

CURRICULUM VITAE

Amanda Leah Southwood

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Current Position

Assistant Professor Department of Biology and Marine Biology
University of North Carolina at Wilmington

Academic Qualifications

- 2002 Ph.D. Zoology, University of British Columbia, Vancouver, BC, Canada
(Advisor - Dr. David R. Jones)
“The effects of seasonal cold exposure on metabolism and behavior of juvenile green sea turtles (Chelonia mydas)”
- 1997 M.Sc. Zoology, University of British Columbia, Vancouver, BC, Canada
(Advisor - Dr. David R. Jones)
“Heart rates and diving behavior of the leatherback sea turtle (Dermochelys coriacea)”
- 1993 B.Sc. Marine Biology, Auburn University, Auburn, AL, USA
Magna cum laude

Research Experience

- 2004 – 2005 Associate Researcher (Advisor – Dr. J. Yonat Swimmer)
NOAA Fisheries & The Joint Institute for Marine and Atmospheric Research,
University of Hawaii
Chemical ecology of sharks and sea turtles – implications for by-catch reduction in Pacific longline fisheries
- 2003-2004 Post-Doctoral Fellow (Advisor – Dr. J. Yonat Swimmer)
NOAA Fisheries & The Joint Institute for Marine and Atmospheric Research,
University of Hawaii
Behavioral and physiological responses of loggerhead turtles to olfactory stimuli
- 1994-2002 Graduate Research Assistant (Advisor – Dr. David R. Jones)
Department of Zoology, University of British Columbia
Diving physiology and thermal ecology of sea turtles
- 1993-1994 Principle Laboratory Technician (Supervisor – Dr. Charles Mactutus)
Tobacco and Health Research Institute, University of Kentucky
Neurological and physiological effects of tobacco smoke on pregnant mothers and their offspring
- 1991-1992 Research Assistant (Advisor – Dr. Stephen Kempf)
Research Experience for Undergraduates Grant (NSF), Department of Biology,
Auburn University
Physiological and morphological aspects of the symbiotic relationship between zooxanthellae and the nudibranch Berghia verrucicornis
- 1990 Assistant Laboratory Technician (Supervisor – Dr. James Wojiehowski)
Environmental Health Research and Testing, Lexington, KY
Sub-chronic toxicity studies with rodents

Teaching Experience

- 2005-2009 Lecturer – Department of Biology and Marine Biology, University of North Carolina at Wilmington, *Principles of Biology – Cells (BIO204)*, *Animal Physiology (BIO345)*, *Sea Turtle Biology and Conservation (BIO495)*
- 2000-2003 Facilitator - Department of Zoology, University of British Columbia
Advanced Topics in Comparative Physiology (ZOOL503)
- 2001-2002 Lecturer - Department of Zoology, University of British Columbia
Comparative Physiology (BIOL454)
- 2000-2002 Problem Based Learning (PBL) Tutor - Faculty of Medicine, University of British Columbia, *Principles of Human Biology*, *Cardio-Respiratory Physiology*
- 2000-2001 Guest Lecturer - Department of Zoology, University of British Columbia
Animal Physiology (BIOL353), *Comparative Physiology (BIOL454)*
- 1996-1998 Laboratory Assistant - Department of Zoology, University of British Columbia
Human Anatomy and Physiology (BIOL153), *Vertebrate Anatomy (BIOL204)*

Informal Teaching Activities

- 2003 – 2004 Volunteer Marine Educator at the University of Hawaii Aqua Camp – spoke with grade school children (ages 4-10) about the natural history of sea turtles and organized activities to teach children about marine conservation issues
- 2000 – 2001 Trained undergraduate assistants in methods of capturing and handling sea turtles under field conditions at a study site on the Great Barrier Reef, Australia
- 1998 – 1999 Supervised undergraduate students taking Special Problems in Zoology (ZOOL 500) course for credit. Students were trained to collect and analyze physiological and behavioral data from captive green sea turtles
- 1996-1997 Trained Earthwatch volunteers to monitor nesting activity and collect morphometric data from leatherback turtles laying eggs at Playa Grande, Costa Rica

Peer-reviewed Publications

Southwood, A.L., Fritches, K., Brill, R.W., Swimmer, J.Y. 2008. Sound, chemical, and light detection in sea turtles and pelagic fishes: sensory-based approaches to bycatch reduction in longline fisheries. *Endang. Species Res.* 5: 225-238.

