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**Automated real-time detection of cetaceans at the Station**  
**ALOHA Cabled Observatory**

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Hawaiian waters support a wide variety of cetacean species, however, little is known about their occurrence in offshore waters. A cabled ocean bottom observatory located at Station ALOHA (Station ALOHA Cabled Observatory - ACO) provides a unique opportunity to study the occurrence of cetaceans in real-time and over long time scales at a deep ocean research site located 100 km north of Oahu. A retired electro-optical telecommunications cable provides power and broadband Ethernet communications capability to the ACO, allowing real-time continuous acoustic monitoring. The ACO has been operational since February 2007 and includes a hydrophone with a bandwidth of 0.01Hz to 40kHz. Automated methods for detection and identification of cetacean calls have been developed and data are processed in nearly real-time. Several cetacean species have been detected, including: dolphins and humpback, minke, fin, and sperm whales. The relationship between the occurrence of different species and changes in the environment has been explored using near-monthly shipboard oceanographic observations collected at Station ALOHA. In addition, seasonal trends in the occurrence of minke whales, a species that has been especially difficult to study using visual methods due to their cryptic behavior, have been examined.