Co. site (36° 52' N) is comparable to the southernmost range limit (in Kentucky) for this species as plotted in Conant and Collins (1991).

The presence of larvae of this species so late in the year was unexpected. This species normally breeds in late winter or early spring and transforms in early to mid-summer. Therefore, either breeding occurred much later than normal or the larval period was extremely prolonged, perhaps due to a limited food supply in these very small pools.

Ambystoma maculatum (Spotted Salamander)

Site #11. Several larvae were collected on 10 June in small pools below the dam at Bark Camp Lake. Several presumably old but still recognizable jelly portions of egg masses were seen on 24 September in the swampy area at the upper end of the lake. This species was not reported from Scott or Wise County by Tobey (1985), but J.C. Mitchell and C. A. Pague have unpublished records for Scott Co. (J.C. Mitchell, pers. comm.).

Aneides aeneus (Green Salamander)

Site #9. We discovered a small colony of green salamanders in the rockface at Little Stony Falls on 9 June. Four adults and 10 juveniles were observed between 1410 h and 1445 h; only two adults were seen during a return visit to this area on the night of 20 September. One juvenile was seen on 13 September 1994 during a 1.5 h search by the second author and Dirk Stevenson.

Desmognathus fuscus fuscus (Northern Dusky Salamander)

This species was common in the survey area but not collected. It was recorded at sites 2, 9, 15, 17, and 19; and also seen near the jct. of FS 619 and FS 621.

Desmognathus monticola (Seal Salamander)

Scott Co.: Several individuals were observed at site #19 on 9 and 10 June. One adult was photographed and collected on 10 June while crossing Co. Route 653, 1.3 km E jct. Co. Route 619. This represents a new county record.
Wise Co.: One adult was observed on 8 June under a rock along FS 621 about 1 km W jct. FS 237. Seal salamanders were previously reported from Wise Co. by Tobey (1985).

Desmognathus ochrophaeus (Mountain Dusky Salamander)

Individuals were observed at sites 1, 2 and 5, but not collected. This species was not reported from Wise County by Tobey (1985), but J.C. Mitchell and C. A. Pague have unpublished records for this county (J.C. Mitchell, pers. comm.).

Eurycea cirrigera (Southern Two-lined Salamander)

This species was recorded at sites 1, 2, 5, 9, 13 (collected) and 17. It was reported (as *Eurycea bislineata bislineata*) from Wise but not Scott County by Tobey (1985). J.C. Mitchell and C. A. Pague have several unpublished records for Scott County (J.C. Mitchell, pers. comm.).

Gyrinophilus porphyriticus porphyriticus (Northern Spring Salamander)

Site #4. The head of an adult was observed protruding from a rock crevice near a spring seep on 8 June. This species was reported from Wise but not Scott County by Tobey (1985). J.C. Mitchell and C. A. Pague have one unpublished record for Scott Co. (J.C. Mitchell, pers. comm.).

Hemidactylium scutatum (Four-toed Salamander)

Site #13: Three adults were collected at the drift fence in this wetland which contains some areas of sphagnum. This constitutes a new county record and the first record from extreme southwestern Virginia (Roble and Hobson, 1995). The nearest published localities are in Giles and Montgomery Counties (Tobey, 1985); the species has also been recorded from Buffalo Mountain in Floyd County (J. C. Mitchell, pers. comm.). This record partially fills in the large range gap that is depicted in Conant and Collins (1991). One specimen has been deposited in the Carnegie Museum of Natural History, the other two are in the Virginia Museum of Natural History collection.

Notophthalmus viridescens viridescens (Red-spotted Newt)

This species was abundant in the survey area. Newts were recorded at sites 1-3, 5-8, 10, 11, 13 (collected) and 14.

Plethodon glutinosus (Northern Slimy Salamander)

This species was recorded at sites 2, 3 (collected), 5, 7, 9 and 17. On the night of 9 June one adult was observed peering from a burrow in the forest cabin lawn on several occasions before eventually venturing out at 0505 h. Slimy salamanders were previously reported from Wise but not Scott County by Tobey (1985). J.C. Mitchell and C. A. Pague have numerous unpublished records for both counties (J.C. Mitchell, pers. comm.).

Plethodon kentucki (Cumberland Plateau Salamander)

This species was recorded at sites 2, 3 (collected), 4 and 9 (collected). Approximately 30-35 individuals of this species, plus a few *P. glutinosus*, were observed by the second author and Dirk Stevenson on 13 September 1994 on and near the trail to Little Stony Falls. Most of these individuals were active on the surface. During two visits to this area in 1993 we noted a few *P. glutinosus* (but no *P. kentucki*) along the trail, but did not actively search for woodland salamanders on either occasion. J.C. Mitchell and C. A. Pague have three unpublished records for *P. kentucki* from Wise County (J.C. Mitchell, pers. comm.). The Little Stony Falls site represents a new record for Scott County.

Plethodon richmondi (Ravine Salamander)

Ravine salamanders were recorded at sites 1, 2, 3 (collected), 4 and 7.

Pseudotriton montanus (Mud Salamander)

Site #13: This species is common in the beaver meadow wetland. One larva was dug up on 11 June while installing the drift fences; a total of nine adults were collected in the pitfalls. Several additional adults and one juvenile were also seen at the drift fences. This species was not reported from Scott or Wise County by Tobey (1985), but J.C. Mitchell and C. A. Pague have one unpublished record for Scott County (J.C. Mitchell, pers. comm.).

Anurans

Bufo americanus americanus (Eastern American Toad)

Eggs and tadpoles were observed in small pools below the dam at Bark Camp Lake (site #11) on 10 June. This species was also seen at sites 2, 7 and crossing several roads, but was not collected. American toads were not reported from Scott or Wise County by Tobey (1985), but J.C. Mitchell and C. A. Pague have several unpublished records for both counties (J.C. Mitchell, pers. comm.).

Hyla chrysoscelis (Cope's Gray Treefrog)

This species was heard at sites 6, 7 and 11, as well as several farm ponds along Co. Routes 619 and 653 in Scott Co. Gray treefrogs were not reported from Wise County by Tobey (1985), but J.C. Mitchell and C. A. Pague have several unpublished records for both counties (J.C. Mitchell, pers. comm.).

