

Tutorial: Hydroacoustic Methods for Aquatic Habitat Assessment and Mapping

(Approved for 0.4 Continuing Education Units and 4 Professional Development Hours)

Instructor: Eric Munday

Overview

This tutorial will cover instructions to create transect maps showing bathymetry, substrate classification, and aquatic vegetation. Subject matter will include mobile survey techniques, echosounder configuration and operation, data collection and data processing instructions.

Demand for fine-scale mapping tools to accurately assess the ocean floor has grown steadily as critical aquatic habitat areas and other natural resources have become increasingly scarce. Hydroacoustic techniques are widely used and well proven in this capacity. Seagrasses and other macrophytes provide vital habitat areas and serve as a food supply for a range of aquatic organisms. Valuable seafloor mineral deposits can be located based on identification of specific substrate features and sonar-based substrate classification has thus become an area of intense focus by the burgeoning seafloor mining industry. The composition of seafloor substrate is also directly related to the viability and quantity of aquatic habitat. Effective protection and management efforts require a baseline understanding of the existing quantity and location of these areas.

Target Audience

Anyone interested in seafloor characterization or habitat assessment and mapping. Expected participants will be from the following industries and interest groups:

- Subsea mining
- Environmental consultants
- Academics

No prior knowledge is required, basic understanding of survey concepts and an interest in seafloor characterization.

What will the participants learn?

How to plan a hydroacoustic survey, operate a single beam echosounder, hydroacoustic data collection and processing, data export options, sample data formats including CSV and KML in Google Earth.

Content Details:

1. Echosounder configuration for site and mission specific criteria (30 min)
2. Survey planning and study design (30 min)

3. Sample end products (10 min)
4. Echosounder operation, data logging (30 min)
5. Break (20 min)
6. Data processing
 - 6.1.1. Bathymetry (20 min)
 - 6.1.2. Submerged vegetation (30 min)
 - 6.1.3. Substrate Classification (30 min)
 - 6.1.4. Data Exporting (10 min)
 - 6.1.4.1. CSV
 - 6.1.4.2. KML

Format

Powerpoint & Software demonstrations

Visual Acquisition software for echosounder config, operation and data collection

Visual Habitat software for data processing

Standard projector/screen

Instructor Bio

Eric Munday

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Five years experience in hydroacoustics and providing training in mobile hydroacoustics survey methods, echosounder operation and data processing. Seasoned public speaker, extensive experience composing and conducting live and interactive web-based seminars.

Sample of recorded Webinar: <http://www.youtube.com/watch?v=nw8oGv89IJo>

Content Details (Sample slides attached)

TOTAL Duration 3 hrs 30 minutes

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