

Virginia Herpetological Society

Volume 8, Number 1

January 1998

NEWSLETTER

Catesbeiana Co-editors

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VDGIF FUNDING INITIATIVE - Be Part of Our Mission

All Virginians have cherished moments when they first became intensely aware of the wildlife in the Commonwealth. Those memories may be of deer in the mist of an early morning, turtles basking on a log, song birds visiting a feeder, the beauty of a mountain stream, or frogs calling on a rainy spring night. By saying wildlife, I mean all wildlife including fish. It will be a shame if the wildlife resources of the Commonwealth are not managed and protected to the highest degree possible. Unfortunately, your opportunities to enjoy wildlife are now threatened.

The Department of Game and Inland Fisheries, the state agency charged with managing Virginia's wonderful wildlife resources, now needs additional financial assistance to maintain management efforts at their current levels. According to the Auditor of Public Accounts, existing funding will not support the present level of resource management past the year 2000. Current programs and services will have to be cut and facilities mothballed unless this funding problem is solved. The mission of the Virginia Department of Game and Inland Fisheries

(DGIF) is threefold: 1) to manage Virginia's wildlife and inland fish to maintain optimum populations of all species to serve the needs of the Commonwealth; 2) to provide opportunities for all to enjoy wildlife, inland fish, boating, and related outdoor recreation; and 3) to promote safety for persons and property in connection with boating, hunting, and fishing.

For its entire history since 1916, the Department has never relied on appropriations from general tax revenue for its operations. Citizens involved and interested in wildlife resources and boating recreation have supported the agency through the purchase of hunting and fishing licenses, the registration of motorboats, or through direct donations. Additional funds have been provided through cooperative programs with the federal government. The largest fund by far is the Game Protection Fund. All revenues from hunting and fishing license sales, wildlife license plates, Virginia Wildlife magazine, and the sale of other goods and services are deposited into this fund. Together these funds support the comprehensive wildlife management programs of the agency, which includes the activities of biologist, law enforcement officers, environmental reviewers, and educators.

In the southeastern region of the United States, Virginia is next to the last in per capita expenditure for wildlife management programs, even though the state benefits economically from wildlife recreation. In fact, wildlife recreation generated more than \$2.1 billion in Virginia in 1996 through lodging, gas stations and retail outlets -- often in rural areas. Total sales tax collections from purchases of wildlife-oriented recreational items was \$24 million. For these economic benefits to continue, Virginia must consider adequate funding for its wildlife management agency.

While the revenues from the Game Protection Fund have shown an increase in recent years, this has resulted from selling more licenses to existing hunters and anglers, and not from an increase in license buyers. As fewer hunters purchase licenses, revenues will start to decrease, causing the same customers to carry an even greater burden. For example, when the expanded deer herd allowed Virginians to buy more licenses for special hunting seasons, the number of licenses purchased per hunter went from 2 to 2.63. Management possibilities are driven by these funding sources. Current participation trends suggest that decreasing revenues may be seen in the future.

Demands on the Department are increasing, and many are not funded. Among these expanding demands are nuisance wildlife problems, wildlife disease outbreaks, deer kill permits, rare and watchable wildlife, and evaluating the needs of wildlife resources in the state environmental review process. Because increasing demands on the agency are an additional drain on our resources, comprehensive wildlife management programs, such as those expected by the citizens of the Commonwealth, should be supported by a broader funding base than the hunters, anglers and boaters in the state.

During 1997, the General Assembly formed the House Joint Resolution 552 legislative committee to address the projected funding shortfall of the Department. Through several meetings, both public and private, the committee endorsed two proposals to solve the funding problem of the Virginia

Department of Game and Inland Fisheries.

1) **House Bill #38:** Dedicate a portion of the existing sales tax collected by the state from the sale of wildlife-related recreational equipment to the Game Protection Fund for funding the comprehensive wildlife management, enforcement programs, and address the capital needs of the agency. This is **not** a new sales tax, but a dedication of a portion of the existing taxes collect on supplies and equipment used by citizens participating in wildlife-related recreational activities.

2) **House Bill #40:** Allow the Board of Game and Inland Fisheries to adjust license prices on a two-year basis according to the Consumer Price Index not to exceed \$1.00 per biennium for residents licenses and \$2.00 for non-residents.

