

Underwater Acoustics: 2021 DOSITS Webinar Series

Acoustic Tag Technologies and Applications (Marine Mammals and Fishes)

Friday, May 7, 2021, 12pm ET

Dr. Susan Parks, Associate Professor of Biology, Syracuse University

Dr. Jeff Kneebone, Anderson Cabot Center for Ocean Life at the New England Aquarium

Webinar Outline

Acoustic Tags > Marine Mammals (Dr. Susan Parks)

- What are acoustic tags?
 - Timeline of tag development
 - Tag data streams
 - Tag attachment methods
- What types of questions can acoustic tags be used to answer?
 - Calling behavior of individual animals
 - Call types and characteristics
 - Call rates
 - Behavioral context of sound production
 - Echolocation and foraging behavior
 - Sound exposure and behavioral response

Acoustic Telemetry for Fish Tracking (Dr. Jeff Kneebone)

- Introduction to fish acoustic telemetry (What is it? How does it help research? Why is it important?)
- How does acoustic telemetry work?
 - Transmitters and receivers and how they interact
 - Data collection
 - Data analyzation (retroactively examine where the fish were over time)
 - How has acoustic telemetry been used to answer research questions over short to long time periods and from small to big study areas
 - Made possible by:
 - Compatibility of transmitters and receivers
 - Extended battery lives of tags (up to 10 years)
 - Groups that promote data sharing among telemetry users
- Examples of acoustic telemetry applications [for fishes]
 - Juvenile sand tiger tracking
 - Duxbury or Boston Harbor receiver arrays; sharks in these bays
 - Monitoring shark migration/movements along the US east coast
 - Offshore wind telemetry monitoring
 - What is happening with offshore wind and why do we need to monitor potential impacts on animals?
 - How is acoustic telemetry used to monitor animal presence in southern New England?
 - Expanding the study in space and time

DOSITS Links:

- Science of Sound > How are sounds viewed and analyzed?
<https://dosits.org/science/measurement/how-are-sounds-viewed-and-analyzed/>

- Animals and Sound > Marine Mammal Communication
<https://dosits.org/animals/use-of-sound/marine-mammal-communication/>
- Animals and Sound > Marine Fish Communication
<https://dosits.org/animals/use-of-sound/marine-fish-communication/>
- Animals and Sound > Potential effects of sound on marine mammals
<https://dosits.org/animals/effects-of-sound/potential-effects-of-sound-on-marinemammals/>
- Animals and Sound > Potential effects of sound on marine fishes
<https://dosits.org/animals/effects-of-sound/potential-effects-of-sound-on-marine-fishes/>
- Animals and Sound > Anthropogenic Sound Sources <https://dosits.org/animals/effects-of-sound/anthropogenic-sources/>
- Animals and Sound > Potential Effects > How do you determine if a sound affects a marine animal?
<https://dosits.org/animals/effects-of-sound/determine-if-a-sound-affects-a-marine-animal/>
- Animals and Sound > How do you measure a marine mammal's reaction to sound?
<https://dosits.org/animals/effects-of-sound/measure-marine-mammals-reaction-to-sound/>
- People and Sound > How is sound used to research wind energy?
<https://dosits.org/people-and-sound/examine-the-earth/how-is-sound-used-to-research-wind-energy/>
- People and Sound > How is sound used to study marine mammal distribution?
<https://dosits.org/people-and-sound/investigate-marine-animals/how-is-sound-used-to-study-marine-mammal-distribution/>
- People and Sound > How is sound used to estimate marine mammal abundance?
<https://dosits.org/people-and-sound/investigate-marine-animals/how-is-sound-used-to-estimate-marine-mammal-abundance/>
- People and Sound > How is sound used to study the distribution of marine fishes?
<https://dosits.org/people-and-sound/investigate-marine-animals/how-is-sound-used-to-study-the-distribution-of-marine-fishes/>
- Technology Gallery > Passive Acoustic Recording Tags
<https://dosits.org/galleries/technology-gallery/observing-and-monitoring-marine-animals/passive-acoustic-recording-tags/>
- Technology Gallery > Acoustic Fish Tags
<https://dosits.org/galleries/technology-gallery/observing-and-monitoring-marineanimals/acoustic-fish-tags/>
- Technology Gallery > Archival Marine Acoustic Recording Units (ARUs)
<https://dosits.org/galleries/technology-gallery/observing-and-monitoring-marineanimals/archival-marine-acoustic-recording-units-arus/>
- Technology Gallery > Real Time Passive Acoustic Recorders <https://dosits.org/galleries/technology-gallery/observing-and-monitoring-marineanimals/real-time-passive-acoustic-sensors/>
- Technology Gallery > Passive Acoustic Recording Tags <https://dosits.org/galleries/technology-gallery/observing-and-monitoring-marineanimals/passive-acoustic-recording-tags/>
- Audio Gallery > Marine Mammals <https://dosits.org/galleries/audio-gallery/marine-mammals/>
- Audio Gallery > Fishes <https://dosits.org/galleries/audio-gallery/fishes/>
- DOSITS Hot Topic > Monitoring Wind Farm Construction
<https://dosits.org/hot-topic-monitoring-wind-farm-construction/>