

STEPHANIE L. WATWOOD
Postdoctoral Investigator
Woods Hole Oceanographic Institution

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EDUCATION

- 2003 Ph.D., Biological Oceanography, Joint degree from the Woods Hole Oceanographic Institution and the Massachusetts Institute of Technology. Thesis: *Whistle use and whistle sharing by allied male bottlenose dolphins, Tursiops truncatus*, Peter Tyack, Senior Scientist, Advisor.
- 1997 B.S., Biological Sciences, high distinction, University of Nebraska-Lincoln. Honors Thesis: *Host specificity of the gregarine parasite (Gregarina triboliorum) in flour beetles (Tribolium spp.)* John Janovy, Jr., Professor, Advisor.

RESEARCH EXPERIENCE

- 2003-present Postdoctoral Investigator: *Woods Hole Oceanographic Institution*. Analyzed data on vocal communication in sperm whales, bottlenose dolphins, and elephants
- 1997-2003 Graduate Research Assistant: *Woods Hole Oceanographic Institution, Massachusetts Institute of Technology*. Designed and carried out projects examining social behavior and communication in dolphins and the effect of anthropogenic noise on cetacean behavior
- 1996-1997 Research Assistant: *University of Nebraska-Lincoln*. Designed and ran experiments investigating cognitive maps in food-caching birds
- 1996 Research Assistant: *University of Nebraska-Lincoln*. Assisted with lab activities for animal behavior lab studying mating behavior in tropical fish
- 1996 Intern: *Mote Marine Laboratory*. Collected and analyzed photo-ID, life history and behavior data for a study on manatees
- 1994-1996 Research Assistant: *University of Nebraska-Lincoln*. Designed and ran experiments and analyzed data examining parasite specificity in flour beetles and parasite community ecology in freshwater minnows

TEACHING EXPERIENCE

- 2004-2005 Instructor: *Marine Studies Consortium*, Courses: *Biology and Conservation of Whales* and *Introduction to Marine Mammals*. Consortium of Boston area universities coordinated through Brandeis University and Northeastern University.
- 1999-2002 Mentor/Supervisor: Trained and provided daily instruction to 20 college-aged research assistants.
- 1999-2003 Guest lecturer: Gave guest lectures to Marine Biological Laboratory and New England Aquarium courses on marine mammal sound production, communication, and vocal learning.
- 1996-1997 Mentor: *Lincoln, Nebraska Public Schools*. Designed curriculum and taught daily science class for a highly gifted elementary school student
- 1996 Curriculum Assistant: *University of Nebraska-Lincoln*. Assisted in the development of a laboratory manual for a new biodiversity course
- 1996 Teaching Assistant: *University of Nebraska-Lincoln*. Supervisor: Professor Alan Kamil. Field Animal Behavior (1 section). Guided students in experiments,

graded reports and exams, and supervised field projects at the Cedar Point Biological Station in western Nebraska

- 1996 Teaching Assistant: University of Nebraska-Lincoln. Supervisor: Assistant Professor Bill Glider. Taught Introductory Biology Lab (2 sections). Gave short lectures, guided students in experiments, and graded reports and exams
- 1995-1997 Teaching Assistant: University of Nebraska-Lincoln. Supervisor: Professor John Janovy, Jr. Taught Introductory Zoology Lab (5 sections). Gave short lectures, guided students in experiments, and graded exams

PUBLICATIONS

- In prep. Owen, E.C.G. and **Watwood, S.L.** Behavioral indicators of the reproductive advantages of alliance formation in male bottlenose dolphins, *Tursiops truncatus*, in Sarasota Bay, Florida. *Animal Behaviour*.
- In prep. **Watwood, S.L.**, Tyack, P.L., Miller, P.J.O., and Johnson, M.P. Contexts of coda production during diving and surfacing cycles of individual sperm whales. *Animal Behaviour*
- In review **Watwood, S.L.**, Madsen, P.T., Miller, P.J.O., Johnson, M. and Tyack, P.L. Deep-diving foraging behavior of sperm whales (*Physeter macrocephalus*). *Journal of Animal Ecology*.
- 2005 **Watwood, S.L.**, Owen, E.C.G., Wells, R.S., and Tyack, P.L. Signature whistle use by free-swimming and temporarily restrained bottlenose dolphins. *Animal Behaviour*.69: 1373-1386
- 2005 Poole, J.H., Tyack, P.L., Stoeger-Horwarth, A., and **Watwood, S.L.** Elephants capable of vocal learning. *Nature*, 434: 455-456.
- 2004 **Watwood, S.L.**, Tyack, P.L., and Wells, R.S. Whistle sharing in paired male bottlenose dolphins, *Tursiops truncatus*. *Behavioral Ecology and Sociobiology*. 55(6): 531-543.
- 2003 **Watwood, S.L.** Whistle use and whistle sharing by allied male bottlenose dolphins, *Tursiops truncatus*. Ph.D. Dissertation, MIT/WHOI Joint Program.
- 1997 **Watwood, S.L.**, Janovy, Jr, J., Peterson, E., and Addison, M.A. *Gregarina triboliorum* (Eugregarinida: Gregarinidae) n. sp. from *Tribolium confusum* and resolution of the confused taxonomic history of *Gregarina minuta* Ishii, 1914. *Journal of Parasitology*. 83: 502-507.

