

Second International Conference on Acoustic Communication by Animals
Corvallis, Oregon
August 12-15, 2008

FINAL REPORT

Pre-Conference Publicity

The conference was announced at several prior scientific meetings:

- The Acoustical Society of America (Salt Lake City, June 2007; New Orleans, December 2007; Paris, June 2008)
- The Third International Conference on Detection and Classification of Marine Mammals using Passive Acoustics (Boston, July 2007)
- The International Conference on the Effects of Noise on Aquatic Life (Nyborg, Denmark, August 2007)
- The International BioAcoustic Congress (Pavia, Italy, September 2007)

The conference was also announced through postings to relevant electronic mailing lists:

- the bioacoustics list (Bioacoustics-L@cornell.edu)
- ABSnet of the Animal Behavior Society (absnet@abs.animalbehavior.org)
- the Animal Behaviour Mailing List (Animal-Behaviour@jiscmail.ac.uk)
- the SOCIOBIO list (listserv@sjuvn.stjohns.edu)
- the ETHOLOGY list (listserv@searn.sunet.se)
- the APPLIED-ETHOLOGY list (applied-ethology-request@sask.usask.ca)

Notices about the conference were also placed in journals and newsletters:

- The Journal of the Acoustical Society of America
- Animal Behaviour
- Ethology
- Bioacoustics
- the ASA's *Echoes* newsletter
- ABSnet of the Animal Behavior Society

The website for the conference (<http://oregonstate.edu/conferences/animalcommunication2008/>) received a total of 7,361 visits and 10,858 page views, averaging about an hour per visit.

Attendance and Presentations

A total of 241 people attended, of which 108 (45%) identified themselves as students. In all, 178 papers representing a wide variety of subjects, taxa and methodologies were submitted for consideration, and 171 were accepted for presentation: 96 oral and 75 poster. Birds, marine mammals, fish and bats were the predominant taxa represented: 42 bird papers, 38 cetacean papers, 9 pinniped papers, 19 fish papers, 13 bat papers. Papers on amphibians, canids, felids, primates, elephants, insects, rodents, and ungulates were also submitted. Four papers were specifically about environmental noise impacts and another four were specifically about methodology. Subjects included cognition/language, signal design, communication in noisy environments, development and evolution of animal communication, modern techniques in

measuring and analyzing complex animal sounds, effects of anthropogenic sounds on animals, mimicry, new equipment/software, and common trends in sound production mechanisms.

Of the 96 oral presentations, 24 (25%) were from invited speakers (including 2 keynote addresses), 48 (50%) were from other senior researchers, and 24 (25%) were from students. Of the 75 poster presentations, 46 (61%) were from students. The paper sessions were deliberately not organized by topic or animal taxon so as to provide better mixing of ideas, though sessions were arranged to include invited speaker(s), senior researchers, and junior researchers or students.. This proved to be beneficial for information exchange and kept movement in and out of sessions to a minimum.

The two keynote speakers were Dr. Peter Marler (University of California, Davis), who presented “Nature and Nurture: Vocal Communication in Birds and Monkeys”, and Dr. Peter Slater (University of St. Andrews, Scotland) who presented “A Tropical Perspective on Bird Song”. The remaining invited speakers presented papers which reflected the wide diversity of taxa and methodologies:

- Whitlow Au, University of Hawaii, “Detection and discrimination of fish prey by echolocating odontocetes: role of the swimbladder”.
- Eliot Brenowitz, University of Washington, “Plasticity of adult avian song behavior”.
- Robert Dooling, The University of Maryland, “The Effects of Highway Noise on Birds”.
- Günter Ehret, Institute of Neurobiology, University of Ulm, “Acoustic Communication in House Mice”.
- Richard Fay, Parmly Hearing Institute, “Sound Source Segregation in Noise by Goldfish”.
- Albert Feng, University of Illinois at Urbana-Champaign, “Frogs Communicate with Ultrasound in Noisy Environments”.
- Tecumseh Fitch, University of St. Andrews, “The Evolution of Mammalian Vocal Communication: Problem Spaces and Solutions”.
- Deborah Fripp, Dallas Zoo, “Low-Frequency Anthropogenic Sound Increases Stress Levels in Okapi”.
- Kurt Fristrup, National Park Service, “Estimating the Costs of Lost Auditory Awareness and Habituation to Noise.”
- Matina Kalcounis-Rüppell, Biology Department, University of North Carolina at Greensborough, “Individual Context of Ultrasonic Vocalizations Production by Wild Deer Mice (*Peromyscus*)”.
- Peter Narins, University of California, Los Angeles, “Environmental Influences on the Evolution of Communication Systems”.
- Caitlin O'Connell-Rodwell, Stanford University, “The relative role of vocal and seismic communication within a multi-modal communication network in the African elephant bull (*Loxodonta africana*)”.
- Kazu Okanoya, RIKEN Brain Science Institute, “Song Complexity in Bengalese Finches: From Ecology to Molecules”.
- Arthur Popper, University of Maryland, “Effects of Human-Generated Sounds on Fish”.
- Ronald Schusterman, University of California Santa Cruz, “Language Learning Studies in Pinnipeds: Sonic Production and Comprehension”.
- Andrea Simmons, Brown University, “Analysis of Chorus Structure in Natural Bullfrog Assemblages”.
- James Simmons, Brown University, “Matching of Echoes to Broadcast Templates in Bat Sonar”.

- Joseph Sisneros, University of Washington, “Adaptive Auditory Plasticity in the Vocal Plainfin Midshipman Fish: Getting in Tune for the Summer and its Implication for Acoustic Communication”.
- Annemarie Surlykke, University of Southern Denmark, “Intensity and Directionality of Bat Echolocation Calls Measured in the Field”.
- Terry Takahashi, Institute of Neuroscience, “Auditory Stream Segregation by the Barn Owl”.
- Sofie Van Parijs, Northeast Fisheries Science Center, “Using Passive Acoustic Tools to Understand Long Term Reproductive Ecology of the Ice Breeding Bearded Seal Faced with a Rapidly Changing Environment”.

The conference schedule allowed for the two 45-minute keynote addresses (on days 1 and 3), and an average of 24, 15- minute oral presentations per day (23 on day 1; 28 on day 2; 18 on day 3; and 26 on day 4). Evening programs included a special evening session on Noise Impacts, chaired by Kurt Fristrup and having 5 presentations, and a networking dinner (“Pizza and Taxa”) at which people with interests in similar taxa could share what they learned during conference sessions and discuss applications to specific taxa.

Result

The primary goal of this conference, to bring biologists, engineers, and other scientists from various fields together to discuss the field of acoustic communication by animals, was met with good success. The anticipated secondary goals were also achieved: discussions among experts in acoustic communication of different species, networking between attendees with background in the physical and biological aspects of acoustical communication, the introduction new techniques and equipment in this rapidly emerging field, networking amongst researchers and consultants about software products, equipment and other emergent tools, facilitating communications among scientists and engineers from various organizations and countries which work on various aspects of acoustic communication of animals and improving the understanding of basic acoustics, especially as it relates to animal communication.

Many people commented that they both enjoyed and were enriched by the conference, leading to the assessment that the conference was a success for attendees. (But there is clear sampling bias here! People who liked the conference were undoubtedly much more likely to tell us organizers their opinions than people who didn't like it.)

Budget

The total cost of the conference was \$101,197. Costs for the conference included facility rental, fees to OSU's Conference Services office (\$40/person), an opening reception, the Pizza and Taxa dinner and another sit-down dinner, facility labor (A/V), printing and mailing costs, food and beverages for breaks, travel and registration costs for students, travel and lodging for the keynote speakers (Drs. Marler and Slater), one month of salary for the lead organizer (Mellinger) and 2.5 months for a research assistant (Heimlich), and miscellaneous expenses. The actual time that Ms. Heimlich spent on the conference was roughly twice as much as this 2.5 months, divided into many short periods over a span of many months. The conference was more expensive than anticipated principally because more people attended (241) than expected (150-200), though of course more people meant more income as well.

Conference income totaled \$103,445, including registration fees of \$55,000 (exactly) and funding from supporting organizations totaling \$48,445. Support came from the National Park Service (\$17,625), Office of Naval Research (\$13,256.00), the Marine Mammal Commission (\$10,000.00), Acoustical

Society of America (\$5,000), International Commission on Acoustics (\$1,564.00), and OSU's Cooperative Institute for Marine Resources Studies (\$1,000).

The difference between expenses and income was \$2,248, an amount that is being used to recover a bit of salary time for the organizers.