

CURRICULUM VITAE

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Andrew M. Lazur

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University of Maryland Center for Environmental Science
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I. Education

- 1990 **Doctor of Philosophy**
Aquaculture
Auburn University
- 1981 **Master of Aquaculture**
Auburn University
- 1979 **Bachelor of Science**
Biology
University of South Carolina

II. Professional Background

- 7/01-Present **AQUACULTURE SPECIALIST - ASSOCIATE PROFESSOR**
UNIVERSITY OF MARYLAND - CENTER FOR ENVIRONMENTAL
SCIENCES/MD SEA GRANT - HORN POINT LABORATORY
Cambridge, MD
- 1990-2001 **AQUACULTURE SPECIALIST - ASSOCIATE PROFESSOR**
UNIVERSITY OF FLORIDA FISHERIES AND AQUATIC SCIENCES
DEPARTMENT - MITCHELL AQUACULTURE DEMONSTRATION FARM
Blountstown, FL
- 1988-1990 **GRADUATE RESEARCH ASSISTANT**
AUBURN UNIVERSITY
Auburn, AL
- 1985-1988 **FACILITY MANAGER/RESEARCH COORDINATOR**
LOUISIANA STATE UNIVERSITY
Baton Rouge, LA

- 1982-1985 **PLANTATION MANAGER**
RICE HOPE PLANTATION
Georgetown, SC
- 1982 **AQUACULTURE DIRECTOR**
HORRY-GEORGETOWN TECHNICAL COLLEGE
Georgetown, SC
- 1980-1981 **RESEARCH ASSISTANT**
AUBURN UNIVERSITY
Auburn, AL

III. Awards and Special Recognition

IV. Research

A. Areas of Professional Expertise

Aquatic Ecosystem Restoration: Atlantic sturgeon restoration and hatchery production

Nutrient Management: aquatic plant culture and integrated nutrient management

Aquaculture: fish culture economics, marketing, and system technology, ornamental fish/plant production

B. Peer Reviewed Publications (previous 5 years)

1. Published and Submitted

Wallat, G.K., A.M. Lazur,, and F.A. Chapman. 2005. Carotenoids of different types and concentrations in commercial formulated fish diets affect color and its development in skin of the Red Oranda variety of Goldfish *Carassius auratus*. North American Journal of Aquaculture. (Published in January 2005 issue- 67:42-52).

Lazur, A.M. and F. Leteux. 2004. Integrated aquaculture systems for nutrient reduction in agricultural wastewater: potential and challenges. Japanese Bulletin Fisheries Resource Agency. Supplement No. 1:143-151.

Oesterling, M.J., C.M. Adams, and A.M. Lazur. 2004. Marine baitfish culture - Candidate species and considerations for commercial culture in the Southeast United States. Virginia Sea Grant Marine Resource Advisory No. 77. 27 pp.

Jacobs, J. M, A.M. Lazur, and A. Baya. 2004. Prevention and disinfection of *Mycobacterium sp.* in aquaculture. Maryland Sea Grant Extension Finfish Worksheet 9.

Lazur, A.M. and K. Roscher. 2004. Status and Economic Potential of Aquaculture in Maryland. Appendix V. in Task Force to Study the Economic Development of the Maryland Seafood and Aquaculture Industries. Maryland Department of Agriculture. 119 pp.

Lazur, A.M., J. Goldman, K. Semmens, and M.B. Timmons. 2003. Land-based aquaculture systems, engineering and technology: Opportunities and needs. Northeast Regional Aquaculture Center Publication No. 03-002.

Mims, S.D., Lazur, A.M., Chapman, F., Shelton, W.L., and B. Gomelsky. 2002. Production of sturgeon. Southern regional Aquaculture Center Publication 7200.

Adams, C.M. and A.M. Lazur. 2001. Economic Considerations for the Prospective Mudminnow Culturist in Florida. University of Florida Department of Food and Resource Economics, Publication FE 309.

Smajstrla, A.G., M.E. Griggs and A.M. Lazur. 1998. Storm water detention and discharge from aquaculture ponds in Florida. Univ. of Florida Bulletin BUL 98-5.

Lazur, A.M. and B. Britt. 1998. Recirculating pond production systems. USDA Southern Regional Aquaculture Center Publication no.455.

2. Special Publications - non-peer reviewed (previous 5 years)

Lazur, A.M. and C.M. Adams. 2005. Evaluation of production, marketing and economic potential of mud minnow *Fundulus grandis* culture. World Aquaculture Society Aquaculture America 2005 Book of Abstracts. (Accepted).

