

(to be dated when signed)

MEMORADUM FOR: Malia Chow, HIHWNMS Sanctuary Superintendent

FROM: Erin O'Reilly, HIHWNMS Resource Protection Specialist

SUBJECT: Drone Use in the Hawaiian Islands Humpback Whale National Marine Sanctuary

1. ACTION

Currently, drones are prohibited to fly in national marine sanctuaries below an altitude of 1,000 feet. However, drones are a cost-effective and low impact way to assess and document humpback whale populations and their surrounding habitat. Therefore, the Sanctuary needs to develop guidelines for drone use best practices, as well as provide permits for drone activity within the Sanctuary to ensure continued resource protection.

2. ANALYSIS

Humpback whales were listed as endangered under the Endangered Species Act in 1970 due to their declining populations. In 1992, Congress created the Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS) to protect humpback whales and their habitat in Hawai'i. While humpback whale populations are increasing, there are still many unanswered questions concerning their habitat requirements, population size, distribution and dynamics, and threats. Based on these unanswered questions, the HIHWNMS has identified three major scientific needs: determine humpback whale population abundance, habitat usage and overall health of individuals and populations; perform a threat analysis of entanglement; and determine robust estimates of humpback whale density and distribution.

On the technology side, there has been an increase in the availability of unmanned aerial systems, such as drones, which serve as a low cost alternative to other aerial survey methods such as airplanes and helicopters. Drones would be able to perform aerial surveys to assess population size, track population distributions, discover entangled whales, and even collect breath samples, while also decreasing risk to personnel. The last best estimate of the Hawaiian humpback whale population size is nearly a decade old, and drones would be able to provide surveillance over a large coverage area to provide updated population estimates.

The use of drones is a major step towards using the best available technology for monitoring and managing natural resources. Since they can fly low and slow, are relatively affordable, and have a low noise profile, scientists can receive fine scale ecological data with increased efficiency and decreased wildlife disturbance. While currently prohibited to fly under 1,000 feet in the Sanctuary, permitting drone activity for scientific purposes would enable the Sanctuary to better monitor whale populations and will adopt the best available scientific technology in the process.

3. RECOMMENDATIONS

With the emergence of new unmanned aerial systems technology, the Sanctuary needs to remain proactive and develop guidelines for best practices of drone use within the Sanctuary to balance research and resource protection. Additionally, the Sanctuary needs to permit all drone activity to ensure that drone use is furthering scientific research that will aid in better management of Sanctuary resources.

Approved _____ Disapproved _____ Let's Discuss _____

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