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**A Passive Acoustic Automated Detector
for
Sei and Fin Whale Calls**

Fin and sei whales are known by means of visual and acoustic surveys to be present in the Hawaiian Islands during winter and spring months, but migration patterns and stock sizes in Hawaii are poorly understood. In this work, an automated passive acoustic detector for fin and sei whale calls is quantified by comparison to manual detections from 3 days of data from the Station Aloha Cabled Observatory proof module. The targeted calls types include 20 Hz fin pulses which have a bandwidth of 18-23 Hz over 1 second and 20-35 Hz variable calls (attributed to both fin and sei whales) which occur over 1 second. The passive acoustic detector is applied to the full ALOHA proof module dataset, covering the period from 15 February 2007 to 22 October 2008. Analysis of the detector results show fin and sei call detections occurring both exclusively and simultaneously in the data, an increase in detections of both call types between the months of November and March and also between the hours of sunset and sunrise, inter-pulse-intervals (IPIs) for fin calls between 16 and 31s, and IPIs for variable calls between 11-24s.