DOSITS Underwater Sound Source Webinar, Thursday, October 10, 2019, 12pm EDT
Sonar Basics/Echosounders, Kelly Benoit-Bird
Military Sonar Sound Sources, Frans-Peter Lam

Sonar Basics, Echosounders (ocean sensing, explorations, etc.)
Kelly Benoit-Bird, Monterey Bay Research Institute (MBARI)

- How does sonar work?
- What do we use sonar for?
- How do signal characteristics change with purpose?
- How are sonars used for biological studies?

Additional Information on the DOSITS website:

- Science of Sound > Sonar
  https://dosits.org/science/sounds-in-the-sea/how-do-people-and-animals-use-sound-in-the-sea/sonar/

- Science, Advanced Content > Sound Pressure Levels and Sound Exposure Levels
  https://dosits.org/science/sounds-in-the-sea/how-do-people-and-animals-use-sound-in-the-sea/sonar/

- Technology Gallery > Echosounder
  https://dosits.org/galleries/technology-gallery/observing-the-sea-floor/echosounder/

- Technology Gallery > Multibeam Echosounder
  https://dosits.org/galleries/technology-gallery/observing-the-sea-floor/multibeam-echosounder/

- Technology Gallery, Sidescan Sonar
  https://dosits.org/galleries/technology-gallery/observing-the-sea-floor/side-scan-sonar/

- People > How is sound used to map the seafloor?
  https://dosits.org/people-and-sound/examine-the-earth/map-the-sea-floor/

- People > How is sound used to measure water depth?
  https://dosits.org/people-and-sound/navigation/how-is-sound-used-to-measure-water-depth/

- People > 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/

- People > How is active acoustics used in fisheries research and management?
  https://dosits.org/people-and-sound/investigate-marine-animals/active-acoustics-fisheries/

- Animals > Effects > Anthropogenic Sound Sources: Echosounders
  https://dosits.org/animals/effects-of-sound/anthropogenic-sources/echosounders/

Military Sonar Sound Sources
Frans-Peter Lam, TNO, Acoustics & Sonar research group, The Hague, NL

- Transducer design (hull-mounted sonar systems and towed sonar systems)
- Typical military sonar examples (including continuous active sonar (CAS))
- Military sonar signal characteristics (source level, frequency, bandwidth, duration, duty cycle, beam pattern, etc.)
- Mitigation measures (e.g., ramp-up)
- Research efforts

Additional Information on the DOSITS website:

- Technology Gallery > Sonar Technology
  https://dosits.org/galleries/technology-gallery/locating-objects-using-sonar/sonar/

- Audio Gallery > Sonar
  https://dosits.org/galleries/audio-gallery/anthropogenic-sounds/sonar/

- Technology Gallery > Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) sonar
  https://dosits.org/galleries/technology-gallery/locating-objects-using-sonar/surtass-lfa-sonar/

- Audio Gallery > SURTASS LFA Sonar
  https://dosits.org/galleries/audio-gallery/anthropogenic-sounds/surtass-lfa-sonar-sound/

- Science > How do people and animals use sound in the sea?
  https://dosits.org/science/sounds-in-the-sea/how-do-people-and-animals-use-sound-in-the-sea/

- People > National Defense > How is sound used to find submarines?
  https://dosits.org/people-and-sound/national-defense/how-is-sound-used-to-find-submarines/

- Science > Sound Movement > Why does sound get weaker as it travels?
  https://dosits.org/science/movement/why-does-sound-get-weaker-as-it-travels/

- Science > Sounds in the Sea > Why do sounds have certain properties?
  https://dosits.org/science/sounds-in-the-sea/why-do-sounds-have-certain-properties/

- Animals > Effects > Anthropogenic Sound Sources > Sonar
  https://dosits.org/animals/effects-of-sound/anthropogenic-sources/sonar/

- Science, Advanced Content > Sonar Equation
  https://dosits.org/science/advanced-topics/sonar-equation/

- Science of Sound, Advanced Content > Sonar Equation Example: Active Sonar
  https://dosits.org/science/advanced-topics/sonar-equation/sonar-equation-example-active-sonar/

- Science, Advanced Content > Detection Threshold for Sonar
  https://dosits.org/science/advanced-topics/detection-threshold-for-sonar/

- Science, Advanced Content > Sound Pressure Levels and Sound Exposure Levels https://dosits.org/science/sounds-in-the-sea/how-do-people-and-animals-use-sound-in-the-sea/sonar/