How can VHS members help now?:

- Call or write your delegate and senator personally to express your support for legislation relating to the long-term funding for wildlife.
- Encourage others to support the long-term funding for wildlife and contact their state representatives.
- Attend legislative committee meetings and support the long-term funding for wildlife.
- After January 14, 1998, call the legislative hotline and express your support. The number will be 1-800-889-0229.

For more information on the funding initiative, you can contact the Department via email at: funding@dgif.state.va.us, or write to: Funding Initiative, VDGIF, 4010 West Broad Street, Richmond, Va 23230.

With your support, the Department will be able to meet the future wildlife needs for the citizens of the Commonwealth.

NEWS UPDATE

Bog Turtles Protected by Endangered Species Act

Source: U.S. Fish & Wildlife Service, Public Affairs Office, 300 Westgate Center Dr., Hadley, MA 01035-9589 (413) 253-8328

The U.S. Fish and Wildlife Service is extending Endangered Species Act protection to conserve the northern population of the bog turtle, which has seriously declined in the northeast United States, the Service's Northeast Regional Director Ronald E. Lambertson announced November 4, 1997. "Endangered Species Act protection will provide an opportunity to recover the northern population of the bog turtle," Lambertson said.

The northern population of the bog turtle, ranging from New York and Massachusetts south to Maryland, is now designated threatened. The southern population of the bog turtle, ranging from southern Virginia to northern Georgia is also protected with a threatened designation because its physical appearance is similar to the northern population. A species qualifies for threatened protection under the Act if it is likely to become extinct within the foreseeable future.

Currently bog turtles (*Clemmys muhlenbergii*) are known to remain at fewer than 200 sites in their northern range, Lambertson said. Based on site habitat quality, only 35 of the 176 sites assessed may be capable of supporting healthy bog turtle population into the future unless measures are taken to protect, maintain and restore bog turtle habitat. The northern population of the bog turtle has declined by 50 percent, mostly within the past 20 years. Illegal collection, primarily for the national and international pet trade, as well as loss and modification of the bog turtle's wetland habitat, have resulted in a reduction of the species' range and a decline in the size of the remaining population.

Bog turtles are highly prized in the pet trade, bringing high prices from collectors and dealers, according to Lambertson. With the new threatened designation, collection and other activities such as habitat destruction or degradation, and interstate sale, export or import of bog turtles are prohibited by the Act.

Because most bog turtle habitat is on private land, Lambertson said representatives of the Service, state wildlife agencies and conservation groups will work

cooperatively with private landowners. Lambertson said permits for activities such as wetland filling and draining are already required; therefore, the Service will make every effort to work with landowners on alternatives that will protect the turtles. The Service is not designating critical habitat for the bog turtle because such designation can potentially increase illegal collection.

Since 1975, the Convention on International Trade in Endangered Species of Wild Fauna and Flora has monitored international trade in bog turtles, requiring permits for legal trade. However, significant illegal trade in bog turtles exists.

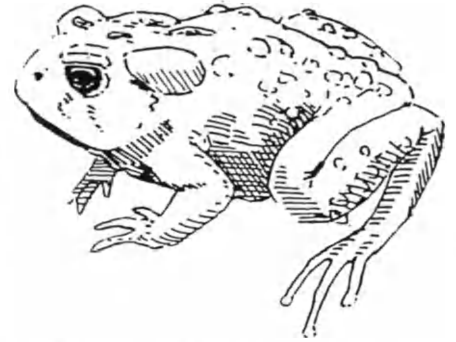
Bog turtles are easily distinguished from other turtles by the large, conspicuous bright orange, yellow or red blotch found on each side of the head. Adult bog turtle shells are 3 to 4-1/2 inches in length and range in color from light brown to ebony.

The southern bog turtle population is separated from the northern population by approximately 250 miles. However, individual bog turtles in the southern population closely resemble individuals in the northern bog turtle population, causing difficulty in enforcing prohibitions protecting the northern population. Therefore, the Service is designating the southern population as "threatened by similarity of appearance." This designation prohibits collecting individual turtles from this population and bans interstate and international commercial trade. However, it has no effect on land management activities of private landowners in southern states where the bog turtle lives.

