



**WAYNE H. SCHACHER**  
Zoologist - Wildlife Biologist - T&E Species

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### ***Professional Capabilities***

- Federal and State-listed Terrestrial Vertebrate Species Habitat Suitability Evaluation
- Terrestrial Vertebrate Species Sampling (Mammalia, Aves, Reptilia, Amphibia)
- Terrestrial Vertebrate Species Taxonomy (Mammalia, Aves, Reptilia, Amphibia)
- Environmental Review (26a, EDR, EA, EIS) within TVA Power Service Area
- Aquatic Habitat and Ecological Assessments; Water Quality Sampling
- Aquatic Resources Sampling (fisheries, benthic macroinvertebrate, freshwater mussel)
- Benthic Macroinvertebrate and Fisheries Taxonomy
- Planning, Proposal Formulation, Budgeting, Study Design, Implementation, Report Writing
- Technical, Semi-technical and Popular Writing Experience

### ***Education***

1974	M.S.	Ecology/Wildlife Management	University of Tennessee, Knoxville, TN
1971	B.S.	Zoology/ Entomology	SUNY College of Forestry at Syracuse, NY
1971	B.S.	Forestry	Syracuse University

### ***Specialized Training***

Freshwater Mussel Taxonomy (UTK, 1992)  
Stream Habitat Evaluation Workshop (GSMNP, 1989)  
Fish Health and Condition Assessment Course (Cohutta, GA, 1989)  
Fish Disease Shortcourse (USFWS, 1986) and Diseases of Freshwater Fishes (Auburn U., 1989)  
Wetlands Identification Workshop (TWRA, 1990)  
Aquatic Plant Management Workshop (TWRA, 1990)  
SEEN Basic Environmental Investigations Course (Atlanta, GA, 1989)

### ***Registrations***

1997 Certification in ALIS/Heritage System, Tennessee Valley Authority (Norris, TN)  
1980 Certified Wildlife Biologist, The Wildlife Society, Washington, D.C.

## *Experience*

### JAYCOR, TAD Technical, Adecco Technical: [August 1996 - November 2000]

Within TVA's Regional Natural Heritage Program, functioned as zoologist/wildlife biologist within the seven-state TVA power service area (TN, KY, VA, NC, GA, AL, MS). Responsibilities and duties were divided between field activities and writing environmental review documents. Applied knowledge of federal and state-listed vertebrate species (Mammalia, Aves, Reptilia, Amphibia), to evaluate the impacts of a wide variety of TVA environmental actions and programs on these species, and their terrestrial and aquatic habitats. These duties served to augment the TVA's ALIS Heritage database, as NEPA compliance, and to guide TVA land planning projects. Environmental Reviews were conducted on Section 26a, Environmental Decision Record, EA and EIS levels. Field activities included specific project site surveys, participation in TVA reservoir lands planning projects (Guntersville Reservoir in AL, Norris, Cherokee, Timms Ford, Boone Reservoirs in TN) and shoreline management projects. Project activities included study design and implementation, natural community assessment and habitat suitability evaluation, vertebrate species sampling, collection and taxonomy, report generation.

### Normandeau Associates, Inc.: [August-September 2000]

Served as mammalogist for Tapoco Project in North Carolina and Tennessee. Priority habitats adjacent to four reservoirs (Calderwood, Chilhowee, Cheoah, Santeetlah) were evaluated for habitat suitability for mammalian species (federal and state-listed, nongame, game). Impacts to mammalian habitats and species were projected and reported based on two water-level management scenarios (natural fluctuation, maintenance of full pool).

### Jacobs Engineering Group, Inc.: [April-September 1999]

Served as zoologist for Transuranic (TRU) Waste Remediation Facility project on Department of Energy lands in Oak Ridge, TN. Project area was evaluated for habitat suitability for federal and state-listed vertebrate (mammalian, avian, reptilian, amphibian) species. Study design targeted detection and/or collection of projected listed species. Field sampling was conducted, and results were assimilated and submitted.

### Energy Conversion Corporation: [February-September 1997]

Served as zoologist and benthic macroinvertebrate taxonomist on State of Tennessee Aquatic Resource Alteration Permit (ARAP) permit for Shields Creek, Grainger County, TN. Conducted 'Rare, Threatened and Endangered Species Review' for project area. Performed an in-stream habitat assessment, physical characterization and water quality investigation on Shields Creek. Conducted qualitative assessment of the benthic macroinvertebrate community in Shields Creek, including collection and identification and submitted a report of the benthic macroinvertebrate community structure.

