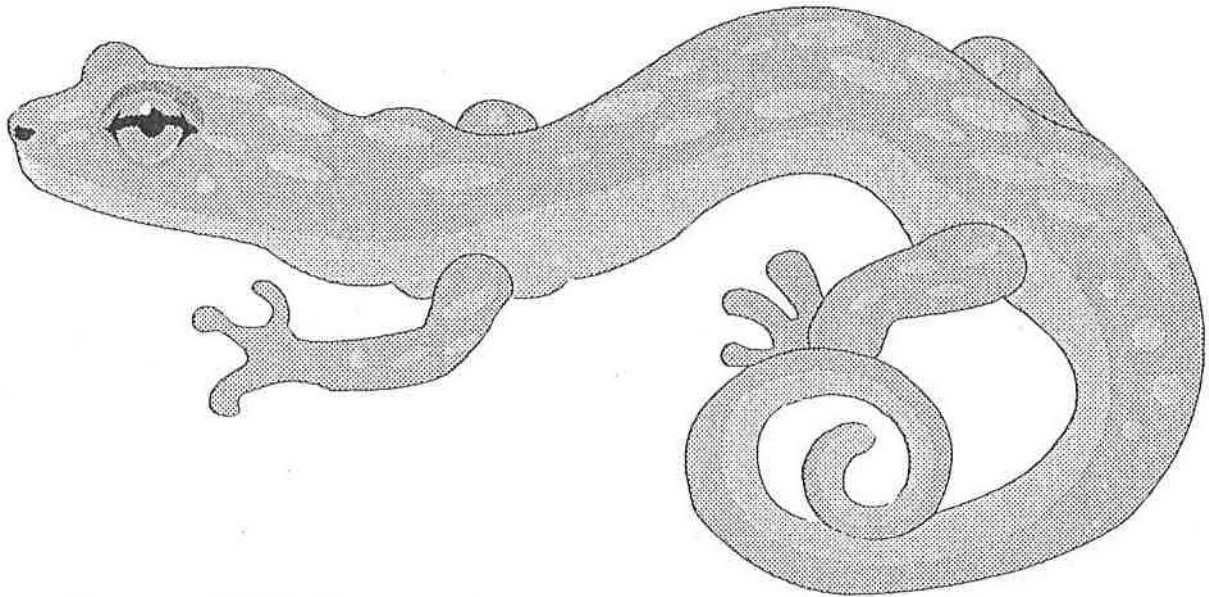


1998
Tennessee
HERPETOLOGY CONFERENCE



Sponsors: Tennessee Wildlife Resources Agency
Department of Biological Sciences, East Tennessee State University
Tennessee Department of Environment & Conservation

Dates: October 21-22, 1998 Wednesday-Thursday
Wednesday 1pm-12noon Thursday; Field Trip 2pm Thurs.

Meeting Place: Farmhouse Gallery and Gardens, Unicoi, Tennessee

Focus: Tennessee Herpetofauna and Herpetological Research in Tennessee

Other Topics: Long-term Monitoring
Land Management for Amphibians & Reptiles
Status of Tennessee Herpetofauna
Conservation of Amphibian & Reptile Resources
Herpetological Education

Keynote Speaker: Dick Dickenson, Wildlife Photographer. *"Photographing Reptiles and Amphibians in situ."*

Conference Objectives

To foster an understanding of the past, present and future of Tennessee herpetology and herpetofauna, to encourage communication between persons researching and managing our amphibians and reptiles, and to help identify needs and goals to benefit the conservation of our herpetofauna and their habitats.

