**Title:** Stock Structure, Residency, and Inter-Island Movements of Common Bottlenose Dolphins between O‘ahu and Maui Nui

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**Theme:** Ecology

Accurate descriptions of population structure are critical to inform effective management of protected species. Here we present the results of a reassessment of the structure and residency of two common bottlenose dolphin (*Tursiops truncatus*) stocks from the main Hawaiian Islands.Previous photo-identification and genetic studies have shown that bottlenose dolphins in the main Hawaiian Islands live in four small (~100 individuals), demographically independent and genetically differentiated island-associated populations around Kaua‘i/Ni‘ihau, O‘ahu, Maui Nui (Maui, Lāna‘i, Kaho‘olawe, and Moloka‘i), and Hawai‘i. A recent abundance estimate demonstrated that three of these four populations, designated as stocks, show evidence of decline, particularly the Maui Nui stock. However, photo-identification and satellite-tagging data has shown that some individuals do occasionally move between island areas, especially between O‘ahu and Maui Nui. These movements may have important consequences, as even a few dispersing individuals can impact genetic diversity and allow for the transmission of culturally-mediated behaviors.

We reassessed the population structures of the O‘ahu and Maui Nui stocks by analyzing over two decades’ worth of photo-identification data representing 472 individuals, and satellite-tag data from five individuals. While we found that social connections between the two populations were minimal, there was geographic overlap in spatial use that crossed stock boundaries. This was caused by a small subset of individuals (n=14) from the O‘ahu population that occasionally travel between island areas, using SW O‘ahu, SW Moloka‘i, and SW Lāna‘i. Satellite-tag data from two suspected inter-island travelers reveals that these animals made extensive use of Penguin Bank, indicating that this area may be of importance to inter-island travelers. Inter-island travelers were sighted in both island areas at all times of the year, though they were consistently sighted more frequently off O‘ahu than off Maui Nui. Further research will be needed to identify the possible drivers of this behavior.