### JAYCOR: [August 1992 - August 1996]

Activities were associated with an Oak Ridge National Laboratory (ORNL) contract. The Associate Environmental Biologist (AEB) position was responsible for processing, sorting and advanced taxonomic identification, enumeration and QA/QC of benthic macroinvertebrate samples. Samples were collected from streams on the DOE reservation (and reference streams), in association with monitoring requirements of NPDES permits for the Oak Ridge (TN),

Portsmouth (OH), Paducah (KY) and Utah facilities. This responsibility included procedural processing and storage for radioactively-contaminated and non-contaminated samples and hazardous waste management in a laboratory environment. Additional responsibilities included input, maintenance/QC and manipulation of the benthic macroinvertebrate laboratory's data records and databases, and concurrent maintenance of the JAYCOR laboratory's benthic macroinvertebrate reference collections.

Tennessee Wildlife Resources Agency: [August 1986 - August 1992]

The Aquatic Habitat Protection Biologist (AHP) position for TWRA's eastern region (encompassing 21 counties) was a completely new initiative. The regional AHP program was guided through continuous evolution and expansion for six years. Responsibilities critical to the success of this program included: experimental project design and implementation, collection, assimilation and analyses of data, report of findings in technical and semi-technical formats. An extensive cooperative interaction was developed with federal, state and municipal agencies and civic and private organizations to cooperatively conduct integrated ecosystem management, water quality assessment, and remediation of urban and rural point source and non-point source pollution problems and issues, within a variety of aquatic systems.

Regional AHP involvement in multi-agency (TVA, TDHE, SCS, USACE, USEPA), long-term remediation projects included: gill net, electrofishing and slat basket collection and preparation of fish-flesh samples to monitor bio-accumulation of PCBs and chlordane within seven TVA reservoir fisheries communities, with associated development of appropriate public health advisories; stream fisheries and benthic macroinvertebrate studies to assess the impact of contaminants from industrial effluents on the water quality and biological communities of a suburban stream; stream fisheries and benthic macroinvertebrate community studies, plus collection of fish-flesh samples using hoop nets, detonator cord, gill nets and electrofishing to monitor dioxin and difuran bio-accumulation in the game and non-game fish communities of the Pigeon River, dominated by effluent from a bleached-kraft paper mill; monitoring and ecological assessment of streams and tailwaters associated with minimum flow and DO improvements in TVA's reservoir releases program (Cherokee, Douglas, Norris Dams) via biological (fisheries and benthic macroinvertebrate) community and water quality evaluations, including flow-through bioassays and fish health and condition assessment methods; and a watershed evaluation (TVA, SCS, TWRA) of the affects of agricultural non-point source pollutants on the water quality and the biological (fisheries and benthic macroinvertebrate) communities in the Nolichucky River and its tributaries. In cooperation with federal OSM and state DSM, surface water quality monitoring programs and best management practices (BMP) plans were formulated prior to approval of surface mining permit applications. These plans and compliance inspections were conducted utilizing a wide range of standard field and laboratory activities. Reclamation of disturbed land and shoreline stabilization/riparian zone restoration programs was initiated with OSM, TDOC and DSM on abandoned surface mine lands.

Short-term responsibilities of the regional AHP position involved: prompt response to fish kill events including quantification of the resource loss, water sampling to gather evidence and build a prosecution case, and testimony in hearings, depositions and in state court; response to and investigation of spill events, riparian or aquatic habitat destruction or dredging complaints; review of construction proposals and surface mining NPDES permits; conduct stream surveys; presentation of information in public forums and at professional meetings. The regional AHP biologist wrote and presented the TWRA position statement at the 1988 EPA

public hearing in Knoxville, TN on the Champion International, Inc. NPDES permit for the Pigeon River. In the six years as AHP biologist, four M.S.-level University research proposals pertaining to regional water quality problems were initiated, written, budgeted, implemented and completed. Following each fiscal year, the regional AHP biologist summarized short-term activity categories and assimilated the progress on long-term projects into an annual report, which was submitted as part of the AHP position responsibility.