Tennessee Herpetology Conference Annual Meeting
October 21-22, 1998
Farmhouse Gallery and Gardens, Unicoi, Tennessee
Wednesday, October 21, 1998

Registration (\$10.00; Students waived)

1:00-1:15 Welcome and Introduction:

Pete Wyatt, Alan Peterson, Rebecca Pyles, D. Withers, Johnny Lynch

1:15-2:15 Keynote Speaker: Photographing Amphibians and Reptiles in situ@

Mr. Dick Dickenson, Wildlife Photographer

2:15-2:30 Break

Contributed Paper Session

2:30-2:50 SNAKEBITE AND THE FIELD RESEARCHER: AN OVERVIEW
Jim Harrison, Kentucky Reptile Zoo

2:50-3:10 A PHENOTYPIC AND DISTRIBUTIONAL ANALYSIS OF *Nerodia erythrogaster* IN THE LOWER CUMBERLAND BASIN
Angelo P. Bufalino and A. Floyd Scott, Department of Biology and Center for Field Biology Austin Peay State University

3:10-3:30 AMPHIBIAN MONITORING IN GREAT SMOKY MOUNTAINS NATIONAL PARK
Dana Soehn, Great Smoky Mountains National Park

3:30-3:40 Break

3:40-4:00 THE DISTRIBUTION AND RELATIVE ABUNDANCE OF *Eurycea junaluska* AND SYMPATRIC SALAMANDER SPECIES IN THE GREAT SMOKY MOUNTAINS NATIONAL PARK, TENNESSEE
Liz Raulerson, USGS Patuxent Wildlife Research Center

4:00-4:20 ASSESSING DIVERSITY, ABUNDANCE, AND HABITAT ASSOCIATIONS OF SALAMANDERS IN GREAT SMOKY MOUNTAINS NATIONAL PARK
Erin Johnson and Ted Simons, Cooperative Fish and Wildlife Research Unit, North Carolina State University, Raleigh

4:20-4:40 EFFECTS OF TEMPERATURE ON EMERGENCE OF HATCHLING SLIDER TURTLES, *Trachemys scripta*, FROM SIMULATED LABORATORY NESTS.
Donald L. Thomas, Department of Biology, The University of Memphis

Supper (on your own)

Thursday, October 21

9:00-9:10 Introductory comments : Pete Wyatt, et al.

9:10-9:30 PROGRESS REPORT ON THE TENNESSEE GAP PROJECT
Susan Marden, Wildlife Biologist, TWRA

9:30-9:50 THE CLINCH RIVER ENVIRONMENTAL STUDIES ORGANIZATION
(CRESO) John Byrd and Fred Holtzelaw

9:50-10:10 PROGRESS REPORT ON DEVELOPMENT OF AN ATLAS OF REPTILES
FOR TENNESSEE A. Floyd Scott, Department of Biology and Center for Field
Biology Austin Peay State University

10:15-10:45 PROGRESS REPORT FOR TAMP
(David Withers, A. Peterson and P. Wyatt)

10:45-11:00 PROPOSED REGULATION CHANGES BY TWRA (affecting reptiles and
amphibians in Tennessee)
PROGRESS REPORT FOR TWW AND NATIONAL LEGISLATION
Pete Wyatt, TWRA

11:00- ??? Open Forum/Discussion

Lunch

2:00 FIELD TRIP TO UNAKA MOUNTAIN
Dr. Rebecca Pyles, East Tennessee State University

CONTRIBUTED PAPER ABSTRACTS
Tennessee Herpetology Conference
October 21-22, 1998
Farmhouse Gallery and Gardens, Unicoi, Tennessee

SNAKEBITE AND THE FIELD RESEARCHER: AN OVERVIEW

Jim Harrison, Kentucky Reptile Zoo, 1275 Natural Bridge Road, Slade, Kentucky 40376, email: kyreptil@pop.mis.net

Field researchers are among the highest groups at risk for envenomation by venomous reptiles. This overview can be used by all field researchers who may come in contact with venomous reptiles while conducting research in the field. Methods for avoiding envenomation will be discussed, as will up-to-date information on medical treatment in the field and at medical facilities. Both native and non-native venomous reptiles will be covered.