Pseudacris brachyphona (Mountain Chorus Frog)

Hoffman (1981) provided extensive locality data for this species in Virginia but did not include any records for Scott or Wise Counties. Tobey (1985) plotted one record for this species in extreme northern Wise County. We found single adult males calling at two sites on the night of 10 June. Both individuals were photographed and collected.

Scott Co.: Hillside at the junction of Co. Routes 619 and 657, 13 km S Norton (1 km SE of site #19). Elevation 513 m. This constitutes a new county record.
Wise Co.: site #7 (pool in driveway). Elevation 1067 m. This site is 10 km NE of the Scott Co. locality. The nearest published locality is in southern Dickenson County (Tobey, 1985).

Pseudacris crucifer crucifer (Northern Spring Peeper)

This species was recorded at sites 1, 5, 6, 8, 11, 12, 13 (collected) and 14, as well as along several local roads. They were not reported from Scott or Wise County by Tobey (1985), but J.C. Mitchell and C. A. Pague have one unpublished record for each county (J.C. Mitchell, pers. comm.).

Rana catesbeiana (Bullfrog)

Bullfrogs were observed or heard at sites 5, 8, and 11-13, but not collected. This species was not reported from Scott or Wise County by Tobey (1985), but J.C. Mitchell and C. A. Pague have several unpublished records for both counties (J.C. Mitchell, pers. comm.).

Rana clamitans melanota (Green Frog)

Green frogs were recorded at sites 1, 5, 8, 10-12 and 13 (collected). They were not reported from Scott or Wise County by Tobey (1985), but J.C. Mitchell and C. A. Pague have several unpublished records for both counties (J.C. Mitchell, pers. comm.).

Rana palustris (Pickerel Frog)

Pickerel frogs were observed on 21 September at sites 16 and 17, but not collected. They were not reported from Scott County by Tobey (1985), but J.C. Mitchell and C. A. Pague have three unpublished records for this county (J.C. Mitchell, pers. comm.).

Rana sylvatica (Wood Frog)

Wood frogs were recorded at sites 2, 12 (tadpoles abundant; collected), 13 (collected), 14 and 17 (collected). They were also seen crossing several roads in the survey area. Wood frogs were not reported from Scott or

Wise County by Tobey (1985), but J.C. Mitchell and C. A. Pague have one unpublished record for each county (J.C. Mitchell, pers. comm.).

Turtles

Chelydra serpentina serpentina (Common Snapping Turtle)

This species was recorded at sites 5 and 13. Snapping turtles were reported from Scott but not Wise County by Mitchell (1994).
Site #5: We observed one adult swimming in High Knob Lake on 22 September. The specimen was not photographed or collected, so a record for this county remains unverified.
Site #13: Along a dirt road just beyond the south end of this wetland, we observed a nesting female at 1130 h on 11 June. The nest was subsequently predated (Lisa Nutt, pers. comm.). A mating pair (or fighting pair of males?) was observed on 22 September in a small beaver pond at the north end of this site.

Terrapene carolina carolina (Eastern Box Turtle)

Box turtles were observed at sites 1, 14 (vicinity), 17 and 18, but not collected.

Lizards

Eumeces fasciatus (Five-lined Skink)

Site #13: Several were observed and one juvenile was collected. They were reported from two sites in Scott County and one site in Wise County by Mitchell (1994).

Sceloporus undulatus hyacinthinus (Northern Fence Lizard)

Site #11: Fence lizards were observed on 10 June near the dam.

Snakes

Agkistrodon contortrix mokasen (Northern Copperhead)

Site #9: One adult was seen on 13 September 1994 by the second author and Dirk Stevenson. The snake was observed on a ledge about five feet above the ground, on the same rock face where the green salamander population was found. This observation constitutes an unverified county record for this species in Scott Co. (no records in Mitchell, 1994).

Carphophis amoenus amoenus (Eastern Worm Snake)

Site #18: One adult was collected near a sinkhole depression on 21 September. This species was previously reported from this area of Scott County by Mitchell (1994), who concluded that all Virginia worm snakes are referable to this subspecies and show no intergradation with *Carphophis amoenus helenae* (Midwest Worm Snake), which is characterized by the presence of fused prefrontal and internasal scales. However, in this specimen, the prefrontal and internasal scales are about 90% fused, with the only trace of a suture between them being restricted to a 1-2 mm region on either side of the middorsal line.

Coluber constrictor constrictor (Northern Black Racer)

We observed several DOR specimens in the survey area but made no effort to salvage them.

Crotalus horridus horridus (Timber Rattlesnake)

Site #14: One adult was observed near this site on 22 July 1993 by Lisa Nutt and Phil Stevenson (pers. comm.). Mitchell (1994) reported two previous records from Scott Co.

Diadophis punctatus edwardsii (Northern Ringneck Snake)

This species was observed at sites 2, 11 and 13 (vicinity), but not collected.

Elaphe obsoleta obsoleta (Black Rat Snake)

Several live adults were seen at site #13. A DOR specimen was also noted on FS 291 near the N end of this wetland. At least one DOR specimen was seen on Co. Route 706 in Wise Co., but it was not salvaged, so this county record remains unverified. Black Rat snakes were reported from Scott but not Wise County by Mitchell (1994).

Lampropeltis getula nigra (Black Kingsnake)

Scott Co.: A DOR specimen was salvaged by Phil Stevenson and Lisa Nutt on 22 July 1993 along Co. Route 653, 1.3 km E jct. Co. Route 680.

Lampropeltis triangulum triangulum (Eastern Milk Snake)

Wise Co.: We collected a juvenile specimen on 10 June that was crossing State Route 72, 2.5 km S jct. Alternate U.S. Route 58 in Coeburn. The site is one road kilometer beyond the Guest River bridge. This constitutes a new county record.

Nerodia sipedon sipedon (Northern Water Snake)

This species was observed at sites 13 and 16, but not collected.

Thamnophis sirtalis sirtalis (Eastern Garter Snake)

This species was observed at sites 2 and 9, as well as on several local roads including Co. Route 706 near the Eagle Knob Radio Facility (E of site #3). No speciments were collected.

