

EDUCATION

Doctor of Philosophy, May 2000
Mississippi State University, Starkville, MS
Department of Wildlife and Fisheries
Emphasis: fisheries ecology
Minor: statistics
Dissertation title: "An Evaluation of Feeding Interactions Among Dominant Piscivorous Fishes in a Southeastern Reservoir"

Master of Science, December 1995
University of Louisiana, Monroe, LA
Department of Biology
Emphasis: fish ecology
Thesis title: "The Influence of Disturbance on Community and Population Dynamics of Benthic Fishes Associated with an Oligohaline Shell Reef"

Bachelor of Science, May 1992
Louisiana College, Pineville, LA
Department of Biology
Major: biology
Minor: chemistry

EMPLOYMENT

January 2008- Present	<u>Fisheries Scientist/Modeler</u> LGL Ecological Alaska Research Associates Pineville, LA
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September 2005- November 2007	<u>Biometrician III</u> Alaska Department of Fish and Game Anchorage, AK
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August 2002- May 2005	<u>Assistant Professor of Biology</u> Louisiana College Pineville, LA
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EMPLOYMENT (continued)

January-May 2002	<u>Assistant Professor of Biology</u> Northwestern State University
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Natchitoches, LA

November 2000-
December 2001

Biometrician II
Alaska Department of Fish and Game
Juneau, AK

January 1998-
October 2000

Graduate Research Assistant
Mississippi State University
Starkville, MS

August 1996-
December 1997

Research Technician
Mississippi State University
Starkville, MS

July-August 1996

Adjunct Instructor
Belhaven College
Jackson, MS

February-August 1995

Fish Hatchery Supervisor
Louisiana Department of Wildlife and Fisheries
Lacombe, LA

August 1992-
May 1994

Graduate Teaching Assistant
University of Louisiana
Monroe, LA

RESEARCH EXPERIENCE

LGL Ecological Alaska Research Associates

Estimated abundance of coho salmon smolt outmigrating from the Chuitna River, Alaska using a two sample event Darroch mark-recapture model. Quantified the effect of turtle excluder devices (TEDs) on reducing bycatch of blacknose shark in the Gulf of Mexico penaeid shrimp fishery with negative binomial regression in a before-after-control-impact (BACI) design setting. Estimated bycatch of species associated with the snapper-grouper complex bandit reel fishery in the Southeast Atlantic using generalized linear models. Modeled run strength of sockeye salmon returning to Bristol Bay, Alaska using test fishery indices. Corrected these fishery indices for size selectivity with a selectivity model. Used a novel mark-

RESEARCH EXPERIENCE (continued)

recapture model to estimate the number of beluga whales in Cook Inlet, Alaska. Estimated variances associated with marine mammal densities in the Chukchi and

Beaufort Seas, Alaska as estimated with distance sampling from vessel based observers. Determined the relative deflection (distance moved offshore) of bowhead whales migrating through the Beaufort Sea due to oil and gas industry related activity.

Alaska Department of Fish and Game (Anchorage)

Developed sampling designs for genetic stock identification of sockeye salmon commercial harvest in Cook Inlet and Bristol Bay, Alaska. Was responsible for ensuring sample sizes were adequate for all surveys within South Central Alaska. Created new modeling algorithms for test fisheries that allowed dynamic travel times for salmon between test fisheries and enumeration projects. Developed a novel modeling approach that generated objective rules for when to end salmon enumeration projects. Performed sensitivity analyses on and incorporated the effects of various uncertainties in state variables for spawner-recruit analyses. Designed and analyzed results from a two-event mark-recapture study that utilized the Darroch estimator to account for assumption violations of the pooled-Petersen design. Reviewed statewide project operation plans and reports for statistical rigor. Supervised the biometric research of a Biometrician I and an Analyst/Programmer III.