AMPHIBIAN MONITORING IN GREAT SMOKY MOUNTAINS NATIONAL PARK

Dana Soehn, Great Smoky Mountains National Park

With 30 recorded salamander species, the park contains 8% of the world's salamanders. Several salamander species are endemic to the park and surrounding mountains, while many others reported in the park are rare or uncommon throughout their range. Additionally, 12 species of frogs and toads inhabit the park. The park lacks good data and is recently obtaining better information on the distribution, abundance, life history, and ecology of amphibian species. In addition, little is known about the effect air pollution, low pH, UVB, and other potential stressors have on these species. The park, in collaboration with USGS and various researchers, is currently developing a long-term monitoring program, conducting inventories of rare species, and evaluating monitoring methods. Researchers with USGS plan to provide the park with a geographically referenced inventory of amphibian species along with indices of abundance referenced to locations and habitat types. Monitoring methods will include the use of area-constrained searches, coverboards, and nighttime surveys. Temporary breeding ponds will continue to be monitored for both egg mass counts and larval mouthpart deformities. We also plan to monitor amphibians in areas that are potential 'hot spots' of atmospheric deposition. In addition, a 5-year study is underway linking the distribution and abundance of salamanders to different natural communities while also evaluating different sampling techniques including the use of elastomer as a permanent-marking device. Specialized searches for park-rare species are being conducted and/or developed for the following: *Cryptobranchus alleganiensis*, *Necturus maculosus*, *Eurycea junaluska*, *Eurycea lucifuga*, *Aneides aeneus*, *Desmognathus aeneus*, *Desmognathus wrighti*, and *Pseudotriton diastictus*.

EFFECTS OF TEMPERATURE ON THE EMERGENCE OF HATCHLING SLIDER
TURTLES, *Trachemys scripta*, FROM SIMULATED LABORATORY. Donald L. Thomas,
Department of Biology, The University of Memphis, Memphis TN 38152

The hatchlings of many species of North American freshwater turtles overwinter in the nest, delaying emergence until the following spring. The adaptive significance of this behavior and the cue(s) for emergence are poorly understood. In order to examine the effects of temperature on hatchling emergence, eggs of the slider turtle, *Trachemys scripta* were incubated in artificial nests in the laboratory at a temperature of 25°C. Following hatching, hatchlings in a control group were maintained at 25°C. Nests in 3 experimental treatments were subjected to a gradual decrease in temperature to 4°C beginning 15 days following hatching. Nests in each of these treatments, 1, 2, and 3, were held at 4°C for 20, 40, and 60 days, respectively, after which the temperature was gradually returned to 25°C. Control nest hatchlings emerged 21 days following hatching. Hatchlings in experimental groups 1, 2, and 3 began emergence 19, 10, and 3 days following the return of the temperature to 25°C. This study suggests that a long-duration cold temperature cue may be important in synchronizing the emergence of hatchling *T. scripta* in natural nests. Delayed emergence appears to be not a genetically hard-wired behavior in this species, but rather a phenomenon controlled by specific environmental cues.

ASSESSING DIVERSITY, ABUNDANCE AND HABITAT ASSOCIATIONS OF
SALAMANDERS IN THE GREAT SMOKY MOUNTAINS NATIONAL PARK

Erin Johnson and Ted Simons, Cooperative Fish and Wildlife Research Unit, Box 7617, North Carolina State University, Raleigh, North Carolina 27695-7617
919-515-4590 FAX 919-515-5327
ejohnso2@unity.ncsu.edu

Recent national attention surrounding worldwide amphibian declines has highlighted a need for long term amphibian monitoring and improved understanding of related habitat associations. Factors affecting distribution and abundance of salamanders are particularly interesting because salamanders are sensitive to many environmental parameters. Great Smoky Mountains National Park is interested in evaluating monitoring techniques and assessing salamander distribution and abundance as part of their long term inventory and monitoring objectives. Here, we present research design and preliminary data for an ongoing research project in Great Smoky Mountains National Park, designed to assess spatial and temporal patterns in salamander diversity and abundance associated with habitat variables, vegetative community type, and disturbance history. Understanding these associations will have important management implications. Secondly, our research design fosters exploration of bias and effectiveness of four salamander monitoring methodologies, including cover boards, litter searches, natural cover transects, and night transects. Finally, we present a preliminary mark recapture analysis for salamander populations at three localities. When complete, analysis will include survival and population density estimates that will be used to evaluate abundance indices derived from other sampling methodologies.