Acknowledgments

The Jefferson National Forest provided funds and housing. We thank Lisa Nutt and Fred Huber of the forest service for logistical support. Lisa Nutt and Phil Stevenson assisted by checking the pitfall buckets and contributed two snake records to this report. Dirk Stevenson accompanied the second author on the September 1994 trip to Little Stony Falls and also reviewed the manuscript.

Joe Mitchell thoroughly reviewed the manuscript by carefully comparing our records with the range maps in a draft copy of his newly published book as well as his preliminary amphibian maps. He also allowed us to cite numerous unpublished amphibian county records in this paper.

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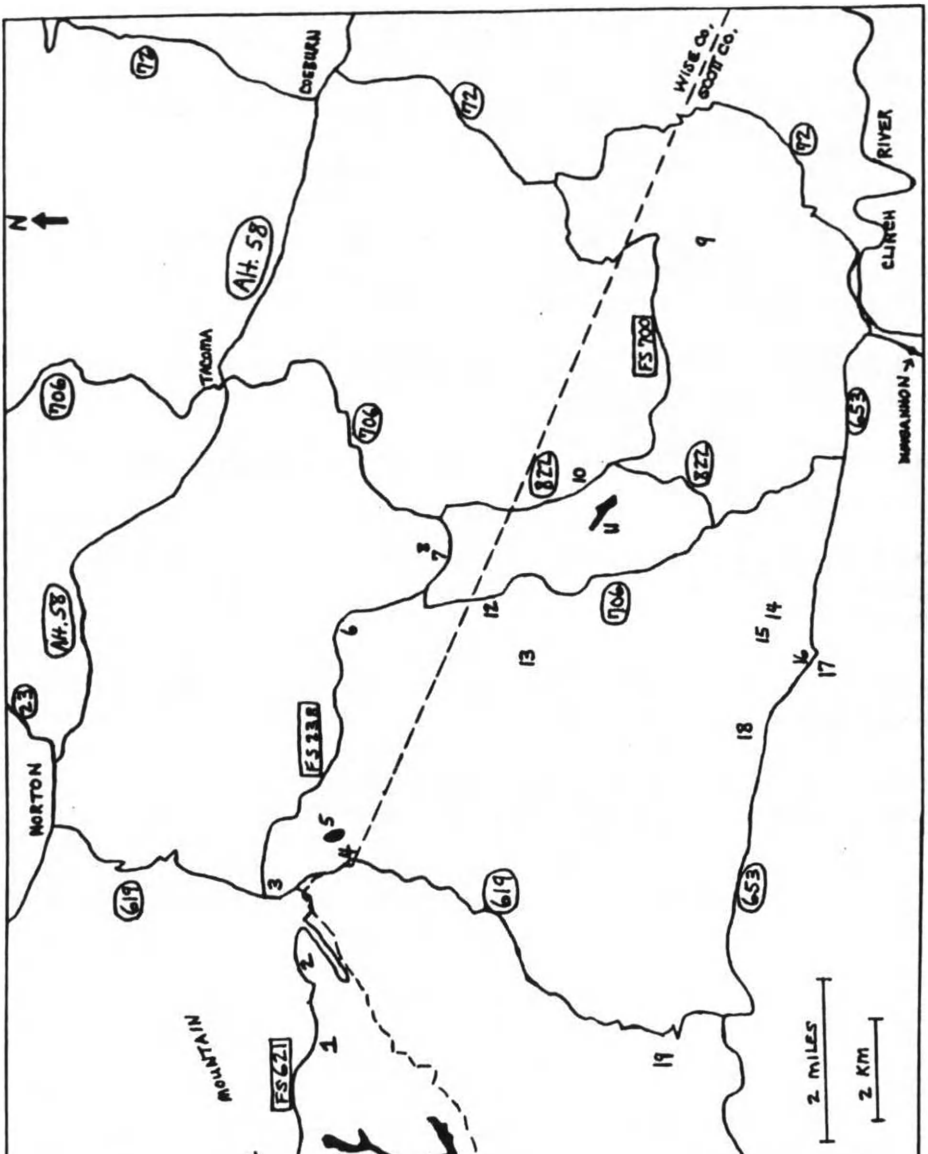
NORTON
COEBURN
TACOMA
Alt. 58
706
619
653
822
FS 700
FS 223B
FS 621
WISE CO.
SCOTT CO.
CLINCH RIVER
POWELL MOUNTAIN
BIG CHERRY RESERVOIR
2 MILES
2 KM
N

AMPHIBIANS AND REPTILES OF SUGARLAND RUN, FAIRFAX AND LOUDOUN COUNTIES, VIRGINIA: ESTIMATED NUMBERS AND COMMERCIAL VALUE

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Introduction

On 28 March 1993, a rupture in an underground pipeline caused a large spill (407,736 gallons) of number 2 oil that flowed into Sugarland Run, a second order stream that originates south of Herndon in Fairfax County and passes through northeastern Loudoun County where it enters the Potomac River at Lowes Island. The list of animals affected includes birds, mammals, fishes, amphibians, and reptiles (Research Planning, Inc., 1993; B. Stinson, VA Dept. Game & Inland Fisheries, pers. comm.). Amphibians and reptiles found dead included toads (*Bufo* spp.), gray treefrogs (*Hyla chrysoscelis* or *versicolor*), bullfrogs (*Rana catesbeiana*), green frogs (*Rana clamitans*), and box turtles (*Terrapene carolina*). Reptiles that were caught, treated, and released included northern water snakes (*Nerodia sipedon*), snapping turtles (*Chelydra serpentina*), painted turtles (*Chrysemys picta*), wood turtles (*Clemmys insculpta*), and box turtles.

In seeking financial retribution from the pipeline company, the state sought information on the populations of species that may have been affected by the oil spill. The immediate problem was that there was no information on which species occurred in Sugarland Run and its floodplain. No biodiversity surveys had been conducted for any taxonomic group prior to the oil spill. No surveys for vertebrates were conducted in the months immediately following the spill. Thus, when Virginia's Department of Environmental Quality began building its information base, there were no data for many basic survey questions. In March 1994, I was asked by the Department of Game & Inland Fisheries to generate a best estimate of the herpetofaunal species richness, their numbers, and their value for Sugarland Run and its floodplain. Although an accurate species list could be generated, estimates of the numbers of individuals was impossible because no previous baseline knowledge of the area was available. However, given these constraints, the following report, reproduced here in its entirety, was my attempt to assign a monetary value to the potential loss of amphibians and reptiles that

occurred as a result of the oil spill.