Southwood, A.L., Higgins, B.M., Brill, R.W., Swimmer, J.Y. 2006. Chemoreception in loggerhead sea turtles. *In Sea Turtle and Pelagic Fish Sensory Biology: Developing Techniques to Reduce Sea Turtle Bycatch in Longline Fisheries.* (Eds. Y. Swimmer and R. Brill). U.S. Department of Commerce, NOAA Technical Memorandum, NOAA- NMFS-PIFSC-7: p41-56.

Southwood, A.L., Reina, R.D., Jones, V.S., Speakman, J.R., and Jones, D.R. 2006. Seasonal metabolism of juvenile green turtles at Heron Island, Australia. *Can. J. Zool.* 84(1): 125-135.

Southwood, A.L., Andrews, R.D., Paladino, F.V., and Jones, D.R. 2005. Effects of diving and swimming behaviour on body temperatures of leatherback sea turtles in tropical seas. *Physiol. Biochem. Zool.* 78(2): 285-297.

Jones, D.R., **Southwood, A.L.**, Andrews, R.D. 2004. Energetics of Leatherback Sea Turtles. *In* Experimental Approaches to Conservation Biology. Gordon, M.S. and S. M. Bartol (eds). Berkeley. University of California Press, Ltd. pp 66-82.

Southwood, A.L., Darveau, C.A., Jones, D.R. 2003. Metabolic and cardiovascular adjustments of juvenile green turtles to seasonal changes in temperature and photoperiod. *J. Exp. Biol.* 206: 4521-4531.

Southwood, A.L., Reina, R.D., Jones, V.S., and Jones, D.R. 2003. Seasonal diving patterns and body temperatures of juvenile green turtles at Heron Island, Australia. *Can. J. Zool.* 81(6): 1014-1024.

Southwood, A.L., Andrews, R.D., Lutcavage, M.E., Paladino, F.V., West, N.H., George, R. H., and Jones, D.R. 1999. Heart rates and diving behaviour of leatherback sea turtles in the Eastern Pacific Ocean. *J. Exp. Biol.* 202:1115-1125.

Selected Presentations

- 2009 Keynote speaker at Old Dominion University, Dept. of Biology graduate student symposium. “*Thermal biology of leatherback sea turtles*”
- 2007 Seventh International Congress of Comparative Biochemistry and Physiology. Salvador, Brazil. “*Physiology and behavior of migration in reptiles*”
- 2007 University of New Hampshire, Durham, NH, USA
“*Thermoregulation in leatherback turtles*”
- 2006 Duke University Marine Laboratory, Beaufort, NC, USA
“*Thermoregulation in leatherback turtles: to be hot or not?*”
- 2005 Pacific Islands Fisheries Science Center, NOAA Fisheries, Honolulu, HI, USA
“*Seasonal effects on metabolism and behavior of green sea turtles*”
- 2004 Department of Zoology, University of Hawaii, Honolulu, HI, USA
“*Thermal ecology of sea turtles: acclimatization, thermoregulation, and everything in between*”
- 2004 55th Annual Tuna Conference, Lake Arrowhead, CA, USA
“*Chemoreception in sea turtles: implications for interactions with fisheries*”
- 2004 Western Pacific Fisheries Council, Honolulu, HI, USA
“*Chemoreception in sea turtles: implications for interactions with fisheries*”
- 2002 The Power of Comparative Physiology: Evolution, Integration, and Application, San Diego, CA, USA
“*Seasonal changes in metabolism and behavior of green sea turtles*”
- 2001 Canadian Committee on Animal Care, Vancouver, BC, Canada
“*Working with endangered species: ethical considerations and international law*”
- 2001 21st Annual Symposium on Sea Turtle Conservation and Biology, Philadelphia, PA, USA
“*Effects of seasonal temperature variation on metabolism, heart rate, and blood flow distribution in green sea turtles*”
- 1999 5th International Congress of Comparative Physiology and Biochemistry, Calgary, AB, Canada
“*Body temperature of leatherback turtles during the internesting interval*”
- 1999 Experimental Biology (FASEB), Washington, DC, USA
“*Heart rates of leatherback turtles during the internesting interval*”

- 1998 Canadian Society of Zoologists, Kelowna, BC, Canada
“Heart rates and diving behaviour of leatherback turtles at sea”
- 1997 17th Annual Symposium on Sea Turtle Conservation and Biology,
 Orlando, FL, USA
*“Heart rates and diving behaviour of the leatherback sea turtle during the
 interesting interval”*