THE RELATIVE ABUNDANCE AND DISTRIBUTION OF *Eurycea junaluska*
(CAUDATA: PLETHODONTIDE) IN THE GREAT SMOKY MOUNTAINS
NATIONAL PARK, TENNESSEE

Elizabeth Raulerson, USGS Patuxent Wildlife Research Center
142 Phoebe Lane, Luray, Virginia 22835 lizola@hotmail.com 540-778-2314

The relative abundance and distribution of *Eurycea junaluska* and sympatric salamander species in the Tennessee portion of the Great Smoky Mountains National Park was investigated from June to September 1998. I searched low gradient streams with open canopies as these are considered to be optimal habitat for *E. junaluska*. Fifty meter transects and ten meter point searches were conducted along stream edges and stream banks of the Little River Drainage System, Fighting Creek, Pigeon River, and Abrams Creek. Previously, the range of *E. junaluska* in the Tennessee portion of the park was limited to Fighting Creek located in close proximity to park headquarters. In addition to this locality, I found that *E. junaluska* occurs in the Little River Drainage system and the Pigeon River. My results indicated *Eurycea junaluska* is most abundant where it occurred with *E. longicauda* only; *E. junaluska* was least abundant in areas where *Desmognathus quadramaculatus*, *D. monticola*, *E. wilderae*, *Gyrinophilus porphyriticus danielsi* were present.

THE CLINCH RIVER ENVIRONMENTAL STUDIES ORGANIZATION
(CRESO) John Byrd and Fred Holtzclaw, CRESO Cresosnake@aol.com

The CRESO program was created in 1988 as a cooperative venture between Oak Ridge and Anderson County Public Schools, and the Department of Energy. The school systems were concerned with providing students with better educational opportunities in the field of environmental studies and long term scientific research. Historically, environmental education in the local area had its foundation in the Summer Ecology and the Raptor Rehabilitation programs, both of which are now part of CRESO. Because much of the research carried out by CRESO is centered around amphibians and reptiles and due to the delightful show of interest by participants at the last herp conference, we felt that an overview of the program might encourage more communication between our students and others interested in the status and life history characters of our local wildlife.

Progress Report on Development of an Atlas of Reptiles for Tennessee

A. Floyd Scott

Department of Biology and Center for Field Biology
Austin Peay State University, Clarksville, TN 37044

and

Ray D. Burkett

Shelby State Community College
Memphis, TN 38174

To complement the publication *Atlas of Amphibians in Tennessee* (1996, The Center for Field Biology, Austin Peay State University), we are preparing a companion volume that will treat in similar fashion the reptilian fauna of the state. Progress made since beginning the project in spring of 1998 includes: 1) initiation of a comprehensive, systematic search for literature records, 2) the development of an up-to-date checklist of species and subspecies, 3) compilation of a list of potential sources (individuals and museum collections) of vouched records, 4) submission of scores of requests for data and permission to examine specimens, 5) receipt of several data printouts and invitations to examine specimens, 6) site visits to a limited number of collections, and 7) 300 records plotted on distribution maps representing 42 species and subspecies. Plans over the next year call for completion of the literature review; visits to all in-state collections not yet examined plus collections in Arkansas, Virginia, North Carolina, Georgia, Alabama, Mississippi and Louisiana; and continued work on the distribution maps. In the meantime, we encourage anyone with Tennessee reptile records that are vouched by specimens and/or photographs to consider archiving their information and vouchers in the Austin Peay State University Museum of Zoology. Records intended for publication will be cataloged in priority fashion following receipt of vouchers so catalog numbers can be referenced in manuscripts under preparation. Thus far, this project has been funded solely by Austin Peay State University's Center for Field Biology. Supplemental support from government and private sources that stand to benefit from the final product would be welcomed to help defray cost of travel to distant collections.