People who legally possess bog turtles are allowed to retain the turtles. All seven states in its northern range and all five states in its southern range provide varying degrees of protection for the bog turtle.

Several agencies and organizations support Endangered Species Act protection for the bog turtle, including state wildlife agencies in Maryland, New York, Pennsylvania, Massachusetts and Connecticut.

Statewide Anuran Monitoring Program Wants You!



Source: Don Schwab, VDGIF Nongame Biologist, see address below.

Biologists throughout the world have been reporting declining numbers of amphibians for the past five decades. The early declines or extinctions were traced to direct human activities such as habitat destruction and pollution. In the early 1980's, biologists began reporting extinctions or large declines of amphibian populations in pristine habitats where no obvious causes were evident. In response to these declines and extinctions, the Declining Amphibian Populations Task Force (DAPTF) was established in 1991. The task force is a global network of scientists and conservationists working towards discovering the cause of amphibian population changes. The North American Amphibian Monitoring Program (NAAMP), the North American component of the DAPTF, is operated by the U.S. Geological Survey's National Biological Service from the Patuxent Wildlife Research Center in Laurel, MD.

The NAAMP's goals are to "... provide statistically defensible program to monitor the distribution and relative abundance of amphibians..." To reach these goals NAAMP has established protocols to monitor:

- ✓ Terrestrial salamander survey
- ✓ Calling frogs and toads
- ✓ Aquatic survey
- ✓ Western amphibian survey
- ✓ Amphibian atlases

The Department of Game and Inland Fisheries (DGIF) is assisting in the NAAMP's frog calling efforts through the establishment of a volunteer network to survey various routes across Virginia during late winter and early spring. The plan is to get a half dozen volunteers on board for the spring of 1998 breeding season. We want to keep the numbers small this year because of the late start and the training that needs to be implemented prior to turning volunteers out into the field. It is the goal of Virginia's Monitoring Program to establish as many routes across the Commonwealth.

The objectives of this monitoring program is to determine if the declines are indeed occurring and to the develop a baseline for anuran populations in Virginia. Careful monitoring of amphibian populations could provide an early indication of environmental deterioration. In fact, amphibian population dynamics could predict more widespread environmental effects - perhaps those with possible impacts to human populations. Establishing a baseline is the first step in this long-term monitoring program. If a decline is found, additional studies will occur to determine the cause.

If you are interested in volunteering and/or finding out what the requirements are for this coming season you need to contact either :

Don Schwab
VDGIF/Nongame & Endangered Species Program
5806 Mooretown Road
Williamsburg, VA 23188
(757) 253-7072 email: dschwab@dgif.state.va.us

Mike Pinder
VDGIF/Nongame & Endangered Species Program
2206 South Main St. Suite C
Blacksburg, Va 24060
(540) 951-7923 email: mpinder@dgif.state.va.us

HERP HAPPENINGS

VHS Fall Meeting - The fall meeting was held at the Virginia Museum of Natural History on October 24, 1997. The business meeting included the nomination and election of new officers, spring meeting locations, society budget, and passing a resolution supporting longterm funding for the VDGIF. A paper session and tour of the museum's collections followed the business meeting. A certificate of appreciation was presented to Shay Garriock for his work developing a society homepage. A raffle and silent auction organized by Doug Eggleston was a success. The society would like to thank the following people and organizations for donating items; Virginia Department of Game and Inland Fisheries, Virginia Museum of Natural History, Doug Eggleston, Marty Capron, and Ben Greishaw. The society would like to thank Sonja Wolen for organizing the use of the facility and Khalil Pfaff for his museum tour. Minutes of the meeting will be available in the next Catesbeiana.

Paper Session - Several presentations were given by VHS members during the fall meeting. Presentations were given by Shawn Carter, Doug Harpole, Shannon Knapp, Paul Sattler and Joe Mitchell. Bog turtle research, effects of selected logging on salamander populations, and the herpetofauna of the Peruvian jungle were some of the papers presented. The VHS would like to thank everyone who gave talks.

