

## **Songhai LI**

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Woods Hole Oceanographic Institution,  
Marine Research Facility 231, MS#50  
Woods Hole, Ma. 02543  
Office Phone: +1-508-289-2520  
Email: [sli@whoi.edu](mailto:sli@whoi.edu)  
<http://www.whoi.edu/profile.do?id=sli&external=this>

Institute of Hydrobiology,  
Chinese Academy of Sciences,  
Wuhan, Hubei, 430072, P.R. China  
Email: [lish@ihb.ac.cn](mailto:lish@ihb.ac.cn)  
Tel : +86-27-87801331  
Fax: +86-27-87491267

### **FIELDS OF RESEARCH AND INTERESTS**

I am performing researches on sound production, hearing, and passive acoustic survey of aquatic animals. The researches involve underwater acoustics measurements, electrophysiological measurements, and animal signals detection.

### **EDUCATION**

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| 2002–2007 | Ph.D in Hydrobiology, Institute of Hydrobiology, Chinese Academy of Sciences  |
| 08/2006   | Acoustic Communication Course<br>University of Southern Denmark, Denmark      |
| 1998–2002 | BSc in Biology Technology. College of Life Sciences, Wuhan University, China. |

### **WORK EXPERIENCE**

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| 04/2009-        | Guest Investigator, Woods Hole Oceanographic Institution, Woods Hole, MA, USA. Working on hearing research of Cetaceans and other aquatic animals by using electrophysiology technology (ABR). In collaboration with Drs. Darlene Ketten and Aran Mooney. |
| 02/2009-04/2009 | Visiting Scholar, Western Kentucky University, Bowling Green, KY, USA. Working on hearing research of fish by using electrophysiology technology (ABR). In collaboration with Dr. Michael Smith.  |

- 07/2007-present Assistant researcher, Institute of Hydrobiology, Chinese Academy of Sciences, Wuhan
- 09/2002-07/2007 Ph.D. student, Institute of Hydrobiology, Chinese Academy of Sciences, Wuhan

## **AWARDS**

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- 2009 Mary Sears Visitor Program award, Woods Hole Oceanographic Institution (WHOI)
- 2008 Special Funds for President Scholarships of Chinese Academy of Sciences (CAS)
- 2007 Excellent grad, Chinese Academy of Sciences (CAS)
- 2007 Dean Prize, Chinese Academy of Sciences (CAS)
- 2007 Graduate Prize Fellowship, Institute of Hydrobiology, CAS
- 2006 Di-ao Fellowship, Chinese Academy of Sciences, CAS
- 2006 Graduate Prize Fellowship, Institute of Hydrobiology, CAS
- 2005 Graduate Prize Fellowship, Institute of Hydrobiology, CAS
- 2004 Graduate Prize Fellowship, Institute of Hydrobiology, CAS
- 2003 Graduate Prize Fellowship, Institute of Hydrobiology, CAS
- 1999–2000 Ren-min Fellowship, Wuhan University
- 1998–1999 Hui-kai Fellowship, Wuhan University
- 1998–1999 Huang-wen-yuan Fellowship, Wuhan University

## **PUBLICATIONS**

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### **1. Journal Publications**

Tomonari Akamatsu, Ding Wang, Kexiong Wang, **Songhai Li**, and Shouyue Dong. Scanning sonar of rolling porpoises during prey capture trials. *The Journal of Experimental Biology* (Under review).

**Songhai Li**, Tomonari Akamatsu, Ding Wang, and Kexiong Wang. (2009) Localization and tracking of phonating finless porpoises using towed stereo acoustic data-loggers. *Journal of the Acoustical Society of America*. **126**, 468–475.

Satoko Kimura, Tomonari Akamatsu, Kexiong Wang, Ding Wang, **Songhai Li**, and Shouyue Dong. (2009) Comparison of stationary acoustic monitoring and visual observation of finless porpoises. *Journal of the Acoustical Society of America*. **125**, 547–553.

Satoko Kimura, Tomonari Akamatsu, Kexiong Wang, **Songhai Li**, Shouyue Dong, and Ding Wang. (2009) Small-scale towing survey combined acoustical and visual observation for finless porpoise in the Yangtze River. Proceedings of the 4th International Symposium on SEASTAR2000 and Asian Bio-logging Science, 63–65.

Tomonari Akamatsu, Ding Wang, Kexiong Wang, **Songhai Li**, Shouyue Dong, Xiujiang Zhao, J Barlow, Brent S. Stewart, and Michael Richlen. (2008) Estimation of the detection probability for Yangtze finless porpoises (*Neophocaena phocaenoides asiaeorientalis*) with a passive acoustic method. Journal of the Acoustical Society of America. **123**, 4403–4411.

**Songhai Li**, Kexiong Wang, Ding Wang, Shouyue Dong, and Tomonari Akamatsu. (2008b) Simultaneous production of low- and high-frequency sounds by neonatal finless porpoises. Journal of the Acoustical Society of America. **124**, 716–718.