A Phenotypic and Distributional Analysis of *Nerodia Erythrogaster* in the Lower Cumberland River Basin

Angelo P. Bufalino and A. Floyd Scott

Department of Biology and Center for Field Biology
Austin Peay State University, Clarksville, TN 37044

The distribution and phenotypic characteristics of *Nerodia erythrogaster* from the Cumberland River basin were studied from 1996 to 1998. The study involved extensive field work and analysis of museum specimens (185 adults and 346 juveniles) from across the ranges of *N. e. flavigaster* and *N. e. neglecta*. Pattern and pigment characteristics were studied using various image procurement, editing, and analysis software and data analyzed using the Systat 7.0 package. Field work produced voucher specimens that eliminated an apparent distributional hiatus from southern Land Between The Lakes up river to Clarksville, Tennessee. Examination of live and museum specimens indicate the ranges of *N. e. flavigaster* and *N. e. neglecta* converge over a broad area in western Kentucky, western Tennessee, and southern Illinois, and that the taxonomic picture of this entire region is very ambiguous.

UPDATE ON "TEAMING WITH WILDLIFE" AND NATIONAL LEGISLATION AFFECTING NONGAME WILDLIFE IN TENNESSEE

FOR IMMEDIATE RELEASE

CONTACT: Tennessee Wildlife Resources Agency/Information & Education Division/
Patricia S. Warr(615) 781-6500

TDD: (615) 781-6691

Web page: www.state.tn.us/twra

DATE: October 8, 1998

NEW FEDERAL WILDLIFE FUNDING WELCOMED BY STATE

Nashville, TN. - Responding to the introduction of the Conservation and Reinvestment Act of 1998 in Washington, D.C., Robert M. Hatcher, Coordinator of Nongame and Endangered Wildlife for the Tennessee Wildlife Resources Agency (TWRA), remarked that wildlife agencies across the country will welcome this creative approach to funding our nongame management programs as never before.

"Existing royalties from offshore oil and gas would provide an attractive and viable nongame funding option to the user fee that had been proposed under *Teaming With Wildlife*. If the Conservation and Reinvestment Act does pass in 1999, Tennessee's federal share could be between \$6 and \$9 million per year. Existing bills would require only a 10 percent state match during the first five years," said Hatcher.

To supplement the funding, the TWRA would expand on successful partnership programs that now exist to continue to stretch all available dollars. Many of these funds would be matched with those from other agencies, programs, and organizations for optimum accomplishment of mutual goals.

"Land purchases would likely be maximized during the first few years of funding. While building up the resources, the TWRA would gradually and responsibly further expand a wide variety of nongame projects in the areas of conservation, recreation, and education," Hatcher said.

Proposed *conservation* projects would include:

- Average approximately 20 percent of funds for land purchase, using state-matching funds within and outside of TWRA.
- Develop measures for halting the decline of Tennessee's 70+ neotropical migrant birds.
- Form partnerships for conservation and management of greenways and other riparian habitats.
- Integrate shorebirds and wading birds with waterfowl management.
- Research causes of declines of frogs and salamanders and take corrective actions.
- Provide additional food and/or habitat for support of sandhill cranes at and/or near the Hiwassee Wildlife Refuge of East Tennessee.
- Research status, distribution and threats to alligator snapping turtles.

- Expand law enforcement for illegal sales of amphibians, reptiles, and other nongame wildlife.
- Support workshops by the UTK School of Veterinary Medicine to train veterinarians and wildlife rehabilitators about rehabilitation of injured wildlife.
- Form partnerships for installing osprey, kestrel, and other nest structures.