Two obvious points can be made. First, estimates derived without previous field inventories on a site are educated guesses at best. There are simply too many assumptions about population sizes that could be easily violated during the reconstruction process. Thus, the second point, that we should obtain baseline biodiversity survey data (including estimates of relative abundance) for all Virginia's watersheds is blatantly obvious. State-funded programs, as well as private initiatives, that inventory natural areas are invaluable in this regard.

Such a dearth of information leads to opportunities. Amateur and professional herpetologists should conduct such surveys wherever possible and the data and field notes made available to future researchers in permanent form, such as the Virginia Herpetological Society Archives. Watershed surveys would be excellent class projects for all grade levels. The results of such surveys could be published and made available to everyone. We should always, of course, seek ways to prevent oil spills and other environmental catastrophes from occurring in the first place. Realistically, however, such problems will continue. As concerned citizens and people interested in herpetology and the quality of our environment, we can contribute to the cleanup and mitigation process simply by doing what many of us like to do best, observe and collect herps. Maintaining consistent, accurate field notes on all observations could yield valuable information for future researchers and regulatory personnel.

Statement of the Problem

Amphibians and reptiles inhabit riparian zones in and along creek and river courses in the eastern United States. In northern Virginia, the creeks that feed into the Potomac River and their associated watersheds harbor a rich herpetofauna. At least 20 species of amphibians and 30 species of reptiles are known from the northern Virginia area (Fairfax and Loudoun counties). All are known to inhabit riparian zones in this area.

The impact of the large oil spill that occurred in Sugarland Run in March 1993 is unknown because this tributary of the Potomac River was not previously inventoried for amphibians and reptiles, nor were density estimates made after the spill. Unfortunately, a parallel study of a nearby watershed was also not conducted after the spill to obtain comparable area-specific data. Thus, the only way to estimate the numbers of amphibians and reptiles in the Sugarland Run and its

riparian zone is to use existing data from other studies. I have conducted several studies in northern Virginia and can estimate the numbers of most amphibians and several of the reptiles. The population size of the remainder of the reptiles cannot be estimated with regional data. Thus, density estimates for these species must be derived from literature sources.

The estimates provided in this report are admittedly crude. However, there are no other numbers available. These estimates should be viewed as ballpark figures that would be possible for any watershed in the northern Virginia area.

Methods

Species list -- The species listed in Table 1 were derived from two sources. The list of reptiles was based on distribution maps in Mitchell (1994). The amphibian list was derived from distribution maps in Tobey (1985) and unpublished updated maps for this fauna (J.C. Mitchell, unpublished). All of the species listed have been documented from the Piedmont physiographic region of Fairfax and Loudoun counties, Virginia.

Amphibians -- Estimation of numbers of each amphibian species was based on the results of a study conducted in Prince William Forest Park (PWFP), Prince William County, VA (J.C. Mitchell, unpublished). In this study, a drift fence array with pitfall traps (3 arms in a Y configuration with a 5 gallon bucket sunk in the ground at each end, n = 6 buckets) sampled each of four riparian zones over a 12 month period. The estimated sampling area was 100 x 20 meters of riparian habitat on one side of the adjacent stream (2,000 m^2; 5 of these areas = 1 ha). This was a removal study, so the numbers represent minimum estimates. The number of individuals per species was averaged over the four sampling sites in the PWFP study, providing the number per hectare for each species in Table 1 (2000 m^2 x 5 = 1 ha). I assumed that the width of the riparian corridor was 20 meters wide on each side (equal to the estimated sampling area above), so the total estimated area for a 500 meter (0.5 km) length of Sugarland Run floodplain riparian zone was 10,000 m^2 (1 hectare). With each ha being 500 m long and 20 m wide, the number of hectares for the each km of Sugarland Run affected by the oil spill is 2. Thus, the total number of ha for Sugerland Run is 2 x 15 km x 2 sides = 60 ha.

Turtles -- Population estimates of freshwater turtles were derived from several sources, as follows: most species (Mitchell, 1994), *Chelydra serpentina* (Bury, 1979), and *Chrysemys picta* (Mitchell, 1994 and MacCulloch and Secoy, 1983). The numbers of per stream kilometer *Clemmys insculpta*, a species listed as endangered or threatened in most of its range, was derived from Kaufmann (1992). His results were for a pristine stream, so I have taken half of the numerical value he reported as the estimate for Sugarland Run. The number for *Pseudemys rubriventris* was an educated guess based on my experience with this animal in stream and riverine systems in Virginia. The number of some species were estimated in N/ha and for others the estimate was in N/km of stream. These estimates depended on the kind of data reported in the literature.

Lizards -- Population estimates of lizards were derived from the following sources: Mitchell (1994) for *Scincella*, Fitch (1954) for *Eumeces fasciatus*, and Carpenter (1959) for *Sceloporus*. For *Eumeces inexpectatus* and *Eumeces laticeps*, I estimated the densities to be half of that for *E. fasciatus*, based on my experience with these species in Virginia. The densities of lizards were estimated in N/ha.

Snakes -- Population estimates of this group are the most difficult to obtain because of the secretive nature of these animals. Because no population studies have been conducted on these animals in Virginia, density estimates were obtained from the technical literature. These sources have been summarized by Ernst and Barbour (1989). There was no information available for *Thamnophis sauritus, Lampropeltis getula*, and *Lampropeltis triangulum*, so based on my experience with these species, I estimated their densities to be half that of their closest relatives in the same genus (*Thamnophis, Lampropeltis*). The number of some species were estimated in N/ha and for others the estimate was in N/km of stream, depending on the way the data were reported in the literature.