Lazur, A.M. S. Marnell, E. Ryder, T. Rippen and D. Webster. 2005. Evaluation of alternative holding and transport methods of blue crabs, *Callinectes sapidus*. World Aquaculture Society Aquaculture America 2005 Book of Abstracts. (Accepted).

C. L. Kiely, R. A. Snyder, A. M. Lazur, and J. E. Lepo. 2004. Vegetated strip evaluated for storm water effluent treatment in catfish ponds. Global Aquaculture Advocate. April 2004. 76-68.

Lepo, J.E., A.M. Lazur, R.A. Snyder, and M.E. Griggs. 2004. Evaluation of a vegetated filter strip as a best management practice for treating catfish pond stormwater effluent. World Aquaculture Society 2004 Book of Abstracts.

Rath, M. , A.M. Lazur, B.Van Heukelem, and S. Hughes. 2004. Increasing yellow perch fingerlings through off-season spawning and larval nutrition. World Aquaculture Society 2004 Book of Abstracts.

Wheaton, F., A.M. Lazur, K. Hanna , and S. VanKeuren. 2004. Water quality in identical recirculating systems managed by different aquaculturalists. 5th International Conference on Recirculating Aquaculture. Roanoke, VA. Abstract and presentation.

Lazur, A.M. and E. Ryder. 2004. Feed Training of Atlantic Sturgeon Broodstock and Sex Determination/Induced Spawning Technology Transfer. Project Final Report to MD DNR Fisheries Service.

Lazur, A.M. 2004. Off-Flavor tastes in Aquaculture. Maryland Aquafarmer. Fall Summer 2004.

Lazur, A.M. 2004. Pond Aeration Basics. Maryland Aquafarmer. Fall Summer 2004.

Lazur, A.M. Sturgeons of the Chesapeake Bay: status and restoration efforts. 2003. Maryland Sea Grant Schools Network, Vol. 5 no.2.

Lazur, A.M. 2003. Needed: a new climate for commercial aquaculture. Maryland Aquafarmer. Fall 2003.

Lazur, A.M. 2003. Finfish farming: opportunities for Maryland growers. Maryland Aquafarmer Summer 2003.

Lazur, A.M. 2003. Common calculations and conversions for water gardens and small ponds, a practical guide to calculating water volume, flow and treatment rates, and converting units of measurement. In Water Gardening and Aquatic Health Management Handbook. MD Sea Grant.

Lazur, A. M. 2002. Applications of integrated aquaculture systems for nutrient reduction in agricultural wastewater. Abstract in Proceedings of UJNR Symposium on Aquaculture and Stock Enhancement of Algae and Filter Feeders, October 2002.

Lazur, A.M. and J. Jacobs. 2002. Acute toxicity of 5% rotenone to Northern Snakehead (*Channa argus*). In Appendix of Maryland Snakehead Advisory Panel Final Report.

Adams, C.M. and A.M. Lazur. 2000. A preliminary assessment of the costs and earnings of commercial, small-scale, outdoor pond culture of Tilapia in Florida. University of Florida Department of Food and Resource Economics, Publication FE 210.

Lazur, A.M. and D.B. Pouder. 2000. Evaluation of a zero discharge pond water recirculating tank system for the production of gulf of Mexico sturgeon *Acipenser oxyrinchus desotoi*. World Aquaculture Society 2000 Book of Abstracts.

Pouder, D.B. and A.M. Lazur. 2000. Production of Gulf of Mexico sturgeon *Acipenser oxyrinchus desotoi* in flow-through versus pond recirculating tank systems. World Aquaculture Society 2000 Book of Abstracts.

Lazur, A.M. and D.B. Pouder. 2000. Growth performance of juvenile gulf of Mexico sturgeon *Acipenser oxyrinchus desotoi* using various commercial diets. World Aquaculture Society 2000 Book of Abstracts.

C. Research Grants and Contracts (previous 5 years)

1. Active

Nutrition studies in hatchery technology of clownfish and angelfish in closed marine systems. Co-P.I. USDA Northeast Regional Aquaculture Center (NRAC). 2004-2007. \$80,031.

Evaluation of nitrogen and phosphorus uptake by floating plant rafts for stormwater and other aquatic nutrient management applications. Lead P.I. Maryland Industrial Partnerships. 2004-2005. \$39,943.

Evaluation of feed training of wild-caught Atlantic sturgeon and performance of larval diets. Lead P.I. Maryland Department of Natural Resources/USFWS State Wildlife Grant and MD Sea Grant. 2004-2005. \$35,000.

Evaluation of alternative live blue crab handling practices to increase transport/storage survival. Lead P.I. Maryland Department of Natural Resources/MD Sea Grant. 2004-2005. \$16,000.