Hatcher also listed some *recreational and educational* proposals for Tennessee:

- Develop an inter-agency "Great River Wildlife Viewing Trail" at approximately 20 wildlife "hot spots" from Reelfoot Lake to Memphis.
- Enhance wildlife viewing and interpretive programs on the 1,800-acre Williamsport Refuge in Maury County.
- Enhance wildlife viewing and interpretation on all Wildlife Observation Areas.
- Support the existing sandhill crane (of East Tennessee) and other local wildlife viewing festivals.
- Form state and local partnerships for recreational and educational use of parks, nature centers, greenways, riparian corridors, etc.
- Provide literature, audio-visuals, and other educational materials for schools and the general public.
- Establish partnerships with state and local parks for wildlife viewing and interpretation.

For more information on the Conservation and Reinvestment Act of 1998, contact the International Association of Fish and Wildlife Agencies at Tel: (202) 624-7890 or e-mail teaming@ssso.org or check the *Teaming with Wildlife* web site at <http://www.teaming.com>. In Tennessee, contact Bob Hatcher at TWRA at (615) 781-6619 or by E-mail at: [<bhatcher@mail.state.tn.us>](mailto:bhatcher@mail.state.tn.us).

10/8/98

We can rejoice that bills have been introduced for support of such wildlife programs as described below. It is encouraging that there are already 20 **bipartisan House and Senate sponsors, including the Chairmen of both key enabling Committees. However, before we celebrate, the bills must pass, hopefully during the 1999 session. The House Bill is "H.R. 4717. The Senate Bill is "S. 2566". Your Congressmen and Senators need to hear from YOU - now AND later. You can find their mail addresses and E-mail addresses on the internet under "105th Congress House and Senate Directories" at the following web page address: <http://thomas.loc.gov/home/thomas2.html>**

Rulemaking Hearing Rules
of
Tennessee Wildlife Resources Commission

Chapter 1660-1-17
Rules and Regulations for Refuges and
Wildlife Management Areas

Amendments

Paragraph (5), subparagraph (a) of Rule 1660-1-17-.01 General Provisions for Commercial Use is amended by deleting the words "Amphibians and" so that, as amended, paragraph (5), subparagraph (a) shall read, as follows:

- (a) Crayfish may be taken for bait.

Paragraph (5), subparagraph (b) of Rule 1660-1-17-.01 General Provisions for Commercial Use is amended by deleting the words "and scientific purposes" in the first sentence so that as amended paragraph (5), subparagraph (b) shall read, as follows:

- (b) Dusky salamanders (*Desmognathus fuscus*) and crayfish may be taken and sold for bait. Other amphibians may be taken for scientific purposes upon approval of the Executive Director. Turtles of legal species and size as designated by proclamation may be taken and sold for commercial purposes. Other turtles may be taken for scientific purposes upon approval of the Executive Director.

Statutory Authority: T.C.A. §§70-1-206 and 70-4-201.

Legal Contact and/or party who will approve final copy: Sheryl Holtam, Staff Attorney
Tennessee Wildlife Resources Agency
P.O. Box 40747
Nashville, TN 37204

Contact for disk acquisition: Sheryl Holtam, Staff Attorney
Tennessee Wildlife Resources Agency
P.O. Box 40747
Nashville, TN 37204
(615) 781-6606

Signature of the agency officer or officers directly responsible for proposing and/or drafting this rule amendment.

Robert M. Todd

The roll-call vote by the Tennessee Wildlife Resources Commission on this rulemaking hearing rule amendment was as follows:

	Aye	No	Abstain
Ray Bell	_____	_____	_____
L. Earl Bentz	_____	_____	_____
Milton Hamilton	_____	_____	_____
Tom Hensley	_____	_____	_____
Beverly Wheeler Johnson	_____	_____	_____
Martha Kindle	_____	_____	_____
Curtis King	_____	_____	_____
Dr. Winston Pannell	_____	_____	_____
Charles Peavyhouse	_____	_____	_____
John F. Smolko, Jr.	_____	_____	_____
Robert H. Sterchi	_____	_____	_____
G.L. Teague	_____	_____	_____
Dan Wheeler	_____	_____	_____

Attached hereto and made a part of this record is an item entitled "Public Comments".