Tennessee Wildlife Resources Agency: [October 1974 - August 1986]

Served as a state and federal-commissioned Wildlife Officer in East Tennessee. In 1982 was recognized as Tennessee's "Wildlife Officer of the Year" by TWRA, and two conservation organizations (Tennessee Conservation League, Shikar Safari Club International). Law enforcement responsibilities included enforcing wildlife and boating safety statutes of the Tennessee Code Annotated, and federal laws pertaining to migratory birds, threatened and endangered wildlife and fisheries species. Extensive participation in wildlife and fisheries management activities on public (state and federal) and private lands and waters was given. Terrestrial habitat management and population estimation principles and methods were applied to enhance small game, big game and non-game populations. Served as intra-agency Non-game and Endangered Species Coordinator for ten years. In cooperation with the University of Tennessee Student Chapter, The Wildlife Society, a five-year wood duck management program was designed, implemented and coordinated along 29 miles of river in Knox County, TN. Data compiled over the five-year period were analyzed and results were published in a technical journal. Numerous articles on wildlife management, conservation and water quality topics were authored for publication in *Tennessee Conservationist* and *Tennessee Wildlife magazines*, and weekly newspaper articles on outdoor topics were published in county papers for seven years.

Environmental Research Center: [June - September 1974]

As a field research assistant, was responsible for conducting a mammalian species inventory on Kiawah Island near Charleston, SC. The inventory included marine, semi-aquatic and terrestrial species. Historical observations were identified through a literature search, from personal interviews with naturalists, and from examination of the study collection at the Charleston, SC Museum of Science. A variety of field activities and methods were employed spatially and temporally throughout the island habitats to observe, capture or detect "sign" to complete the inventory over a three month period. Field data were logged daily, assimilated, and results and conclusions were published in a technical paper.

***Technical Publications***

- Schacher, W.H. and M.R. Pelton. 1975. *Productivity of Muskrats in East Tennessee*. Proc. 29<sup>th</sup> Ann. Conf. SE Game and Fish Comm. St. Louis, MO. Pp. 594-609.
- Schacher, W.H. and M.R. Pelton. 1976. *Sex Ratios, Morphology and Condition Parameters of Muskrats in East Tennessee*. Proc. 30<sup>th</sup> Ann. Conf. SE Game and Fish Comm. Jackson, MS. Pp. 660-666.
- Schacher, W.H. and M.R. Pelton. 1977. *Status Report: The Mammals*. Proc. Of the First South Carolina. Endangered Species Symposium. Pp. 88-92.

- Schacher, W.H. and W.G. Minser. 1988. *Evaluations of a Wood Duck Nest Box Management Effort in East Tennessee*. Proc. 42<sup>nd</sup> Ann. Conf. SE Assoc. Fish and Wildlife Agencies. Hilton Head, SC. Pp. 337-342.
- Minser, W.G., J.M. Dabney and W.H. Schacher. 1990. *Implications of September Hunting on Wood Duck Brood Production on the Holston River in Tennessee*. Proc. 44<sup>th</sup> Ann. Conf. SE Assoc. Fish and Wildl. Ag. Pp. 206-214.
- Saylor, C.F., A.D. McKinney and W.H. Schacher. 1993. *Case Study of the Pigeon River in the Tennessee River Drainage*. Proc. Symp. Restor. Planning for the Rivers of the Mississippi River Ecosystem. Biol. Rpt. 19. Nat. Biol. Surv. USDI. Fort Collins, CO. Pp. 241-254.

### ***References***

- William G. Minser. Research Associate. Department of Forestry, Wildlife and Fisheries, University of Tennessee, P.O. Box 1071, Knoxville, TN 37901-1071; (865) 974-7126
- Dr. A. David McKinney. Chief, Environmental Services Division. Tennessee Wildlife Resources Agency, P.O. Box 10747, Nashville, TN 37204; (615) 781-6643
- Richard M. Kirk. Nongame and Endangered Species Coordinator. Wildlife Division. Tennessee Wildlife Resources Agency, P.O. Box 10747, Nashville, TN 37204; (615) 781-6643
- Dr. J. Larry Wilson. Assistant Head, Department of Forestry, Wildlife and Fisheries, University of Tennessee, P.O. Box 1071, Knoxville, TN 37901-1071; (865) 974-7126
- Travis H. Henry. Zoologist. TVA Regional Natural Heritage Program. P.O. Box 1589, 17 Ridgeway Road, Norris, TN 37828-1589; (865) 632-1570
- Robert L. Wyatt. Nongame and Endangered Species Biologist. Region IV. Tennessee Wildlife Resources Agency. 6032 Andrew Johnson Highway, Morristown, TN. 37877; (865) 587-7037