**Songhai Li**, Tomonari Akamatsu, Ding Wang, Kexiong Wang, Shouyue Dong, Xiujiang Zhao, Zhuo Wei, Xianfeng Zhang, Barbara Taylor, Leigh A. Barrett, Samuel T. Turvey, Randall R. Reeves, Brent S. Stewart, Michael Richlen, and John R. Brandon. (2008a). INDIRECT EVIDENCE OF BOAT AVOIDANCE BEHAVIOR OF YANGTZE FINLESS PORPOISES. Bioacoustics-The International Journal of Animal Sound and its Recording. **17**, 174–176.

Satoko Kimura, Tomonari Akamatsu, Ding Wang, Kexiong Wang, and **Songhai Li**. (2007). Monitoring local migration of Yangtze finless porpoises by acoustic gate. Journal of Marine Acoustic Society of Japan, **34**, 40–45.

**Songhai Li**, Ding Wang, Kexiong Wang, Jianqiang Xiao, and Tomonari Akamatsu. (2007b) The ontogeny of echolocation in the Yangtze Finless porpoise (*Neophocaena phocaenoides asiaeorientalis*). Journal of the Acoustical Society of America. **122**, 715–718.

**Songhai Li**, Ding Wang, Kexiong Wang, Tomonari Akamatsu, Zhiqiang Ma, and Jiabo Han. (2007a) Echolocation click sounds from wild inshore finless porpoise (*Neophocaena phocaenoides sunameri*) with comparisons to the sonar of riverine *N.p. asiaeorientalis*. Journal of the Acoustical Society of America. **121**, 3938–3946.

**Songhai Li**, Ding Wang, Kexiong Wang, and Tomonari Akamatsu. (2006) Sonar gain control in echolocating finless porpoises (*Neophocaena phocaenoides*) in an open water. Journal of the Acoustical Society of America. **120**, 1803–1806.

**Songhai Li**, Kexiong Wang, Ding Wang, and Tomonari Akamatsu. (2005b)

Origin of the double- and multi-pulse structure of echolocation signals in Yangtze finless porpoise (*Neophocaena phocaenoides asiaorientalis*). Journal of the Acoustical Society of America. **118**, 3934–3940.

**Songhai Li**, Kexiong Wang, Ding Wang, and Tomonari Akamatsu. (2005a) Echolocation signals of the free-ranging Yangtze finless porpoise (*Neophocaena phocaenoides asiaorientalis*). Journal of the Acoustical Society of America. **117**, 3288–3296.

Kexiong Wang, Ding Wang, Tomonari Akamatsu, **Songhai Li**, and Jianqiang Xiao. (2005) A passive acoustic monitoring method applied to observation and group size estimation of finless porpoises. Journal of the Acoustical Society of America. **118**, 1180–1185.

Vladimir V. Popov, Alexander Ya. Supin, Ding Wang, Kexiong Wang, Jianqiang Xiao, and **Songhai Li**. (2005) Evoked-potential audiogram of the Yangtze finless porpoise *Neophocaena phocaenoides asiaorientalis*. Journal of the Acoustical Society of America. **117**, 2728–2731.

## 2. Book Chapters

**Songhai Li**, Ding Wang, Kexiong Wang, Tomonari Akamatsu, Alexander Ya. Supin, and Vladimir V. Popov. (2009) Biosonar and auditory system of the Yangtze finless porpoise. In: Endangered Species: New Research. Columbus A., and Kuznetsov L. (Eds). Nova Science Publishers, Inc.

**Songhai Li**, Shouyue Dong, Satoko Kimura, Tomonari Akamatsu, Kexiong Wang, and Ding Wang. (2009) Presence pattern of Yangtze finless porpoise in the Poyang Lake mouth area obtained by passive acoustic data-loggers. In: Biology, Evolution, and Conservation of River Dolphins within South America and Asia: Unknown Dolphins in Endangered. Ruiz-Garcia, M., and Shostell, J. M. (Eds). Nova Science Publishers (In Press).

## 3. Oral/Poster presentations

**Songhai Li**, 2009, bioacoustics research on Yangtze freshwater dolphin and porpoise, Biology Department Seminar, Western Kentucky University, USA. April 17, 2009. (Invited)

**Songhai Li**, 2009, Hearing of Aquatic Animals—from Fish to Odontocetes, Biology Department Seminar, Shanghai Ocean University, Shanghai, China. June 10, 2009. (Invited)

**Songhai Li**, 2009, Acoustic Behavior of Cetacean, Lecture in a Training Course on Conservation of Whales and Dolphin in China, Organized by Agriculture Department of Chinese Government, Hefei, China. June 12, 2009. (Invited)

**Songhai Li**, Ding Wang, Kexiong Wang, and Tomonari Akamatsu. 2008, The sound production, hearing, and ontogeny of acoustic behavior in finless porpoise, Symposium on Cetacean Research and Conservation across Taiwan Straits, Wuhan, China. October 28<sup>th</sup>–29<sup>th</sup>, 2008, @Oral.