VHS Elections - New officers were chosen at the last meeting. Shay Garriock was elected as the new Secretary/treasurer replacing Mike Hayslett. Robert Greenlee was elected as President-elect and will become president in two years. Mike Pinder is now President replacing Paul Sattler. Paul was presented a plague for his dedicated work as VHS President. However, Paul's obligations are not over yet, he will now serve for two years on the VHS EXCOM.

Teacher's Workshop - An amphibian and reptile workshop for teachers was held the morning of the fall VHS meeting. Mike Hayslett conducted a slide presentation on amphibians and vernal pools, and Doug Eggleston had his usual great talk with live specimens of snakes, turtles and lizards. Mike Pinder provided slides on Virginia's threatened and endangered herpetofauna, and Ruth Craig showed teachers how to instruct students about wildlife in the classroom. The workshop was attended by approximately 12 teachers, which will count as a continuing education credit for all in attendance. The VHS would like to thank everyone who presented at the workshop.

Hellbender Study - A study of eastern hellbender (Cryptobranchus alleganiensis) was conducted at Clinch Mountain WMA over the summer of 1997. VDGIF personnel collected seven hellbenders, 4 larvae and 3 adults, during three sampling nights. Hellbenders were surveyed by snorkeling selected sections of the creek, turning over rocks, and looking under boulders. All individuals were netted, weight, measured and released. Adults were implanted with a PIT (Passive integrated transmitter) tag for later recapture data. Macro and micro habitat variables were collected at all survey sites. Work on this study will continue through next summer.

HJR552 Committee Meeting - On September 10, 1997, Joe Mitchell represented the VHS at a public comment meeting held at the Virginia State House in Richmond. The purpose of the meeting was to promote the need for long-term stable funding for the VDGIF. The meeting was attended by over 50 people representing hunting, fishing, and watchable wildlife users throughout the Commonwealth. See the feature article to learn more about the outcome of this meeting.

*Reach for the Mountains
of the
Clinch Mountain Wildlife
Management Area*



The VHS will be holding its Spring Meeting and Field Trip at the Clinch Mountain Wildlife Management Area near Saltville, Virginia on May 15-17, 1998. Clinch Mt. WMA is owned and managed by the DGIF and is the second largest WMA totaling 25,477 acres spread across parts of Smyth, Washington, Russell, and Tazewell Counties. The area is dominated by mountains rising steeply from narrow valley floors, a 300 acre reservoir, and numerous wetlands. Big Tumbling Creek and the North Fork Holston River offers excellent opportunities to search for aquatic herps. A campground with pit toilets and water is available for anyone interested in "roughing it". Conversely, a motel in Saltville is open to everyone else. Members interested in attending should see the next issue of *Catesbeiana* for additional details.



**Virginia Herpetological Society
on the
World Wide Web**

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Comments, suggestions, submissions
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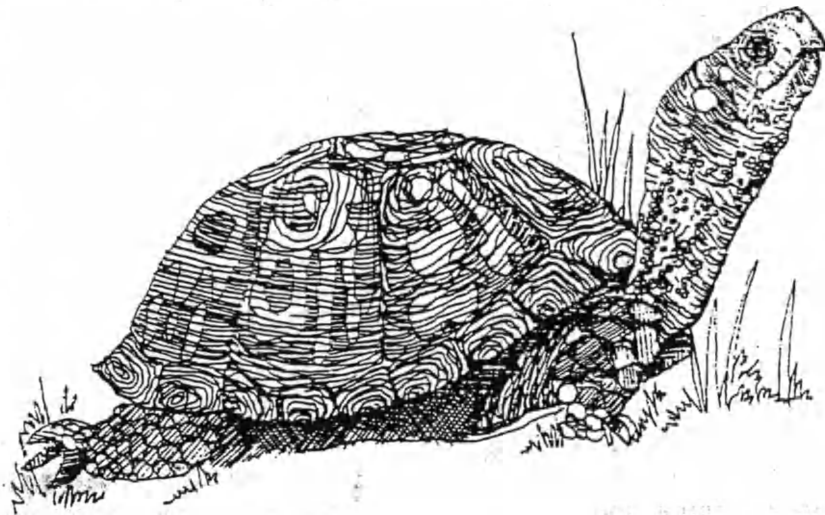
MOVING?