Estimation of Value -- Costs for amphibians were derived from the information provided by the SSAR Monetary Value of Amphibians Subcommittee (1989). Their price estimates were based on wholesale prices (retail less 40%) based on pet trade price lists available at the time. The costs of amphibians (and reptiles) have, however, increased substantially since 1989, largely because of the tremendous increase in

demand for these animals in the pet trade. The rate of inflation for 3 species I found in a 1994 price list (see below) indicated increases of 2.5 to 7 times the 1989 price. Therefore, to be conservative I have simply doubled the 1989 price for each species of amphibian in Table 1.

There is no comparable list of prices for reptiles. However, I consulted a recent commercial price list (Dec. 1993; Hogtown Herpetological Supply, Gainesville, FL) for retail prices for many species. For each species in Table 1 I used the estimated wholesale price (retail less 40%) which was determined to be in line with the methods used in SSAR Monetary Value of Amphibians Subcommittee (1989). For reptilian species for which there were no listings, I used the lowest commercial price available ($10.00 less 40%). The prices listed in Table 1 reflect the demand the public has placed on these animals.

NOTE: the prices listed in Table 1 do not include estimates for amphibian larvae (e.g., overwintering ranid tadpoles and marbled salamander larvae) nor for reptile eggs (e.g., overwintering turtle eggs). Thus, because the estimated costs would have been substantially more if these life history stages were included, the total estimated monetary value of the amphibian and reptilian faunas is conservative.

Conclusions

Sugarland Run has most certainly harbored a rich herpetofauna in the past. Although it has never been adequately inventoried, it is possible to provide a reasonably accurate list of species that occur there. This is based on the type of habitats, species known for the area, and estimated densities at which these species are reported to occur at other sites. This list (Table 1), along with the estimates of population sizes and numbers found in Sugarland Run, indicate that these species constituted a valuable natural resource based on commercial values alone. These values do not take into account their ecosystem functions and values as aesthetic resources. Thus, the estimated monetary value of these animals ($870,131) is probably underestimated by several orders of magnitude.

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Table 1. Amphibians and reptiles known to occur in the vicinity of Sugarland Run, Fairfax and Loudoun counties, Virginia. Numb. = estimated number of each species per hectare or kilometer of stream, N-SR = total number of each species for Sugarland Run, Price = dollar (U.S. $) value per individual (see text for derivation of these values), and TOTAL = total $$ value for the estimated numbers for each species in Sugarland Run. N-SR numbers and monetary figures are rounded to the nearest dollar.

Species	Numb.	N-SR	Price	TOTAL
Frogs				
Bufo americanus americanus	125/ha	7500	1.00	$7500
Bufo woodhousii fowleri	145/ha	8700	1.00	8700
Acris crepitans crepitans	22.5/ha	1350	0.50	675
Hyla chrysoscelis	15/ha	900	2.00	1800
Hyla versicolor	15/ha	900	2.00	1800
Pseudacris crucifer crucifer	43.5/ha	2610	1.00	2610
Pseudacris triseriata feriarum	35/ha	2100	0.50	1050
Rana catesbeiana	15/ha	900	4.00	3600
Rana clamitans melanota	615/ha	36900	2.00	73800
Rana palustris	427.5/ha	25650	1.00	25650
Rana sylvatica	239/ha	14340	2.00	28680
Salamanders				
Ambystoma maculatum	57.5/ha	3450	3.00	10350
Ambystoma opacum	58.5/ha	3510	3.00	10530
Eurycea bislineata	34/ha	2040	0.50	1020
Eurycea longicauda guttolineata	31.5/ha	1890	0.50	945
Hemidactylium scutatum	5/ha	300	4.00	1200
Plethodon cinereus	1350/ha	81000	0.50	40500
Plethodon cylindraceus	17.5/ha	1050	2.00	2100
Pseudotriton ruber ruber	5/ha	300	2.00	600
Notophthalmus v. viridescens	26.5/ha	1590	2.00	3180
Turtles				
Chelydra serpentina serpentina	1.2/ha	72	12.00	864
Chrysemys picta picta	11.2/km	168	6.00	1008
Clemmys guttata	40/ha	2400	30.00	72000
Clemmys insculpta	64.5/km	968	100.00	96800
Pseudemys rubriventris	est. 5/ha	300	6.00	1800
Terrapene carolina carolina	4.4/ha	264	12.00	3168
Sternotherus odoratus	145/ha	8700	6.00	52200

Lizards				
Sceloporus undulatus hyacinthinus	86/ha	5160	5.00	25800
Eumeces fasciatus	123/ha	7380	5.00	36900
Eumeces inexpectatus	61/ha	3660	5.00	18300
Eumeces laticeps	61/ha	3660	6.00	21960
Scincella lateralis	400/ha	24000	3.00	72000
Snakes				
Carphophis amoenus amoenus	60/ha	3600	6.00	21600
Coluber constrictor constrictor	1.5/ha	90	6.00	540
Diadophis punctatus edwardsii	77/ha	4620	6.00	27720
Elaphe guttata guttata	0.01/ha	1	30.00	30
Elaphe obsoleta obsoleta	1/ha	60	18.00	1080
Heterodon platirhinos	0.5/ha	30	21.00	630
Lampropeltis c. rhombomaculata	0.38/ha	23	21.00	483
Lampropeltis getula getula	0.19/ha	12	36.00	432
Lampropeltis triangulum triangulum	0.19/ha	12	51.00	612
Nerodia sipedon sipedon	18.5/km	278	6.00	1668
Opheodrys aestivus	215/ha	12900	6.00	77400
Regina septemvittata	91/km	1365	6.00	8190
Storeria dekayi dekayi	70/ha	4200	6.00	25200
Storeria o. occipitomaculata	31/ha	1860	6.00	11160
Thamnophis sauritus sauritus	8.8/ha	528	6.00	3168
Thamnophis sirtalis sirtalis	17.6/ha	1056	6.00	6336
Virginia valeriae valeriae	114.5/ha	6870	6.00	41220
Agkistrodon contortrix mokasen	18.8/ha	1128	12.00	13536
TOTAL AMOUNT				$870,131

FIELD NOTES

Thamnophis sirtalis sirtalis (Eastern Garter Snake). VA: Accomack Co., National Aeronautics and Space Administration (Wallops Flight Center), 2.1 km SE of Assawoman, 0.1 km SE of Wallops Island Gate, 6 September 1994, Christopher S. Hobson and Dirk J. Stevenson.

