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Marine Mammal Acoustic Survey Findings from Pagan Island, Commonwealth of the Northern Mariana Islands (CNMI)

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Passive acoustic monitoring was conducted during a survey of marine mammals in nearshore (< 5.6 km) waters surrounding Pagan Island, a remote volcanic island in the western tropical Pacific, part of the Commonwealth of the Northern Marianas Islands. The objective was to collect baseline information for Department of Defense's CNMI Joint Military Training Environmental Impact Statement. The primary effort was conducted over 11 days in August 2013. Visual/acoustic line-transect surveys were conducted using a towed hydrophone array system during daytime, and moored sonobuoys were deployed at night. Fourteen acoustic encounters occurred during line-transect surveys consisting of the following (subtotal in parentheses): bottlenose dolphin (1), spinner dolphin (1), beaked whales (4), and unidentified dolphins (8). Of this total, eleven were acoustic only encounters and three were concurrently sighted by observers. The four beaked whale acoustic encounters could not be classified in the field so data were post-processed resulting in the following classifications: Blainville's beaked whales (3) and Cuvier's beaked whale (1). Localization ranges (perpendicular to trackline) were between 0.3 and 2 km and varied by species/species groups. Sonobuoys were moored in depths of 30-50m at two sites located off sand beach areas on the west side of the island. Approximately 67 hours of recordings were made for an average recording duration of 7.4 hours per night. The majority of detection events (55) were of dolphins (undetermined species). Sperm whales were detected once by each sonobuoy. In summary, passive acoustic methods were able to detect delphinids, as well as deep diving species during both line-transect surveys and shallow water sonobuoy monitoring sites. Although brief in duration, this effort provided important information about the occurrence of several species of marine mammals documented for the first time at this remote island.