Make sure you forward your new address to:

VHS Secretary/treasurer
703 Burruss Drive
Blacksburg, Virginia 24060

VIRGINIA NATIVE

Eastern Box Turtle *Terrapene carolina carolina*



Status: Not listed

Description

The upper shell of a turtle, or the carapace, is like the skull of a mammal in that it is bony and is constructed of little round "plates". Its backbone is anchored to the inside of the top shell, and on the surface of this bony armor is a hard covering with conspicuous yellow spots, stripes or blotches on a dark brown background. Concentric growth rings are visible at the center of each plate on the turtle shell. However, counting these rings is not an accurate way of determining a box turtle's age.

The hinged lower shell of the box turtle, called a plastron, protects most mature turtles from predation because they can close their shell up completely and protect their soft body within. Juvenile box turtles, however, have not yet developed a hinged shell, so they are more vulnerable to predators.

You can use the shell to help tell whether a box turtle is a male or a female. The bottom shell of the male has a concave indentation in it, which is an

adaptation that assists during mating. The female's plastron, in contrast, is fairly flat. Another fairly reliable way to sex turtles is with a quick glance at the eyes: males tend to have bright red eyes, while the females' eyes are a reddish brown.

Habitat

Box turtles are found in many types of wooded areas and are primarily terrestrial, so you would not expect to see a box turtle swimming in a pond. During hot dry spells in the summer, they will seek out water and conceal themselves in small pools, mud, or damp ground.

As long as days are warm in September, box turtles will continue to feed in preparation for their winter hibernation. They over winter buried several inches below the soil, well beneath the leaf litter of the forest floor. When the ground freezes in winter, the box

turtle may partially freeze, too, but this does not necessarily result in death. As much as 58 percent of their body mass may freeze, and they can still survive.

Diet

Box turtles are omnivores. Their diet may therefore consist of mushrooms, slugs, snails, beetles, grasshoppers, salamanders and caterpillars, as well as berries such as blackberries, elderberries and wild strawberries. Because they consume a great deal of berries, box turtles play an important part in the dispersal of these plants' seeds. One study even found that the seeds of Jack-in-the-pulpit, mayapple, pokeweed, black cherry, and grape had higher germination rates after passing through the digestive tract of box turtles.

Distribution

Box turtles are found throughout Virginia including the Delmarva Peninsula. In North America, box turtles range from the eastern, central, and southwestern United States to many parts of Mexico.

Breeding Biology

Box turtles have been known to mate throughout spring, summer, and fall. From late May to late July, females lay a single clutch of 2-7 leathery, white eggs into a 3-4 inch deep nest. Incubation time varies from 69 to 136 days. When the eggs hatch, the baby turtles are only about the size of a quarter.

Current Status and Threats

Box turtles are one of the most frequently seen reptiles in Virginia. Everyone knows of seeing these animals while driving the roads and highways of the Commonwealth. Unfortunately, it is often when crossing roads, turtles are most likely to be killed. While most people will try to avoid or even help these turtles cross the road, others actually target these innocent reptiles. Good samaritans should always be careful and keep in mind their own personal safety before attempting a rescue.

As forests and woodlots are cleared, box turtle habitat

becomes increasingly fragmented resulting in isolated populations. Turtles must then move farther to find mates or food making them vulnerable to predation or road mortality. In habitats altered by human activities, box turtles are at an increased risk of predation by skunks, raccoons, foxes, and crows that flourish in such areas.

The pet trade has been reported as a major decimator of box turtle populations. Reports indicate that over 200,000 turtles of the genus *Terrepene* sp. were exported to Europe from 1986-1990. Box turtle trade is now regulated by the Conservation of International Trade in Endangered Species of Wild Fauna and Flora (CITES) which requires permits from the country of origin. Although Virginia law allows for anyone to possess five live individuals for private use, people are encouraged to leave these unique reptiles in their natural habitat.

To learn more about bog turtles and other Virginia reptiles, we suggest the following material:

Conant, R. and J.T. Collins. 1991. The Peterson Field Guide Series - A Field Guide to Reptiles and Amphibians of Eastern and Central North America. 3rd edition. Houghton Mifflin Company, Boston. 450 pp.

Mitchell, J.C. 1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington. 352 pp.