PAPERS PRESENTED

- 2005 Poole, J.H., Tyack, P.L., Stoeger-Horwath, A.S., and **Watwood, S.L.**, Vocal learning by African savannah elephants. Conference on Animal Social Learning. St. Andrews, Scotland.
- 2005 **Watwood, S.L.**, Miller, P.J.O., Johnson, M., Madsen, P.T., and Tyack, P.L. Deep diving and foraging behavior of sperm whales (*Physeter macrocephalus*). 19th Conference of the European Cetacean Society. La Rochelle, France.
- 2005 **Watwood, S.L.**, Miller, P.J.O., Johnson, M., Madsen, P.T., and Tyack, P.L. Deep diving and foraging behavior in sperm whales, *Physeter macrocephalus*. Minerals Management Service Information Transfer Meeting. New Orleans.
- 2004 **Watwood, S.L.**, Tyack, P.L., and Johnson, M. Coda production in sperm whales, *Physeter macrocephalus*. 2nd Annual Boston Behavior Club Woods Hole Symposium. Woods Hole.

- 2003 **Watwood, S.L.**, Owen, E.C.G., Wells, R.S., and Tyack, P.L. Signature whistle use by free-swimming and temporarily restrained bottlenose dolphins. 15th Biennial Conference on the Biology of Marine Mammals, Greensboro.
- 2003 Owen, E.C.G., **Watwood, S.L.**, Wells, R.S., and Duffield, D.A. Reproductive and ecological functions of adult male alliances in bottlenose dolphins, *Tursiops truncatus*, in Sarasota Bay, Florida. 15th Biennial Conference on the Biology of Marine Mammals, Greensboro.
- 2003 **Watwood, S.L.**, Tyack, P.L., and Wells, R.S. Whistle sharing in paired male bottlenose dolphins, *Tursiops truncatus*. 1st International Conference on Acoustic Communication in Animals. College Park.
- 2003 **Watwood, S.L.**, Tyack, P.L., Owen, E.C.G., and Wells, R.S. Signature whistle production by free-ranging male bottlenose dolphins. 17th Conference of the European Cetacean Society. Las Palmas de Gran Canaria, Spain.
- 2001 **Watwood, S.L.**, Owen, E.C.G., Miller, P.J.O., and Tyack, P.L. Using a hydrophone array to examine use of sound by bottlenose dolphins in social contexts. 14th Biennial Conference on the Biology of Marine Mammals, Vancouver.
- 1999 **Watwood, S.L.**, Tyack, P.L., and Wells, R.S. Signature whistle sharing among allied male bottlenose dolphins. 13th Biennial Conference on the Biology of Marine Mammals, Maui.
- 1996 **Watwood, S.L.** and Peterson, E. The septate eugregarine parasites of *Tribolium* spp.: Resolution of a confused taxonomic history. Southwestern Association of Parasitologists, Lake Texoma.
- 1996 Peterson, E. and **Watwood, S.L.** Parasite assemblages of the freshwater minnow *Cyprinella lutrensis* – Ecological influences on distribution structuring. Southwestern Association of Parasitologists, Lake Texoma.

REPORTS WRITTEN

- 2004 Johnson, M., **Watwood, S.**, Madsen, P.T., Aguilar de Soto, N., Quero, M.E., and Tyack, P.L. Sperm Whales in the North Atlantic: Final Report - DTAG Effort. Report for NEFSC-NMFS, *Delaware Cruise*.