A juvenile specimen was found DOR on the Wallops Island entrance road near the west end of the causeway. The collection site is on the mainland adjacent to a large brackish marsh with small pockets of freshwater wetlands interspersed throughout the uplands bordering the marsh. This appears to be the first vouchered record for Accomack County and the northernmost locality for the Virginia portion of the Delmarva Peninsula. Linzey and Clifford (1981 Snakes of Virginia. University Press of Virginia, Charlottesville. 159 pp.) reported this species from Accomack County. However, Tobey (1985. Virginia's Amphibians and Reptiles, A Distributional Survey. Virginia Herpetol. Soc., Purcellville. 114 pp.) shows no records for this species from the Delmarva Peninsula in Virginia nd Mitchell (1994. The reptiles of Virginia. Smithsonian Institution Press, Washington, D.C. 352 pp.) indicated that the nearest Virginia locality for this species is in the southern half of Northampton County. Mitchell and Anderson (1994. Amphibians and Reptiles of Assateague and Chincoteague Islands, Virginia Museum of Natural History, Special Publication Number 2) did not record this species in their survey of Assateague and Chincoteague Islands to the north of Wallops Island. Harris (1975. Distributional survey Amphibia/Reptilia): Maryland and District of Columbia. Bull. Maryland Herpetol. Soc. 11:73-167.) shows several records for this species in Worcester County, Maryland, immediately to the north of Accomack County. It is likely that this species occurs in brackish and freshwater wetland habitats at other sites on the Delmarva Peninsula. The specimen will be deposited in the Virginia Museum of Natural History.

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FIELD NOTES

Agkistrodon piscivorus piscivorus (Eastern Cottonmouth). VA: Surry Co., Blackwater River at Route 31, 2 km W of Dendron, 12 July 1994, Christopher G. Collins and Steven M. Roble.

The range map for cottonmouths prepared by Mitchell (1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, D.C. 352 pp.) shows only 11 sites outside of the Suffolk-Chesapeake-Virginia Beach area. Tobey (1985, Virginia's Herpetological Society, Purcellville, Virginia. 114 pp.) reported this species from two sites in Surry County. No additional records from this county were added by Mitchell (op. cit.), who noted that one of Tobey's sites was 3 km N of Dendron.

While seining for fish along a section of the Blackwater River extending from approximately 300-800 m upstream of the Route 31 bridge, Chris Collins and I encountered two adult cottonmouths on 12 July 1994. One individual was flushed from beside a log at the water's edge and the other was basking on a log pile. Both were seen at close range but neither was collected or photographed. This area lies about midway between the Dendron and Spring Hill (Sussex Co.) sites plotted in both Tobey (1985) and Mitchell (1994). I made four visits (one with Chris Collins) during July 1994 to the area where Route 31 crosses Cypress Swamp (presumably near the previous Dendron record), but did not observe any cottonmouths. The fact that this site was nearly dry during each of these visits may explain why cottonmouths were not present.

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Regina septemvittata (Queen Snake). VA: Grayson Co., New River, approximately 0.5 km SW (upstream) of U.S. Route 21/221 bridge, 5 June 1994, S.M. Roble.

While surveying the western shore of the New River for dragonflies during a post-meeting field trip of the Dragonfly Society of the Americas, I encountered a queen snake along the water's edge below an undercut section of bank. The specimen was observed briefly and several photographs were taken. Subsequent examination of the range map in Mitchell (1994. The Reptiles of Virginia. Smithsonian Institution Press,

Washington, D.C. 352 pp.) revealed that this is a new county record. The site is within 0.5 km of the North Carolina border. A voucher slide has been deposited in the Virginia Herpetological Society slide collection.

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Cnemidophorus sexlineatus sexlineatus (Six-lined Racerunner). VA: Franklin Co., 1.6 km S Jct. St. Rt. 40 and Co. Rt. 662 on N side of Jack's Creek, 5 km E Gladehill. 3 June 1992. T. J. Rawinski.

Six-lined racerunners inhabit a wide variety of xeric habitats in the Piedmont and Coastal Plain of Virginia, as well as dry habitats associated with the James River watershed extending into Alleghany County (Mitchell, 1994. The Reptiles of Virginia, Smithsonian Inst. Press, Washington, D.C., 352 pp.). During the course of investigating the vegetation of an isolated serpentine barren in eastern Franklin County, one of us (TJR) recorded an adult racerunner among the bedrock outcrops and sparse vegetation. The vegetative community can be described as a natural grassland fringed by a xerophytic pine-oak woodland (Rawinski, 1994. Virginia J. Sci. 45:108, abstract). This is the first record for this species on a serpentine barren in the Commonwealth. A single individual was observed but a directed search within the five hectare of potential habitat was not carried out.

A kodachrome slide was taken of the adult observed on this date and deposited with the Virginia Herpetological Society slide archives. This is the first verified record of a racerunner population in Franklin County (Mitchell, op. cit.).

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PRESIDENT'S CORNER

Greetings to all VHS members and welcome to our new members. For those of you who always look forward to the "President's Corner" in each issue of *Catesbeiana*, I apologize for missing the last issue. That time in my life was in turmoil to say the least. My career took a major turn from a field biologist to an administrator. The new job responsibilities and demands, plus relocating to Richmond, consumed pretty much all of my time. Francie and I have settled into our new home in Goochland County, but I am still trying to get used to a suit and tie.

This past year as President has been a rewarding experience for me. I really appreciate your confidence in allowing me to serve in this position and your support throughout the year. The Society is moving along with a solid membership and treasury, and a dedicated and enthusiastic Executive Committee. I would like to thank Joe Mitchell, Bob Hogan, Mike Pinder, Paul Sattler, and Terry Spohn for their continual support and assistance to me and the VHS.

Terry Spohn has temporarily left us to work in Korea. Terry promised to stay in touch with the Society, and he should be back for the Spring '96 meeting. I wish the best for Terry and his family during their stay in the Far East, and Terry, "be careful with the kimchee"!

