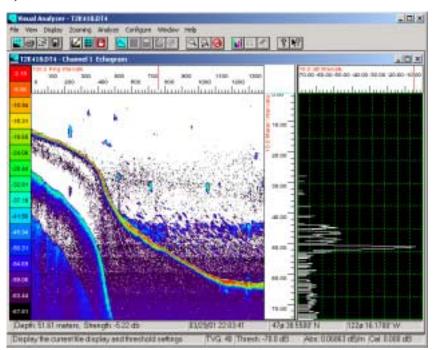
# **BioSonics Hydroacoustic Analysis Software**



# Visual Analyzer<sup>™</sup> for Fish Distribution, Abundance, and Behavior

BioSonics **Visual Analyzer**<sup>™</sup> software enables detection of fish, plankton and other organisms in both freshwater and marine environments. Analysis provides information about individual fish, numbers of fish, or biomass estimates of measured fish. Split beam data can also provide corrected measurement of target strength (acoustic "size") and target behavior.

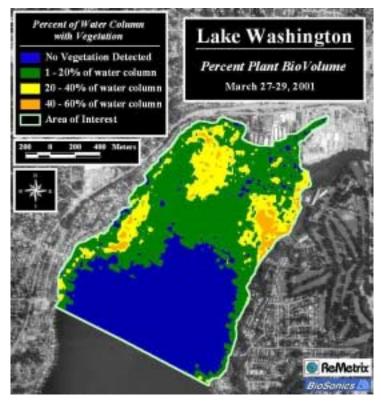
Visual Analyzer<sup>™</sup> report data can be read directly into your GIS application for further analysis or mapping. Visual Analyzer<sup>™</sup> is currently in use over a wide range of environmental conditions, in both freshwater and marine environments.



# **ECOSAV**<sup>™</sup> for Submersed Aquatic Vegetation

BioSonics  $ECOSAV^{TM}$  software provides for detection and measurement of SAV density, canopy height, and geographic distribution. The  $ECOSAV^{TM}$  report data can be read into your GIS or other application for further analysis or mapping (as shown here).

This system is successfully used in both freshwater and marine environments on a number of physiologically diverse submersed aquatic plant types. The system operates in littoral areas from wherever you can get your boat (or 0.3 m depth below the transducer), through the entire extent of the photic zone.



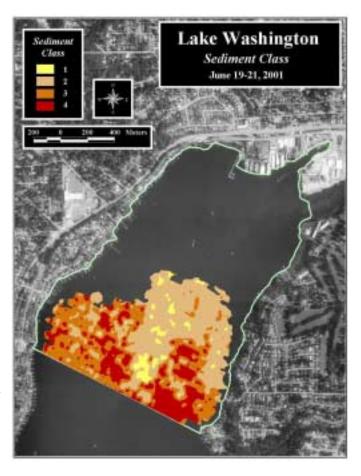


#### **VBT**<sup>™</sup> for Bottom Classification

BioSonics **VBT**<sup>™</sup> software provides essential tools for bottom sediment classification. The analysis can be performed using your choice of several methods: first echo normalization, first and second echo ratio, first echo division, and fractal dimension. The **VBT**<sup>™</sup> report data can be read directly into your GIS or other application for further analysis or mapping (as shown here). This system has been successfully used in both freshwater and marine environments over a wide range of bottom types. The standard system operates anywhere from the nearshore areas to depths exceeding 300 m.

#### **Training**

BioSonics offers workshops in both basic and advanced application of hydroacoustics at our Seattle offices or at your location. Topics include basic and advanced hydroacoustic theory, fisheries, aquatic plants, bottom classification, riverine, lake, and marine applications and advanced hydroacoustic digital signal processing. In addition, discussion of both mobile and fixed applications and field demonstrations are included. All workshop materials are provided and BioSonics scientists will modify the agenda to emphasize the needs of the participants. Custom workshops can be arranged.



# **Digital Data Collection and Analysis**

Digital acoustic data, as produced by the BioSonics Digital Scientific Echosounders, ensures accurate data storage and provides the user with the ability to consistently analyze data using different parameters.

BioSonics analysis reports are complete and stand on their own. However, if the user desires to perform additional analysis, to integrate the information with other non-acoustic data, or to present the output in graphical formats, BioSonics data exchange capabilities allow export to numerous other data manipulation, navigation, or acoustic data analysis applications.

### **Customer Support and Project Planning**

BioSonics scientists and engineers will work with you to ensure that your Digital Scientific Echosounder System is tailored to meet your needs and that you receive training and support to ensure successful application of hydroacoustics to your projects.