PROPOSALS FUNDED

- 2000 **Watwood, S.L.** and Tyack, P.L. Playback experiments to demonstrate contextual usage of shared whistles by allied male bottlenose dolphins, *Tursiops truncatus*. NSF Doctoral Dissertation Improvement grant \$9975 Funded April 2001
- 2000 **Watwood, S.L.** Whistle usage and whistle sharing by allied male bottlenose dolphins, *Tursiops truncatus*. WHOI Ocean Ventures Fund \$4100 Funded June 2000
- 1999 Tyack, P.L., Samuels, A., Thomas, R.E., and **Watwood, S.L.** Social functions of signature whistles and whistle imitation in bottlenose dolphins, *Tursiops truncatus*. NSF \$192,163 Funded September 1999
- 1998 Tyack, P.L. and **Watwood, S.L.** Social functions of signature whistle imitation in male bottlenose dolphins in Sarasota, Florida. National Geographic Society \$19,365 Funded April 1999

FELLOWSHIPS RECEIVED

- 1997-1999 National Science Foundation Traineeship in Coastal Processes

MEMBERSHIPS

Society for Marine Mammalogy, European Cetacean Society, Acoustical Society of America

REVIEWER

National Science Foundation, Canadian Journal of Zoology, EUR-OCEANS

RELEVANT COURSEWORK

- Biological Oceanography
- Chemical Oceanography
- Marine Geology and Geophysics
- Benthic Ecology
- Observational Physical Oceanography
- Marine Animal Sensory Systems
- Marine Mammal Anatomy
- Animal Behavior
- Behavioral Ecology
- Cognitive Psychology
- Biopsychology
- Evolutionary Psychology
- General Zoology
- Vertebrate Zoology
- Ichthyology
- Comparative Vertebrate Anatomy

INVITED LECTURES GIVEN

- 2005 *Parroting, Aping...Elephanting?* WHOI Associates Afternoon of Science, Woods Hole Oceanographic Institution.
- 2004 *Social communication and behavior in marine mammals.* MIT Alumni group, Woods Hole Oceanographic Institution.
- 2003 *Sound production and communication in marine mammals.* Marine Mammal Course, New England Aquarium
- 2003 *They're not just whistling Dixie...Why do male bottlenose dolphins whistle?* WHOI Associates Afternoon of Science, Woods Hole Oceanographic Institution.
- 2002 *Vocal learning in cetaceans.* Biology Department, Woods Hole Oceanographic Institution.
- 2000 *From Tribolium to Tursiops.* Trustees meeting, Woods Hole Oceanographic Institution.
- 2000 *Vocal learning.* Marine Mammal Course, Boston University Marine Program.

CRUISES AND FIELD WORK

- 2003 Effects of whale-detecting sonar on migration behavior of gray whales, San Luis Obispo, CA. Project setup and data collection
- 2001-2002 Whistle use by male bottlenose dolphins in Sarasota, Florida. Project design, setup, and data collection and analysis
- 2001 Signature whistle use by captive bottlenose dolphins in Marathon, Florida. Project design, setup, and data collection
- 1999-2000 Signature whistle imitation among male bottlenose dolphins in Sarasota, Florida. Project design, setup, and data collection and analysis
- 1998 Photo ID of bottlenose dolphins in Sarasota, Florida. Data collection
- 1998 Effects of LFA SONAR on migration behavior of gray whales, San Luis Obispo, CA. Project setup and data collection

SKILLS

Proficiency in Matlab, Adobe Illustrator, Adobe Audition, Statistica, Microsoft Word, Microsoft Excel, Microsoft Access

Field experience with many terrestrial (birds, reptiles, insects) and aquatic (cetaceans, manatees, fish) species

Experience with many types of sound recording and offloading/digitizing systems
Experience operating a hydrophone array and beamforming algorithm
Proficient at operating small powerboats: Primary experience with a 22.2 ft. center console Grady White, 16.5 ft HOBBO houseboat, and 20 ft center console Mako.
Experience with Photo-ID and individual identification of animals
VHF radio tracking (both daytime and nighttime) of bottlenose dolphins: involved localization and following of individuals
Experience with focal animal data sampling
Field experience operating a theodolite
Experience operating handheld fish seining nets
Coast Guard Power Squadron course attended
Proficient at soldering and minor electrical work
Open water diver certified
Security clearance: Secret

REFERENCES

Peter Tyack

Senior Scientist and
Walter A. and Hope Noyes
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Randall Wells

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