Terms of Reference for the Peer Review of the Endangered Species Act 5-Year Review of the Loggerhead Sea Turtle North Pacific Ocean DPS

Evaluate the adequacy, appropriateness, and application of data used in the Endangered Species Act 5-Year Review of the Loggerhead Sea Turtle North Pacific Ocean DPS (i.e., the 5-Year Review).

1. In general, does the 5-Year Review include and cite the best scientific and commercial information available on the species, its biology, stock structure, habitats, threats, and risks of extinction?

   Yes, the 5-year review does a remarkably good job of including the best available scientific information, including important conference proceedings and, where no published data are available, personal communications from relevant experts.

2. Are the scientific conclusions factually supported, sound, and logical?

   Yes.

3. Where available, are opposing scientific studies or theories acknowledged and discussed?

   Yes.

4. Are the results and conclusions supported by the information presented?

   Yes, the authors have done a very good job supporting their conclusions.

5. Are uncertainties assessed and clearly stated?

   Yes. I think one threat that potentially deserves a bit more attention would be entrainment in intake canals in Japanese power plants. If there are power plants near major nesting beaches in Japan, such as the St. Lucie Power Plant in Florida, they could represent a serious threat to demographically valuable adult loggerheads, especially if there are

inadequate regulations to remove entrained turtles (or, if there are grates placed on the intake pipes, in which case mortality might never be known).

All information associated with the 5-Year Review is to remain strictly confidential until the 5-Year Review is posted to the NOAA/NMFS/OPR website.

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   I am confident that the information presented in this 5-year review represented the best data available across all the domains reviewed. The authors succinctly and clearly discuss the older data (that was used for previous reviews and the Status Review in 2009) and carefully considered whether the new data supported or refuted previous determinations. Their review of data was thorough and comprehensive and included all best available information on abundance and trends, genetics, spatial distribution, and habitat conditions.

2. Are the scientific conclusions factually supported, sound, and logical?

I concur with the conclusions in this review that the genetic, tagging, and tracking data continue to support the DPS determination. Similarly, findings from the most recent nesting beach population abundance analyses support the endangered population status determination. The most compelling evidence in support of this information was the finding that given the existing data, it is unlikely that loggerheads from other DPSs would repopulate nesting beaches and foraging areas in the North Pacific Ocean, if the North Pacific Ocean DPS was extirpated, and that even within the North Pacific DPS there is enough population structuring/isolation among some of the nesting beaches such that extirpation of a beach within the management unit would potentially not lead to repopulation from females from another nesting beach.

3. Where available, are opposing scientific studies or theories acknowledged and discussed?

The review presents older and more current scientific studies that presented data that, at some level, contradicted some of the assumptions or findings in the review. The most obvious example is the Casale and Matsuzawa (2015) conclusion that the population is experiencing an increase in nesting over the past three generations. It's important to note, however, that the majority of the other findings from Casale and Matsuzawa (2015), e.g. population estimates and abundance, were aligned with the conclusions in the review.

4. Are the results and conclusions supported by the information presented?

I found the results and conclusions to be very clear, concise, well-written and well-supported by the information presented. I was impressed with how thorough the authors were in reviewing all available published and grey literature for every section of the review

5. Are uncertainties assessed and clearly stated?

The authors presented uncertainty clearly and consistently throughout the review. Where no or limited data were available

In summary, I found this review to be an accurate and comprehensive evaluation of all existing information on NPacific loggerheads. The authors left no stone unturned and were systematic and careful in their review of all information. Their conclusions were well-founded and a direct and accurate reflection of current science.

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