Water Garden/Aquaponics: Market and Economic Opportunities. Co-P.I. and Project Manager. USDA NRAC. \$10,000.2004-2005.

Intensive culture of the mudminnow (*Fundulus heteroclitus*) as live bait for recreational angling. Co- investigator. Virginia Fishery Resource Grant Program. 2004-2005. \$40,829.

2. Submitted Proposals

Increasing Economic and Environmental Sustainability of Aquaculture Production Systems Through Aquatic Plant Culture. Lead P.I. Full Proposal submitted to: USDA NE Sustainable Agricultural Research and Education (SARE) Program. \$159,309. 2004.

New Method for Control of Aquatic Invasive Species: Effects of Carbon Dioxide and Stack Gas Supersaturation on Stress and Survivorship. Co-investigator. A Preproposal submitted to the Sea Grant Ballast Water Technology Demonstration Program, \$175,000. 2004.

Evaluation of aquatic plant strategies in enhancement of nutrient capture in stormwater ponds. Lead P.I. Preproposal to: CICEET. \$117,050. 2004.

Enhancement of Nutrient Capture in Stormwater Ponds Through Community Planting of Native Aquatic Plants. Lead P.I., Proposal to: National Fish and Wildlife Foundation. Amount requested: \$47,892. 2004.

Enhancement and Community Education of Stormwater Nutrient Uptake Through Strategic Aquatic Planting and Applications. Lead P.I., Proposal to: National Fish and Wildlife Foundation. Amount requested: \$49,300. 2004.

Aquaculture Effluent Treatment Using Ornamental and Restoration Aquatic Plants. Co-P.I. Preproposal submitted to Northeastern Regional Aquaculture Center. \$112,719. 2004.

Saltwater Baitfish (*Fundulus heteroclitus*) Feeds and Feeding. Co-P.I. Preproposal submitted to Northeastern Regional Aquaculture Center. \$90,860. 2004.

Evaluation of an Integrated Aquatic Plant Production and High Rate Pond System for Nutrient Removal in Dairy Wastewater. Lead P.I. Proposal to: MD Agro-Ecology Center. \$186,959. 2003.

Production and Economic Evaluation of Aquatic Plants as Nutrient Reduction Treatment for Aquaculture Production Systems. Lead P.I. Proposal to: Northeastern Regional Aquaculture Center. \$127,849. 2003.

Studies to Optimize Hatchability and Larval Survival of Clownfish in Closed Marine Systems. Lead P.I. Proposal to: Northeastern Regional Aquaculture Center. \$109,858. 2002.

Market evaluation of alternative aquaculture species. Co-P.I. Maryland Experiment Station (USDA CREES funding). \$25,000. 2001.

3. Completed

Increasing yellow perch fingerling production through off-season spawning and larval nutrition. Lead P.I. Maryland Agricultural Experiment Station/ USDA CREES. \$16,000. 2003-2004.

An engineering and economic evaluation of selected commercial recirculating aquaculture production systems. Co- principal investigator. Maryland Agricultural Experiment Station/USDA CREES. \$40,000. 2002-2004.

Feed training of Atlantic sturgeon broodstock and sex determination/induced spawning technology transfer. Lead P.I. Maryland Department of Natural Resources/USFWS State Wildlife Grant and MD Sea Grant. \$41,500. 2003-2004.

Increasing yellow perch fingerling production through off-season spawning and larval nutrition. Lead P.I. Maryland Agricultural Experiment Station/ USDA CREES. \$40,000. 2002-2003.

Inland recirculating system technology development. Lead P.I. USDA NRAC. \$10,000. 2003.

Characterization and management of effluents from aquaculture ponds in Florida - a Treatment System Evaluation. Co-investigator. Florida Dept. Of Agriculture, Three Rivers RC&D, Univ. of West Florida and Escambia Soil and Water Conservation District. \$30,000. 2000-2002.

D. Invited Seminars and Presentations (previous five years)

Maryland Aquaculture and Restoration Extension Programming. Pennsylvania 2004 Aquaculture Conference. Harrisburg, PA. 2004.

Building Strategic Partnerships. UM Center for Environmental Sciences 2004 Convocation. Cambridge, MD. 2004.

Finfish and Shellfish Restoration Programs. University of Maryland System Aquaculture Symposium. Annapolis, MD. 2004.

Moderated a session and presented a seminar on aquatic plant culture and nutrient management at the East Coast Fishermen and Aquaculture Trade Show. Ocean City, MD. 2004.

Conducted a live on-line interview for the Washington Post on the introductions of northern snakehead into Maryland waters. 2004.