Funded Proposals

- 2009 “Timing and pathways of fall migrations for juvenile green sea turtles in Back, Core, and Pamlico Sounds, NC”. Southwood, A. McNeill, J., and Willis, E. North Carolina Sea Grant, Fisheries Resource Grants. Funded in the amount of \$44,590
- 2009 “Diamondback terrapin distribution and habitat utilization in the lower Cape Fear River: Request for Y2 funds”. Southwood, A. and Wolfe, J. North Carolina Sea Grant, Blue Crab Research Program. Funded in the amount of \$43,998
- 2009 “Sea Turtle Nesting Activity on Masonboro Island, NC”. Southwood, A.L. North Carolina Coastal Reserve (NERR). Funded in the amount of \$5,801.
- 2008 “Diamondback terrapin distribution and habitat utilization in the lower Cape Fear River”. Southwood, A. and Wolfe, J. North Carolina Sea Grant, Blue Crab Research Program. Funded in the amount of \$35,763
- 2008 “Sea Turtle Nesting Activity on Masonboro Island, NC”. Southwood, A.L. North Carolina Coastal Reserve (NERR). Funded in the amount of \$5,393.
- 2007 “Upgrade to Animal Physiology Laboratory”. Koopman, H.N. and Southwood A.L. UNCW Biology and Marine Biology Equipment Committee. Funded in the amount of \$2,669.
- 2007 “Sea Turtle Nesting Activity on Masonboro Island, NC”. Southwood, A.L. North Carolina Coastal Reserve (NERR). Funded in the amount of \$5,595.
- 2006 “Biochemical profiling of sea turtles incidentally captured during commercial longline fishing operations”. Southwood, A.L. NOAA Pacific Islands Fisheries Science Center. Funded in the amount of \$18,470.
- 2006 “Health status, post-release behavior, and survivability of sea turtles incidentally captured in the gillnet fishery of the Lower Cape Fear River”. Southwood, A.L. and Wolfe, J. North Carolina Sea Grant (FRG). Funded in the amount of \$100,418.
- 2006 “Leatherback turtle foraging habitat in the North Atlantic Ocean: Implications for fisheries interactions”. Southwood, A.L. and Kirby, D. Large Pelagics Research Center (UNH). Funded in the amount of \$178,032.
- 2006 “Refining mortality estimate for sea turtles captured in fishing gear: an assessment of the physiological and behavioral consequences of entanglement”. Southwood, A.L. UNCW Summer Research Initiative. Funded in the amount of \$3,500.
- 2006 “Analysis of heat shock proteins as indicators of oxidative stress in sea turtles”. Southwood, A.L. UNCW Cahill Award. Funded in the amount of \$2,500.
- 2006 “Sea Turtle Nesting Activity on Masonboro Island, NC”. Southwood, A.L. North Carolina Coastal Reserve (NERR). Funded in the amount of \$5,000.
- 2006 “Upgrade to Animal Physiology Laboratory”. Koopman, H.N. and Southwood A.L. UNCW Biology and Marine Biology Equipment Committee. Funded in the amount of \$3,721.

Scholarships and Awards

2006	Charles L. Cahill Award for Faculty Research and Development (\$2,500) University of North Carolina at Wilmington
1999	Proctor and Gamble Professional Opportunities Award (\$500) American Physiological Society
1998-2000	University Graduate Fellowship (\$36,000) University of British Columbia
1998	McLean Fraser Summer Research Fellowship (\$8,000) University of British Columbia
1996	Kit Malkin Award for Studies in Marine Science (\$1,000) University of British Columbia
1997	Archie Carr Award for Best Student Paper (\$300) 17 th Annual Symposium on Sea Turtle Biology and Conservation
1994-1996	University Graduate Fellowship (\$33,000) University of British Columbia
1989 – 1992	Kincaid Academic Scholarship (\$8,000) University of Kentucky and Auburn University

Professional memberships

American Physiological Society	American Society of Ichthyologists and Herpetologists
Sea Turtle Society	Society for Integrative and Comparative Biology

Peer-Reviewer

Journal of Experimental Biology	Physiological and Biochemical Zoology
Journal of Animal Ecology	Journal of Experimental Marine Biology and Ecology
Biological Conservation	Comparative Biochemistry and Physiology
Endangered Species Research	Chelonian Conservation and Biology
Biological Reviews	Marine Ecology Progress Series

Research Interests

My research revolves around the central question of how animals function in their environment. I have been involved in a wide variety of studies, ranging from diving physiology to chemical ecology, but am particularly interested in the thermal biology of marine reptiles. Past work in this area of specialization includes laboratory and field studies of the effects of seasonal changes in temperature on metabolism, respiration, heart rate, and behavior of juvenile green sea turtles, and an investigation of the effects of diving and swimming patterns on body temperatures of leatherback sea turtles. I have a strong interest in applying results from objective scientific research to promote sound management and conservation of endangered species, and have worked with collaborators in government, academia, and non-profit organizations towards this goal.