**Songhai Li**, Ding Wang, Kexiong Wang, and Tomonari Akamatsu. 2007, Geographic differences of echolocation signals in the finless porpoise, Japan-China Biologging Science Symposium, Wuhan, China. November 5<sup>th</sup>–8<sup>th</sup>, 2007, @Oral.

**Songhai Li**, Tomonari Akamatsu, Ding Wang, Kexiong Wang, Shouyue Dong, Xiujiang Zhao, Zhuo Wei, Xianfeng Zhang, Barbara Taylor, Leigh A. Barrett, Samuel T. Turvey, Randall R. Reeves, Brent S. Stewart, Michael Richlen, and John R. Brandon. 2007, Indirect evidence of boat avoidance behavior of Yangtze finless porpoises, International Conference on the Effects of Noise on Aquatic Life, Denmark. August 13<sup>th</sup>–17<sup>th</sup>, 2007, @poster.

**Songhai Li**, Ding Wang, Kexiong Wang, and Tomonari Akamatsu. 2006, Echolocation signals of free-ranging finless porpoise, a course in Acoustic Communication, Denmark. August 19<sup>th</sup>–29<sup>th</sup>, 2006, @poster.

Tomonari Akamatsu, Ding Wang, Kexiong Wang, and **Songhai Li**, 2006, Acoustic monitoring of echolocating porpoises, Oceans '06, Singapore. May 16<sup>th</sup>–19<sup>th</sup>, 2006.

Kexiong Wang, Ding Wang, Tomonari Akamatsu, Jianqiang Xiao, **Songhai Li**, and Zhuo Wei. 2005, A passive acoustic monitoring method applied to determination of movement direction of the free-ranging finless porpoise, The 16th Biennial Conference on the Biology of Marine Mammals, 2005.12.12–16, San Diego, CA, U.S.A., Abstracts pp.296–297, @poster.

Kexiong Wang, Ding Wang, **Songhai Li**, and Tomonari Akamatsu. 2005, passive acoustical monitoring method applied to observation and abundance estimation of finless porpoises. 2nd International Bio-logging Science Symposium, St Andrews, Scotland, 13–16 June. page 49, @poster.

Kexiong Wang, Ding Wang, Tomonari Akamatsu, **Songhai Li**, and Jianqiang Xiao. 2004, An acoustical method applied to observation and abundance estimation of finless porpoises. The 12th International Symposium on River and Lake Environment (ISRLE), 1–12 Nov. 2004, Wuhan, China. Abstracts of International Symposium on SEASTAR2000 and Bio-logging Science, p.32, @Oral.

## **GRANTS, AND FELLOWSHIPS**

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- Year: 2008–2009  
Source: Special Funds for President Scholarships of the Chinese Academy of Sciences  
Research: Principal Investigator. Study on environmental adaptability of sonar characteristics in Yangtze finless porpoise
- Year: 2008–2010  
Source: Ocean Park Conservation Foundation, Hong Kong (OPCFHK)  
Research: Principal Investigator. Investigate the seasonal and annual changing pattern of distribution and population size of Yangtze finless porpoise in its main distribution range by passive acoustical survey

## **JOURNAL REVIEWER**

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Journal of the Acoustical Society of America

## **OTHER QUALIFICATIONS**

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### ■ **Skills**

Proficiency in recording ultrasonic biological sound, manipulating SIGNAL/RTS™ Digital Signal Processing software (American Engineering Design, USA), Igor software, Matlab software, Cool Edit software, Adobe Audition software, Microsoft Office software, Photoshop software, Statistica software, SPSS for Windows software.

Experience in bio-logging experiment with Dr. Tomonari Akamatsu, Dr. Kexiong Wang, etc.

Experience in measuring evoked-potential audiograms of finless porpoise with Professor Alexander Ya. Supin, Vladimir V. Popov, etc.

Attended a course in Acoustic Communication arranged by University of Southern Denmark from Aug 19<sup>th</sup>–29<sup>th</sup>, 2006. In the course, sound communication in air (including the sonic, infra-sonic and ultra-sonic ranges and air-currents), in water, and in solids was presented by lectures, practicals and excursions. Introductory lectures aimed at giving an overview of the area of acoustic communication, followed by lectures on the fundamentals of acoustics and signal analysis. Special emphasis was on equipment and methods, such as psychophysical methods, and underwater sound recording and localization.

Experience in the Baiji Survey of “Yangtze Freshwater Dolphin Expedition 2006”, which consisted of a big scientists group from 7 different countries with both visual and acoustic survey. In this survey I was a member of the acoustic survey group.

- **Languages**

Chinese (native), English