Joe Mitchell's The Reptiles of Virginia book was a big hit at the Fall meeting. The Society sold nearly all books ordered. Joe made himself available at the meeting to sign many of them. This excellent reference is still available to VHS members at a 20 percent discount. Joe is now working to complete the second part of the set - The Amphibians of Virginia. Another recent book available to members is Amphibians and Reptiles of Assateague and Chincoteague Islands. This field guide of Virginia's Eastern Shore herps was done by Joe Mitchell and John M. Anderson. Contact Bob Hogan or use the order form in the latest Newsletter if you would like to purchase these books.

The VHS had some involvement with the Virginia Legislature this year. Delegate Joe T. May contacted me regarding the Society's view on nominating the timber rattlesnake as the "State Reptile". The VHS Executive Committee met, and after considerable discussion decided that the Eastern box turtle would be a more appropriate choice for the State Reptile for a number of reasons. After expressing our opinion to Delegate May, he decided to go with the timber rattlesnake based on what his constituency requested. Also, Delegate May felt the rattlesnake had both historic and symbolic significance in Virginia.

If you have not followed House Bill #1889 as it "slithered" through the House and Senate, it did pass the House by the "skin on a

snake's fang" with slightly more "ayes" than "hisses". However, the timber rattlesnake met its match on the floor of the Senate. The Bill was sent back to committee when it reared it's head, which virtually (road) "killed" the chances for the timber rattlesnake to become Virginia's official reptile. The VHS applauds Delegate Joe T. May and Nathan Hollenbach (and friends) for their determination, concern, and dedication to the herps of Virginia.

Other activities the Society was involved with this past year included setting up an informational display at the "herp Expo" held in Richmond, sending representatives to the North Carolina Herpetological annual meeting in Raleigh, NC, and co-sponsoring the Virginia chapter of The Wildlife Society's annual meeting. Dr. Joe Mitchell represented the VHS at the meeting and made a presentation on Virginia's herps. Joe was recognized by the Virginia Chapter of The Wildlife Society for his many years of work and dedication to the conservation and study of reptiles and amphibians, and was presented with the "Professional Wildlifer of the Year" award. Congratulations, Joe!

All members should be marking their calendars to attend the Spring meeting, April 28-30 at Fort A.P. Hill. This meeting should be as exciting as last year's meeting with the same possibility of seeing several interesting species of herps such as carpenter frogs, lesser and greater sirens, and eastern spadefoot toads. The Spring meeting is a great opportunity to meet with other members and get out and do some collecting. Thanks to Bob Hogan, we will have great accommodations at the site, and I look forward to seeing as many members as possible. Bring a friend (potential new member) if you would like!

VIRGINIA HERPETOLOGICAL SOCIETY
TREASURER'S REPORT
FALL 1994 Meeting

The balance in the treasury checking account reported at the Spring 1994 Meeting was $1,929.97.

Expenditures since that time included:

4/23/94 ck. #122	Holiday Inn/Spring Meeting Banquet	8.35
4/24/94 ck. #123	Snacks/drinks for Spring Meeting	199.07
5/09/94 ck. #124	Labels for Newsletter	8.75
9/10/94 ck. #125	Labels for *Catesbeiana*	8.75
9/15/94 ck. #126	Telephone reimbursement	4.20
9/22/94 ck. #127	*Catesbeiana* Printing and Postage	180.99
Total Expenditures		$663.08

Receipts:

Dues and Banquet reimbursements	$301.40
Orders for Reptiles of Virginia	615.00
Total Receipts	$916.40

Balance in checking as of 10/8/94	$2183.29
Balance in savings as of 10/8/94	$1224.05
Total in treasury	$3407.34

The Society has a current membership of 117 members.

Respectfully submitted,

Robert S. Hogan
Secretary and Treasurer

ANNOUNCEMENT
SPRING 1995 MEETING OF THE
VIRGINIA HERPETOLOGICAL SOCIETY

The Spring 1995 meeting of the VHS will be held on 28-30 April 1995 at Fort A.P. Hill. This 3 day field trip meeting will continue the VHS effort to survey the herpetofauna from throughout the State. From I-95 take the Bowling Green exit (Route 207). Proceed northeast on Rt. 207 to U.S. Route 301. Take 301 North to Fort A.P. Hill. Watch for the sign indicating the Main Gate. Turn left through the Main Gate onto A.P. Hill Drive. Tell the guards at the gate that you are with the Virginia Herpetological Society, are doing a biological survey this weekend, and are staying at the Cabins on Chuck Road. Go down A.P. Hill Drive (Reservation Rd. 603) about 7 miles, just past Pullers Corner to Chuck Road. Turn right on Chuck Rd. and take one of its three branches to one of the four cabins. Remember this is a military installation and speed limits are strictly enforced.

The earliest check-in time is 4:00 p.m. on Friday. However, Natural Heritage of the Virginia Department of Game and Inland Fisheries has agreed to coordinate setting traps early on Friday. If you are interested in helping, meet by 2:00 p.m. at the first (Gregg) cabin. Call Steve Roble (804-786-8633) by April 26th if you plan on helping so that we known how many are coming.

The cabins are heated and provided with complete cooking equipment, plates and silverware. You should plan on bringing food to prepare (you might coordinate this with a group if possible). The cost of the cabins is $20/night/person (students half price) up to $120/cabin/night. Each cabin sleeps 6 in beds (bedding provided)(6 persons x $20/night = $120/cabin/night). If there are more than 24 persons for the 4 cabins, additional room on the floor is available (bring sleeping bags), and would then decrease the cost/person/cabin. Each cabin should make informal arrangements to provide the $120/night. If you have questions, please call Bob Hogan at 703-981-4435 or 703-992-1994. Please RSVP to Bob if you are coming and how many are in your party.

Dress for the weather, which could be anywhere between snow and 80° F in late April. Fort A.P. Hill has an abundance of wetlands, so bring whatever boots, waders, and nets that you can. If weather permits, we will go into the field both Friday and/or Saturday nights, so bring whatever lights you have. Plan on coming to help perform this survey and see some rare species (sirens, carpenter frogs and spadefoot toads).