Editor's Note:

This is a draft copy of what will eventually be a fact sheet for the box turtle. Fact sheet was modified from the box turtle description in Joe Mitchell's Reptiles of Virginia (1994) and Wild in the Woods Newsletter by Carol Heiser (1997). Art work contribution was by Cindie Brunner. Any suggestions or corrections should be sent to the editor.

Literature Review

The purpose of this column is to inform members of recent herpetological research pertinent to Virginia or of special interest to the Society's membership. Papers or notes from professional journals, new books, "gray literature" reports, and popular magazine articles are acceptable for inclusion. Members are encouraged to send recently published items of interest to the editor. Submissions will be accepted subject to the approval of the editor.

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- Cobb, G.P., and P. D. Wood. 1997. PCB concentrations in eggs and choriollantoic membranes of Loggerhead sea turtles (*Caretta caretta*) from the Cape Romain National Wildlife Refuge. *Chemosphere*; 34(3):539-549.
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- Joy, J.E, and C.A. Bunten. 1997. *Cosmocercoides variabilis* (Nematoda: Cosmocercidae) population in the eastern American toad, *Bufo a. americanus* (Salierta: Bufonidae), from western West Virginia. *Journal of Helminthology* 64(1):102-105.
- Mlot, C. 1997. Crab traps and terrapins. *Science News*. 152 (18):287.
- Passek, K.M. and J.C. Gillingham. 1997. Thermal influence on defensive behaviours of the Eastern garter snake, *Thamnophis sirtalis*. *Animal Behaviour*. 54(3):629.
- Perison, D., J. Phleps, C. Pavel, and R. Kellison. 1997. The effects of timber harvest in a South Carolina blackwater bottomland. *Forest Ecology Management*. 90,(2-3):171-185.
- Polson, S.W. 1997. Mutations on the rise. *National Parks*: 71(5-6): 40.
- Polson, S.W. 1997. Amphibian assault. *National Parks* 71(5-6): 40.
- Tyson, R. 1997. Scientists link coal fly ash disposal to amphibian abnormalities. *Environmental Science and Technology*. 31(9):408.

Project Bog Turtle Enters Virginia

Source: Tom Thorp, Three Lakes Nature Center, 400 Sausiluta Dr., Richmond, Va. 23227 (804) 262-4822.

Project Bog Turtle began as a research project coordinated by members of the North Carolina Herpetological Society. The focus of this endeavor was to survey potential bog turtle sites in the Piedmont of North Carolina. Now this project's scope has been expanded.

With proposed listing of the bog turtle on the horizon, the U.S. Fish and Wildlife Service contracted Project Bog Turtle coordinators to oversee the survey effort in the Southeast. The Fish and Wildlife Service would like to get a better idea of how the bog turtle populations are doing in Virginia, North Carolina, South Carolina, Georgia and Tennessee.

The survey is scheduled to be completed in two years. Its results may have an impact on the current listing for the bog turtle in the South. This turtle was designated threatened status on November 4, 1997 primarily because of the plight of the Northern populations. Currently, the southern populations are listed as protected due to similarity of appearance. This protects the turtle, but not its habitat.

Over the next two years Project Bog Turtle co-chairmen Dennis Herman and Tom Thorp along with members of the survey team will be working with state and private biologists Mike Pinder, Shawn Carter, and Dr. Joseph Mitchell, and others to survey potential sites in Virginia.

This effort, along with surveys in other states, should give us a better idea of the current range of the bog turtle in the South. This will aide in the development of an accurate recovery plan to help protect and secure the bog turtles' future. If you would like to help, donations can be made to Project Bog Turtle, NCHS, N.C. State Museum of Natural Sciences, P.O. Box 29555, Raleigh, North Carolina 27626-0555.

VDGIF Funding Initiative Resolution

Resolution passed unanimously during the VHS fall meeting on October 24, 1997 by attending members. See feature article for more information regarding funding initiative.

