

Underwater Acoustics: Webinar Series for the International Regulatory Community

Webinar Outline: Potential Effects of Sound on Marine Fishes
Tuesday May 10, 2016 at 12:00pm (US East Coast Time)

Part 1: Sound and Fishes

Anthony D. Hawkins, Loughine LTD, Aberdeen, UK

Presentation Outline:

- Underwater sound and sound sources
- How well do fishes hear sounds?
- What kinds of sounds do fishes produce?
- How do fishes react to man-made sounds?
- Population impacts

Additional information on the DOSITS website:

Science of Sound > What sounds can animals hear?

<http://www.dosits.org/science/soundmeasurement/soundsanimalshear/>

Science of Sound > How is hearing measured?

(<http://www.dosits.org/science/soundmeasurement/hearingmeasured/>)

Science of Sound > What are common underwater sounds?

(<http://www.dosits.org/science/soundsinthesea/commonsounds/>)

Science of Sound > Why do sounds have different properties?

(<http://www.dosits.org/science/soundsinthesea/properties/>)

Science of Sound > How do people and animals use sound in the sea?

(<http://www.dosits.org/science/soundsinthesea/peopleanimalsuse/>)

Science of Sound > How does marine life affect ocean sound levels?

(<http://www.dosits.org/science/soundsinthesea/marinelifeaffectoceansound/>)

Science of Sound > Advanced Topics > What is intensity?

<http://www.dosits.org/science/advancedtopics/whatsintensity/>

Animals and sound > Why is sound important to marine animals?

(<http://www.dosits.org/animals/importanceofsound/whyissoundimportant/>)

Animals and Sound > How do marine animals use sound?

[\(http://www.dosits.org/animals/useofsound/animalsusesound/\)](http://www.dosits.org/animals/useofsound/animalsusesound/)

Animals and Sound > How do marine fish communicate using sound?

[\(http://www.dosits.org/animals/useofsound/fishcommunicate/\)](http://www.dosits.org/animals/useofsound/fishcommunicate/)

Animals and Sound > How do marine fish and invertebrates use or make sound when feeding?

[\(http://www.dosits.org/animals/useofsound/fishinvertfeeding/\)](http://www.dosits.org/animals/useofsound/fishinvertfeeding/)

Animals and Sound > How do marine fish produce sounds?

[\(http://www.dosits.org/animals/soundproduction/fishproduce/\)](http://www.dosits.org/animals/soundproduction/fishproduce/)

Animals and Sound > How do fish hear?

[\(http://www.dosits.org/animals/soundreception/fishhear/\)](http://www.dosits.org/animals/soundreception/fishhear/)

Animals and Sound > Advanced Topic > What components of sound are used for hearing?

[\(http://www.dosits.org/animals/advancedtopics/componentsofsound/\)](http://www.dosits.org/animals/advancedtopics/componentsofsound/)

Part 2: Sound Exposure Criteria and Their Development

Arthur N. Popper, University of Maryland & Environmental BioAcoustics LLC

Presentation Outline:

- Current “criteria”
- Experiments on the effects of sound on fishes
- Guidelines on effects of sound on fishes
- What are the gaps in what we know?
- Putting mitigation into context

Additional information on the DOSITS website:

Science of Sound > Advanced Topic > Sound Pressure Levels and Sound Exposure Levels

[\(http://www.dosits.org/science/advancedtopics/soundpresslevelsandsoundexplevels/\)](http://www.dosits.org/science/advancedtopics/soundpresslevelsandsoundexplevels/)

Animals and Sound > Potential Effects > How do you determine if a sound affects a marine animal?

[\(http://www.dosits.org/animals/effectsofsound/howdoyoudetermineifasoundaffectsamarineanimal/\)](http://www.dosits.org/animals/effectsofsound/howdoyoudetermineifasoundaffectsamarineanimal/)

Animals and Sound > Potential Effects, Marine Fishes
(<http://www.dosits.org/animals/effectsofsound/effectsofsoundonfish/>)

Animals and Sound > Potential Effects, Marine Fishes > Behavioral Changes
(<http://www.dosits.org/animals/effectsofsound/effectsofsoundonfish/behavioralchanges/>)

Animals and Sound > Potential Effects, Marine Fishes > Masking
(<http://www.dosits.org/animals/effectsofsound/effectsofsoundonfish/fishmasking/>)

Animals and Sound > Potential Effects, Marine Fishes > Hearing Loss
(<http://www.dosits.org/animals/effectsofsound/effectsofsoundonfish/hearingloss/>)

Animals and Sound > Potential Effects, Marine Fishes > Physiological Stress
(<http://www.dosits.org/animals/effectsofsound/effectsofsoundonfish/physiologicalstress/>)

Animals and Sound > Potential Effects > How can we moderate or eliminate the effects of human activities?
(<http://www.dosits.org/animals/effectsofsound/howcanwemoderateoreliminatetheeffectsofhumanactivities/>)