Louisiana College

Sampled several streams in the Kisatchie National Forest, Louisiana. These data were used in various multivariate statistical techniques to determine the influence of watershed variables on stream fish assemblages. Other objectives included revising the index of biotic integrity (IBI) used for the Kisatchie Forest, developing a standardized sampling protocol, and investigating disturbance ecology. Completed a study that addressed the influence of artificial reef structures on fishes in several lakes of the Kisatchie National Forest. Reef densities and placements were compared with respect to recruitment and growth of fishes.

Alaska Department of Fish and Game (Juneau)

Estimated harvest (and associated variance) of chinook salmon stocks from recoveries of coded-wire tagged fish in fisheries of Southeast Alaska. This information was used to validate harvest estimates from a virtual population model used by the Pacific Salmon Commission (PSC) to manage chinook salmon.

RESEARCH EXPERIENCE (continued)

Developed Monte Carlo simulations to investigate the resilience of chinook

salmon to years of low spawning abundance and to identify a spawning abundance threshold below which recruitment would be reduced and fishing exploitation could protract low abundances or cause extinction. Performed sensitivity analysis on the PSC Chinook Model to identify state variables for which data need to be improved.

Mississippi State University

Dissertation research focused on whether predation and competition theories were responsible for limiting adult piscivorous fishes in Norris Reservoir, Tennessee. This research was initiated as a result of highly contentious debate over whether to stock striped bass. Modeling included fish bioenergetics, density-dependent survival, growth, and abundance estimation of prey and predators. Studied the fish assemblage of Luxapillila Creek, Mississippi. Analyzed the differences in larval fish assemblages between mid-channel and backwater habitats. Also evaluated the fish assemblages among altered and unaltered segments of Luxapillila Creek to measure the effects of channelization and the effectiveness of mitigation efforts. Conducted spatial analysis of Eagle Lake, Mississippi, to determine the effects of water level changes on fish habitat and riparian vegetation. Developed a contour map with GIS (ArcInfo software) analyses to predict how changes in water level would alter morphometric and volumetric characteristics of the lake, as well as dissolved oxygen conditions during mid-summer. Spatial analysis was also used to map the riparian vegetation and predict changes thereof given various water level management schemes.

University of Louisiana

Thesis research addressed the effects of disturbance on assemblage composition and population structure of benthic fishes associated with shell reefs in an oligohaline estuary of Louisiana. Project involved a field experiment at Louisiana Universities Marine Consortium, whereby artificial reef units were manipulated to simulate varying frequencies and severities of disturbance.

TEACHING EXPERIENCE

Louisiana College

Introduction to Biology (BI 101)
Zooology (BI 115/116)
Field Biology (BI 202)
Ecology (BI 431)

TEACHING EXPERIENCE (continued)

Northwestern State University

Biological Principles II (BI 1020/1021)
Biological Principles I (BI 1010)

Human Anatomy (ZO 1220)

Belhaven College

Introduction to Biology

PUBLICATIONS

Miranda, L. E. and S. W. Raborn. 2010. Interactions between striped bass and other gamefish in reservoirs. AFS Striped Bass Symposium Special Publication (in press).

Miranda, L. E., J. A. Hargreaves, and S. W. Raborn. 2001. Managing risk of unsuitable dissolved oxygen in a eutrophic lake. *Hydrobiologia* 457:177-185.

Miranda, L. E. and S. W. Raborn. 2000. From zonation to connectivity: fluvial ecology paradigms of the 20th century. *Polish Archives of Hydrobiology* 47:5-19.

Raborn, S. W., L. E. Miranda, and M. T. Driscoll. 2002. Effects of simulated removal of striped bass from a southeastern reservoir. *North American Journal of Fisheries Management* 22:406-417.

Raborn, S. W., L. E. Miranda, and M. T. Driscoll. 2003. Modeling predation as a source of mortality for piscivorous fishes in a southeastern U.S. reservoir. *Transactions of the American Fisheries Society* 132:560-575. (Received the **W. F. Thompson Award** from the American Institute of Fishery Research Biologists)

Raborn, S. W., L. E. Miranda, and M. T. Driscoll. 2004. Diet overlap and consumption patterns suggest potential for exploitative competition among piscivores. *Ecology of Freshwater Fish* 13:276-284.

