



Available Technologies

# Aquatic Acoustic Metrics Interface Utility Software (AAMI)

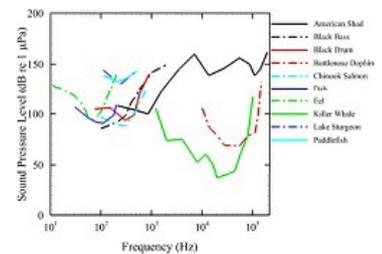
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## SUMMARY

Fishes and marine mammals suffer a range of effects from exposure to intense underwater sound generated by human activities such as pile driving, shipping, sonar use, and underwater blasting. Although not directly lethal, some effects may lower an animal's chance of survival by mechanisms such as increased susceptibility to predation or reduced foraging success. The physiological and behavioral effects of these sounds are investigated using underwater sound recording devices and software to process and analyze the resulting audio files. Previously developed programs did not integrate the calibration information for the sound acquisition system, computation of biologically important sound metrics, and aquatic animal audiograms (showing hearing sensitivity) into a single analytical frame.



To provide such integration and improve upon previously developed audio-editing software, researchers at DOE's Pacific Northwest National Laboratory developed the Aquatic Acoustic Metrics Interface (AAMI) software package. Analysis of underwater sound recordings using AAMI provides data in metrics that facilitate evaluation of the potential impacts of the sound on aquatic animals. The software program makes it easy to directly compare the characteristics of observed sound with the hearing sensitivity of animals of interest by plotting the spectra of the sound sample and the species' hearing sensitivity over a frequency range together in a single figure. AAMI, coupled with PNNL's underwater sound recording device, creates an easy to set up and deploy tool set that enables data collection and analysis without programming skills or the need for other programs.

## ADVANTAGES

- Integrates calibration information, computation, and audiograms into a single analytical frame
- Provides data in metrics that facilitate evaluation
- Allows for direct comparison of observed sound with species hearing sensitivity in a single figure

## PORTENTIAL INDUSTRY APPLICATION(S)

- Energy & Utilities
- Public Administration & Government

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