WHEREAS, the Department of Game and Inland Fisheries (DGIF) is a non-general fund agency of the Commonwealth; and

WHEREAS, DGIF is Virginia's wildlife management and boating safety and education agency; and

WHEREAS, DGIF's mission is to protect and enhance wildlife and fish populations for outdoor recreation purposes for both consumptive and nonconsumptive users; and

WHEREAS, the outdoor recreational activities that DGIF fosters being substantial economic benefits and revenue to the Commonwealth and its citizens; and

WHEREAS, the primary funding sources of DGIF have historically been the revenues generated from the sales of hunting and fishing licenses and boat registration fees; and

WHEREAS, DGIF has substantial capital and operational needs; and

WHEREAS, in a study authorized by the 1996 Appropriations Act, the Auditor of Public Accounts recognized that by the year 2000, DGIF will face a shortfall in funding available to meet its substantial capital needs; now

THEREFORE be it resolved that the Virginia Herpetological Society (VHS) recognizes the need for additional funding for comprehensive wildlife long term management conducted by DGIF,

BE IT further resolved that the VHS supports current legislative efforts to develop comprehensive wildlife initiatives; and

FINALLY BE IT resolved that the VHS pledges its support to DGIF for their continued efforts to conserve and manage all of Virginia's wildlife, including amphibians and reptiles.

BOOKS

Reptiles of Virginia By Joseph C. Mitchell

Beginning with Captain John Smith's observations of the region's reptilian fauna, this book offers the first complete catalog of the reptiles of Virginia, from the sea turtles of the Atlantic Coast to the snakes, turtles, and lizards of the Piedmont and Blue Ridge Mountains.

Including full-color illustrations of numerous habitats and thirty-two of the species, distribution maps for each species, and easy-to-use keys for quick identification (with a separate key for young snakes), *The Reptiles of Virginia* is a practical resource and an essential overview of this faunal group and its habitats.

The book is based on data derived from examination of some 10,000 Virginia specimens, yielding a wealth of new information on the ecology, life histories, and biogeography of reptiles in the state. Each of the 62 individual species accounts provides local common names, the historical context for scientific names, present habitat affinities, and information about geographic variation in color, pattern, and morphology, as well as reproduction, predators, and prey. The book also explores the human impact on Virginia's natural habitats and species' distribution patterns, presenting a historical perspective on the conservation of these animals.

About the Authors

Joseph C. Mitchell is an adjunct professor of environmental and conservation biology at the University of Richmond and is a research associate of the Virginia Museum of Natural History. John M. Anderson, a curatorial assistant at the Virginia Museum of Natural History, participated in a herpetological survey of Assateague Island funded by the National Park Service.

Amphibians and Reptiles of Assateague and Chincoteague Islands

By Joseph C. Mitchell and John M. Anderson

Assateague and Chincoteague islands are among the best-known barrier islands off the Atlantic coast of North America. Millions of people visit them every year for recreation. Most visitors are well acquainted with the famous Assateague ponies, but few know that these islands are home to unique assemblages of plants and animals.

This book provides information on some of the islands most secretive inhabitant, the amphibians and reptiles. Most of the frogs, salamanders, turtles, lizards, and snakes have occupied these islands since they were formed thousands of years ago. The reptiles and amphibians have learned to live in a harsh environment characterized by hot and dry sand, scarcity of freshwater, and periodic overwash by saltwater. Each of the seven species of amphibians and eighteen species of reptiles can be readily identified using the keys, color photographs, and descriptions in this book. Many interesting aspects of their biology are summarized in highly readable form.

Within these pages we discover why the islands are inhabited by far fewer species than are known to occupy the Delmarva mainland. We also learn about measures proposed to insure their longterm conservation, and how to observe these animals in their natural habitats. This book is the only source available that provides a window into the biology and ecology of two fascinating groups of animals on these barrier islands.

Order Form

All books purchased through the VHS are 20% discounted from the list price. This offer is open to everyone, members and nonmembers, as quantities last.

____ copies of Reptiles of Virginia @ \$32.00 each. Postage \$2.25 for first book; \$1.00 each additional book.
 ____ copies of Amphibians and Reptiles of Assateague & Chincoteague Islands @ \$11.96 each. Postage \$1.00 for the first book; \$0.50 each additional book.

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VA Herp Society

Membership Application

Please sign me up for membership in the Virginia Herp Society. Membership begins and ends on a calendar year.

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If the year on your address label is highlighted, then its time to renew your membership.