

TITLE: Addendum to an assessment of the impact of the Hawaii deep-set longline fishery to marine turtle populations in the North Pacific Ocean¹

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SUMMARY

In 2013, the Protected Resources Division of the Pacific Islands Regional Office (PIRO) of the National Marine Fisheries Service (NMFS) requested a modeling exercise (1) from the Pacific Islands Fisheries Science Center (PIFSC) to assess the population impacts to sea turtle populations from a proposed regulatory “action” in the Hawaii deep-set longline fishery, i.e., the continued operation of the fishery. The current document is a requested addendum to that exercise for the sole purpose of modelling the impact of 24 leatherback (*Dermochelys coriacea*) and 3 loggerhead sea turtle (*Caretta caretta*) interactions.

I retain all methods from my previous analysis, with the lone exception that I revise leatherback mortality from 42.1% to 36.1% and loggerhead mortality from 62.7% to 72.0% as directed by the PIRO. The goal of my analysis is to determine the number of adult nester equivalents (ANE), or the anticipated mortality of nesting female leatherbacks.

Given the above numbers, the calculated ANE values are 0.20 leatherbacks and 0.18 loggerheads. These numbers are analogous to the fishery incurring a single adult female mortality every 4.9 years for leatherbacks and every 5.4 years for loggerheads. As a reference point, these ANE estimates represent 0.010% of breeding females in the Western Pacific leatherback population (less than 1 in 9,540), and under 0.003% of breeding females in the North Pacific loggerhead population (less than 1 in 36,100). In terms of population-level significance, my assessment is that these calculated ANE mortalities by the fishery have a negligible population influence.

REFERENCES

1. K. S. Van Houtan, *Assessing the impact of the Hawaii deep-set longline fishery to marine turtle populations in the North Pacific Ocean*. 2013. NOAA Fisheries, Pacific Islands Science Center, PIFSC Internal Report IR-13-019, pp. 5.

¹ PIFSC Internal Report IR-14-021
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