INTRODUCTION

• Anthropogenic noise in the ocean is increasingly a conservation concern.
• Marine mammals are a focus because they rely on sound to communicate and find food.
• Humpback whales in Hawai’i are an important part of the economy and their acoustic habitat should be understood and protected.

METHODS

• Tags record pitch, roll, heading, and depth of the tagged animal, as well as temperature and continuous acoustics.
• During the focal follow (up to 24 hrs), record surface behavior, GPS, and photograph IDs.
• Upon tag release, recover tag using VHF radio signal.
• Tow a hydrophone array to record sounds from the boat and measure sound amplitudes.
• Non-invasive tags (DTAGs and Bprobes) attach via suction cups using a handheld pole.

SAMPLE RESULTS

Example non-song sounds (Hawaiian breeding grounds)
• “Non-song” sounds, or anything except song, were our focus. These are commonly produced in competitive groups of whales. We found a large variety of sound types.

Example body orientation data (Northwest Atlantic feeding grounds)
• “Megapclicks” are an unusual sounds we recorded from humpback whales during presumed feeding activity. We used the body orientation data from the tags to investigate their possible function in more detail. We believe they are used for feeding, possibly even for echo-ranging.
• Acoustically, the structure of megapclicks resembles odontocete echolocation, but frequency is lower and duration longer (see the spectrogram in the “sample results” subheading).

SUMMARY

• Megapclicks were only recorded at night from both whales, and frequently near the bottom of their dives.

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