Fish Nutrition and Feed Management. Aquaculture America 2003. Louisville, KY.

Selecting a Culture Species. Aquaculture America 2003. Louisville, KY.

Recirculating Systems Overview. Moderator and Speaker. 2003. East Coast Fishermen and Aquaculture Trade Show. Ocean City, MD.

Applications of integrated aquaculture systems for nutrient reduction in agricultural wastewater. UJNR Symposium on Aquaculture and Stock Enhancement of Algae and Filter Feeders, Shimogama, Japan. 2002.

Live MSN NBC radio interview on snakehead introductions and its implications. 2002.

Status and trends of aquaculture in the world and US. Chesapeake Biological Lab Seminar. 2002.

Overview of recirculating aquaculture systems. Fish Expo Work Boat Atlantic. 2002.

Feeding your fish. WAS Aquaculture America 2002.

Choosing a species to raise. WAS Aquaculture America 2002.

New species to watch. East Coast Fishermen's and Aquaculture Trade Show 2002.

Recirculating systems overview. East Coast Fishermen's and Aquaculture Trade Show, 2002

Aquaculture and its prospects. Guest lecture. Washington College. ENV-399. 2002.

Northern Snakehead: linking science and management to address an invasive species. Society of Environmental Journalists Conference. Baltimore, MD October 2002.

Start-up aquaculture session. Moderator. Aquaculture America 2001 Conference. Orlando, FL, 2001.

An overview of sturgeon culture. Aquaculture America 2001 Conference. Orlando, FL, 2001.

Moderator of Aqua 101-start up aquaculture session. Aquaculture America 2000 Conference. New Orleans, LA February 2000.

Production guidelines for starting in aquaculture. Aquaculture America 2000 Conference. New Orleans, LA. February 2000.

Evaluation of a zero discharge pond water recirculating tank system for the production of Gulf of Mexico sturgeon *Acipenser oxyrinchus desotoi*. World Aquaculture Society. Nice, France. May, 2000.

Growth performance of juvenile gulf of Mexico sturgeon *Acipenser oxyrinchus desotoi* using various commercial diets. World Aquaculture Society. Nice, France. May, 2000.

E. Symposia Organized/Chaired for Professional Meetings (previous 5 years)

University of Maryland System Aquaculture Symposium. August 11-12, 2004. Co-organizer. Annapolis, MD.

Aquaculture Development Conference. August 19-20. Co-Organizer. Annapolis, MD. 2004.

Marine Baitfish Culture: Workshop on Candidate Species on the East Coast. February 2004. Co-organizer. Tampa, FL.

IV. Graduate Teaching

A. University System of Maryland Courses Taught (previous 5 years)

B. Other Courses Taught

Guest Lecturer - Presented aquaculture marketing and economics.. For MEES 698- Aquaculture. 2002, 2003, and 2004.

Guest lecturer - Aquaculture economics. ANSC-255. 2002.

VI. Graduate Student Training

1. Degrees Completed

Committee chair of Mark Rath, M.S. Degree awarded December 2004.

2. Students Currently supervised

3. Committee member (Current)

C. Foreign Students

D. External Examiner

E. Post-Doctoral Students

F. Research Internships Supervised (previous 5 years)

Sarah Marnell, 2004 REU fellowship.

Dawn Turney, 2003 Environmental Science Education Program (ESEP) intern.

VII. Staff supervised (Since 1980)

Bill Van Huekelem, Ph. D. 2001-present

Erin Ryder, M.S. 2002-present

Nancy McIntee, Sea Grant secretary. 2001-present

VII. Public Service (Previous 5 years)

A. Outside University of Maryland

1. Service to government agencies

Member of the USDA Northeastern Regional Aquaculture Center (NRAC) Technical Advisory Committee. 2002-2005.

Chair of NRAC's Recirculating Systems White Paper Development Team. 2003.

Provided technical assistance for potential development of a Sea Grant program in Latin America for NOAA International Activities Office. 2004.

Member of the MD Seafood and Aquaculture Task Force - Executive Committee. 2002-2004.

Member of the MD Seafood and Aquaculture Task Force - Aquaculture Work Group. 2002-2004.

Member of the Maryland Snakehead Advisory Panel. 2002-2003.

Member of the Maryland Invasive Species Council. 2003-present.

2. Volunteer Service to Professional Associations and Private Agencies (previous 5 years)

Member of the National Academy of Sciences 2004 Aquaculture Review Panel.

Provided technical support and adult striped bass for the 2002 and 2003 Memorial Hospital Classic Fishing Tournament.