Bring your camera as our "no collecting" policy will remain in effect. Remember to practice conservation and return rocks and logs to their original positions.

Schedule:

Friday, April 28

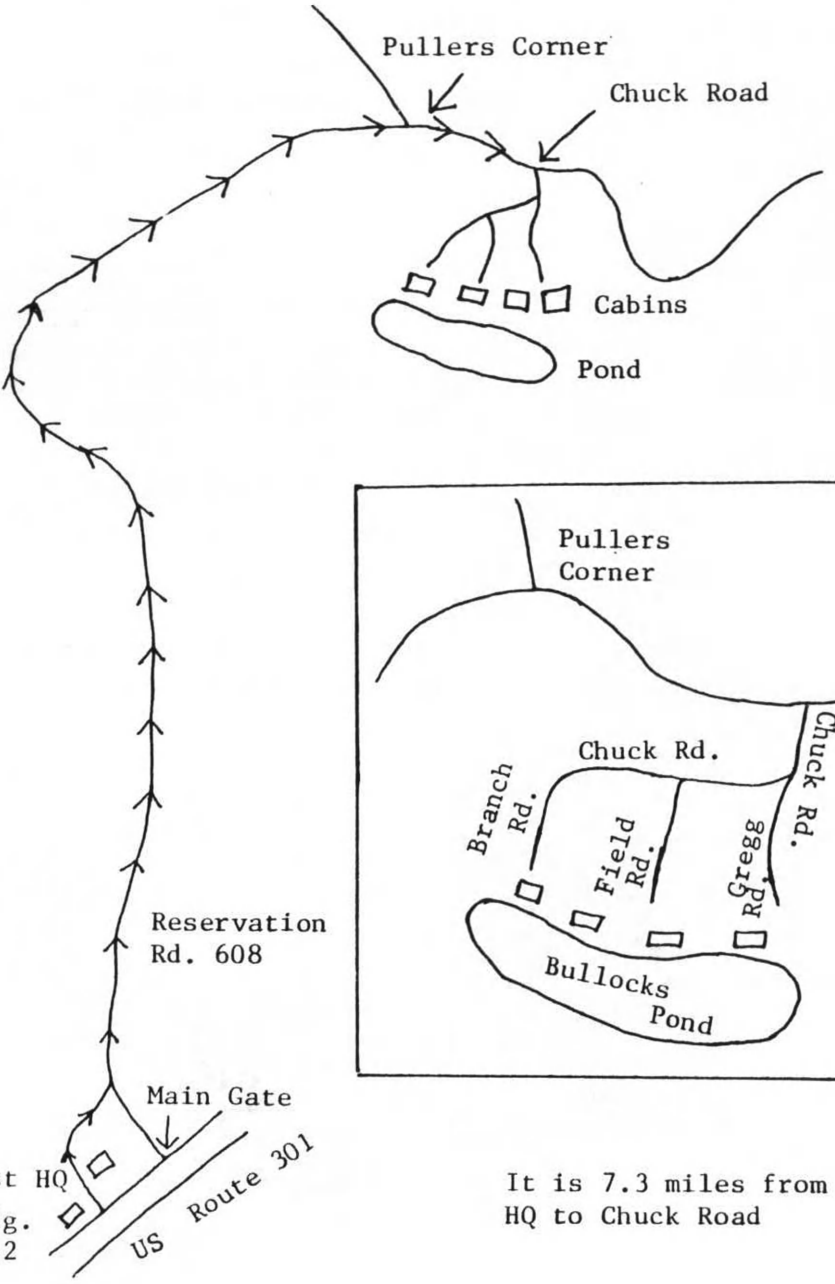
2:00 pm	Early arrivals, setting turtle and siren traps
4:00 pm	Earliest check-in at the cabins
5:00 - 7:30 pm	Supper at cabins
7:30 - 9:00 pm	Business meeting and plan for Saturday
9:00 - ???	Night forays?

Saturday, April 29

7:30 - 9:00 am	Breakfast
9:00 am - 5:00 pm	Herp Survey
5:00 - 7:30 pm	Supper at cabins
7:30 - 9:00 pm	Compile data, plan for Sunday
9:00 - ???	Night forays?

Sunday, April 30

7:30 - 9:00 am	Breakfast
9:00 am - 12:00 pm	Herp Survey
12:00 - 1:00 pm	Lunch at cabins
1:00 - ???	Compile data, release animals, return home!



It is 7.3 miles from Post HQ to Chuck Road

MEMBERSHIP APPLICATION

I wish to ____ initiate ____ renew membership in the Virginia Herpetological Society for the year 19____.

___ I wish only to receive a membership list. Enclosed is $1.00 to cover the cost.

Name _____

Address _____

_____ Phone _____

Dues Category: ___ Regular ___ Family ___ Under 18 ___ Life
($10.00) ($12.50) ($6.00) ($150)

Interests: ___ Reptiles ___ Amphibians ___ Captive Husbandry
___ Distribution ___ Research
___ Specifically _____

Make checks payable to the Virginia Herpetological Society and send to the treasurer: Robert Hogan, P.O. Box 603, Troutville, VA 24175.

Field Notes

This section provides a means of publishing natural history information on Virginia's amphibians and reptiles that does not lend itself to full-length articles. Observations on geographic distribution, ecology, reproduction, phenology, behavior, and other areas are welcomed. Reports can be on single species or fauna from selected areas, such as a state park or county. The format of the reports is species' scientific name (common name): State abbreviation: County, locality. Date. Observer(s) or collector(s). Report or observations given one line below the data mentioned above. Author(s) name and address are given one line below the report or observation. Consult published notes or the editor if your information does not readily fit this format.

If the note contains information on geographic distribution, a voucher specimen or color slide should be sent for verification and deposited in a permanent museum or sent to the Virginia Herpetological Society. Species identification for observational records should be verified by a second person.

The correct citation format: Tobey, F.J. 1989. Field notes: *Coluber constrictor constrictor*. *Catesbeiana* 9(2):35.

Herpetological Artwork

Herpetological artwork is welcomed. If the artwork has been published elsewhere, we will need to obtain copyright before we can use it in an issue. We need drawings and encourage members to send us anything appropriate, especially their own work.