I certify that this is an accurate and complete copy of rulemaking hearing rule amendment, lawfully promulgated and adopted by the Tennessee Wildlife Resources Commission on the 29th

day of October, 1998.

Further, I certify that this rule amendment is properly presented for filing, a notice of rulemaking hearing has been filed in the Department of State on the 28th day of August 1998, and such notice of rulemaking hearing having been published in the September, 1998 issue of the Tennessee Administrative Register, and such rulemaking hearing having been conducted pursuant thereto on the 29th day of October, 1998.

Gary T. Myers, Secretary

Subscribed and sworn to before me this the ___ day of _____, 1998.

Notary Public

My commission expires on the 26th day of January, 2002.

All rulemaking hearing rule amendments provided for herein have been examined by the Attorney General and Reporter of the State of Tennessee and are approved as to legality pursuant to the provisions of the Administrative Procedures Act, Tennessee Code Annotated, Title 4, Chapter 5.

~~John Knox Walkup ?~~
Attorney General and Reporter

The rulemaking hearing rule amendment set out herein was properly filed in the Department of State and will become effective on the ___ day of _____, 1998.

Riley C. Darnell
Secretary of State

By: _____

TENNESSEE WILDLIFE RESOURCES COMMISSION

PROCLAMATION 98-29

AMENDING PROCLAMATION 95-17
COMMERCIAL TAKING OF FISH AND TURTLES

Pursuant to the authority granted by Title 70, Tennessee Code Annotated, and Sections 70-1-206, 70-4-107, and 70-4-119 thereof, the Tennessee Wildlife Resources Commission proclaims the following amendment to Section I. WATERS OPEN TO COMMERCIAL FISHING; Section III. GENERAL PROVISIONS and Section IV. COMMERCIAL FISHING GEAR of Proclamation 95-17, COMMERCIAL TAKING OF FISH AND TURTLES, dated the 31st day of August, 1995.

SECTION I. WATERS OPEN TO COMMERCIAL FISHING

Amend the language in number 12 under RIVERS by inserting the following after the first sentence: "Gill nets and trammel nets prohibited."

SECTION III. GENERAL PROVISIONS

Amend subsection B by deleting the following species that are listed as legal for harvest:

Goldeye	<i>Hiodon alosoides</i> (Rafinesque)
Mooneye	<i>Hiodon tergisus</i> Lesueur
River redhorse	<i>Moxostoma carinatum</i> (Cope)
Shorthead redhorse	<i>Moxostoma macrolepidotum</i> (Lesueur)

Amend the first sentence of subsection C by deleting the word "nine" and substitute the word "twelve".

Amend subsection C by deleting the following words: "Midland Smooth Sofshell *Apalone mutica mutica*" and "Eastern Spiny Softshell *Apalone spinifera spinifera*".

Amend subsection D by deleting all language in the subsection.

Amend subsection E. by relabeling as subsection D.

Amend subsection F. by relabeling as subsection E.

Amend subsection G. by relabeling as subsection F.

Amend subsection H. by relabeling as subsection G.

Amend subsection I. by relabeling as subsection H.

Amend subsection J. by relabeling as subsection I.

Amend subsection K. by relabeling as subsection J.

Amend subsection L. by relabeling as subsection K.

TENNESSEE WILDLIFE RESOURCES COMMISSION

Chairman

I certify that this is an accurate and complete copy of the proclamation lawfully promulgated and adopted by the Tennessee Wildlife Resources Commission on the ? th day of October, 1999.

Secretary

Subscribed and sworn to before me this the _____ day of _____, 1998.

Notary Public

My commission expires on the 26 day of January, 2002.

Proclamation 98-29 received and recorded this _____ day of _____, 1998.

Secretary of State