Provided adult striped bass for the Chesapeake Maritime Museum aquarium and developed a 8 page water quality and feeding management protocol document to assist museum volunteers to prevent fish stress and mortality. 2003.

Initiated pet re-homing program in partnership with the Maryland Association of Pet Industries (MAPI) and DNR via MAPI web site. 2004.

Expanded the Mid-Atlantic Sturgeon Restoration Partnership by adding Delaware State University personnel. Partnership now consists of UMCES, DNR, USFWS, Mirant Power, DE Fish and Game and DSU.

Served as reviewer of student presentations for the World Aquaculture Society 2003 and 2004 conferences.

Served on the American Fisheries Society's Publication Awards Committee. 2002.

3. Peer review

Proposal Reviewer - USDA National Research Initiative (NRI) Competitive Grants Program. 2004.

Member of the USDA Small Business Innovation Research 2004 Aquaculture Review Panel.

Member of UMBI-BARD Review Panel. 2004.

Reviewer of three USDA Southern Regional Aquaculture Center (SRAC) Fact Sheet Publications. 2004.

Reviewed one proposal each for: USDA SRAC. 2004, USDA Tropical and Subtropical Research Center and CICEET. 2004.

Reviewed one paper for the American Fisheries Society. 2003.

Reviewed one proposal each for: CINEMAR program and Puerto Rico Sea Grant. 2003.

Reviewed three fact sheet publications for USDA- SRAC. 2003.

Reviewed one manuscript each for: Journal of Applied Aquaculture, Kluwer Academic Publishers, and USDA Southern Regional Aquaculture Center. 2002.

Reviewed two manuscripts for Journal of Applied Aquaculture. 2001

Reviewed one manuscript each for: Kluwer Academic Publishers, and Journal of World Aquaculture Society. 2001.

Reviewed a proposal for the Maryland Center for Agro-Ecology, Inc. 2001.

B. University of Maryland (previous 5 years)

Serve as MD Sea Grant Aquaculture and Restoration Focus Team Leader and developed 2004-2006 Focus Team Plan of Work. 2004.

Provided striped bass for 12 schools in 2002-2004 for MD Sea Grant Aquaculture in Action Program.

Served as lecturer for Aquaculture in Action from 2002-2004.

Served as proposal reviewer for MD Sea Grant Extension Omnibus process from 2002-2004.

Served on UM Maryland Agricultural Experiment Station (MAES) Aquaculture Panel. Assisted in development of USDA rfp for relocation of NRAC. UMD selected as host institution in Jan. 2005.

Conducted a seminar to teachers in the Environmental Science Education Summer program on aquaculture and recirculating production systems, 2003.

Organized and conducted:

1) 3 workshops on Water Gardening and Aquatic Health Management, 2002-2004;

- 2) 2 workshops on Community Pond Management, 2004;
- 3) 1 workshop/training on sturgeon sex determination and induced spawning technology, 2003;
- 4) 1 workshop for Maryland aquafarmers on recirculating system technology, 2002; and
- 5) 1 roundtable session with Maryland aquafarmers identifying research priorities. 2001.

C. Laboratory Committees (previous 5 years)

Member of the Education Committee 2002-present.

Chair of 2004 Open House Committee.

Member of UMCES HPL/BARC aquatic plant/SAV initiative. 2004 to present.

Participant on AREL Team to select decorative photos. 2004.

Participant on Aquatic Ecosystem Restoration Institute Development Team. 2003-2004.

Participant of HPL Outreach Committee. Approximate attendance 450. 2004 to present.

Member of the Post-Doc Position Search Committee. 2001.

Other Service to UMCES:

Served as technical bid contact for AREL RAS's (shellfish and finfish) involving review of engineering specifications, securing estimates, writing of bid language, and verifying changes with contractor.

Conducted two television interviews on sturgeon and marine ornamental fish with WBOC of Salisbury. 2004.

Provided tours of AREL for over 350 students, teachers and individuals including Chesapeake Bay Trust, MD legislators, Gifted and Talented Program, Land and Water Connection, and Living Classroom. 2004.

Provided tours for over 230 people including Living Classroom, and Land and Water Conservation student groups, two home school tours, and individual producer tours. 2003.

Provided tours for over 145 people including Living Classroom, and Land and Water Conservation student groups, individual producer tours and HPL Open House. 2002.

Providing tours for 65 people including two aides of the Governor, Living Classroom, two Land and Water Conservation student groups, AREL ground breaking, and a Japanese research exchange group. 2001.

Conducted one television interview with WBOC 16 of Salisbury describing the impact of AREL and restoration and aquaculture. 2001

Presented an overview of HPL's aquaculture program to a Dorchester chapter of a state fishing organization. 2001.