Raborn, S. W., L. E. Miranda, and M. T. Driscoll. 2007. Prey supply and predator demand in a reservoir of the Southeastern United States. *Transactions of the American Fisheries Society* 136:12-23.

Raborn, S. W., and H. Schramm, Jr. 2003. Effects of stream alteration on fish diversity and assemblage structure in a Mississippi stream. *River Research and Applications* 19:289-301.

Raborn, S. W., T. Will, and L. E. Miranda. 2001. An assessment of larval fish density and assemblage structure between mid-channel and backwater habitats in a Mississippi stream. *Journal of Freshwater Ecology* 16:395-401.

MANUSCRIPTS IN REVIEW

Raborn, S. W., K. I. Andrews, B. J. Gallaway, J. G. Cole, and W. J. Gazey. Effects of turtle excluder devices (TEDs) on the bycatch of small coastal sharks in the Gulf of Mexico penaeid shrimp fishery. *North American Journal of Fisheries Management*.

SELECTED PRESENTATIONS

Raborn, S. W., L. E. Miranda, and M. T. Driscoll. 1999. Exploring competition between striped bass and selected predatory fishes in Norris Reservoir: interspecific predation. Annual Meeting of the Southern Division of the American Fisheries Society, Chattanooga, Tennessee.

Raborn, S. W., L. E. Miranda, and M. T. Driscoll. 1999. Exploring competition between striped bass and selected predatory fishes in Norris Reservoir: prey supply and predator demand. Annual Meeting of the Mississippi Chapter of the American Fisheries Society, Starkville, Mississippi. (Awarded **Best Student Paper**)

Raborn, S. W. and F. Pezold. 1994. Disturbance as a determinant of population size and structure of an oligohaline reef fish species. Annual Meeting of the Southwestern Association of Naturalists, Emporia, Kansas.

Raborn, S. W. and F. Pezold. 1996. The influence of disturbance on community and population dynamics of benthic fishes associated with an oligohaline shell reef. Annual Meeting of the American Society of Ichthyologists and Herpetologists, New Orleans, Louisiana.

Raborn, S. W. and H. L. Schramm, Jr. 2002. Fish assemblage response to recent mitigation of a channelized warmwater stream. Annual Meeting of the Association of Southeastern Biologists, Boone, North Carolina.

Raborn, S. W. and R. Sharma. 2005. Managing risk of low escapements for three Chinook salmon *Oncorhynchus tshawytscha* stocks based on species resilience. 35th Annual Meeting of the American Fisheries Society.

PROFESSIONAL SERVICE

Reviewer for *Fisheries Research* (2010)

Reviewer of two manuscripts for *Neotropical Ichthyology* (2003).

Reviewer for *Ecology of Freshwater Fish* (2003 and 2005).

Reviewer for *Lakes and Reservoirs: Research and Management* (2002, 2004, 2005, and 2006).

Reviewer for *Fisheries Management and Ecology* (2005).

Review for *Journal of Fish Biology* (2005).

Reviewer for *North American Journal of Fisheries Management* (2002, 2006, 2007 and 2010).

Reviewer for *ICES Journal of Marine Science* (2002, 2006, and 2008).

Reviewer for *Proceedings of the Southeastern Association of Fish and Wildlife Agencies* (1998 and 1999).

Student Paper Judge, Annual Meeting of the Louisiana Chapter of the American Fisheries Society, Biloxi, Mississippi (2002).

Member of the American Fisheries Society (1996-Present).

Member of Ecological Society of America (2002-Present).

Member of the Joint Chinook Technical Committee of the Pacific Salmon Commission (Nov 2000-Dec 2001).

Advisor to the Transboundary Technical Committee of the Pacific Salmon Commission (Dec 2000).