COMMENTS ON THE DRAFT "STATUS REVIEW OF HAWAIIAN INSULAR FALSE KILLER WHALES (*Pseudorca crassidens*) UNDER THE ENDANGERED SPECIES ACT"—20 June 2010

Answers to questions posed in the Terms of Reference

Evaluate the adequacy, appropriateness and application of data used in the Status Review document.

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

Response: False killer whales (FKW) in general have not be the subject of specific, well-funded studies of their biology and ecology. In Hawaii in particular, data on FKW have been gathered adventitiously as part of broader cetacean studies and by a few small efforts specifically directed at FKW. Nonetheless, the excellent work of certain investigators has produced valuable information relevant to insular FKW biology and ecology, and those data are appropriately used in this status review document. Where data are seriously inadequate is in the documentation of interactions between FKW and fisheries, particularly nearshore, state-managed, commercial fisheries. Because of this inadequacy it is essentially impossible to evaluate the importance of what is very likely the most significant human impact on this DPS.

2. Are methods used valid and appropriate?

Response: The methods used for ranking and summarizing risk factors appear valid and appropriate. A detailed description of the population viability analysis (PVA) was not available for review, but from the short description in the draft status review the methods appear appropriate.

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

Response: The major scientific conclusions in the status review are the following:

- Hawaiian insular false killer whales are a DPS of the global false killer whale taxon;
- threats related to small population size, and hooking, entanglement, or intentional harm by fishers are the highest threats to Hawaiian insular false killer whales; and
- Hawaii insular false killer whales are at high risk of extinction.

These conclusions are well supported by the facts and analyses presented in the review, and I consider them to be sound and logical.

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

Response: In this situation there are not really any "opposing" scientific studies or theories. In places where alternative interpretations are possible (e.g., with DPS designation and evaluation of risk factors) those alternatives are acknowledged and discussed as much as is possible given data limitations.

5. Are uncertainties assessed and clearly stated?

Response: The status review does a very good job of assessing and discussing uncertainties.

Evaluate the findings made in the Status Review.

1. Concerning Distinct Population Segments, is the species delineation supported by the information presented?

Response: The designation of insular FKW as a DPS as defined in the Endangered Species Act (ESA) is well supported by information and analyses presented in the status review. The existence of a very limited number of apparently unique mitochondrial DNA haplotypes in this

group, differences in nuclear DNA between insular FKW and FKW in other regions, and the results of the minimum spanning tree analysis are conclusive in this regard.

2. Are the results of the Extinction Risk Analysis supported by the information presented? *Response*: The conclusion that the insular FKW DPS is at high risk of extinction is well supported by the information presented. This is well shown by the PVA analyses indicating a very high probability of extinction (i.e., reduction to fewer than 20 animals) within 2-3 FKW generations. However, even without the PVA, a common-sense evaluation would conclude that an isolated population containing perhaps only 50 mature individuals that has declined markedly in recent years would qualify for listing as endangered under the ESA (see Marine Mammal Commission. 2007. Report of the workshop on assessing the population viability of endangered marine mammals in U.S. waters. Savannah GA., 13-15 September 2005. Marine Mammal Commission, Bethesda, MD.).

Major comments on the draft status review

There are a number of important corrections and revisions that need to be made to this report, and many of them are shown in track changes on the draft of the status review that is being returned as part of this review. As an example, the review refers in several places to live capture fisheries for FKW, but those activities are not described anywhere in the report. Some other major points are discussed below.

In many places in the report, Hawaiian insular FKW are referred to as a "coastal species" that occupies the "nearshore environment." While this group of FWK may occur relatively near the coast compared to other FKW, in fact they are not what most people would consider a coastal or nearshore species. Data shown in Baird et al. (2010) show that FKW sightings are much more common in waters 3,500-4,500m deep compared to 1-1,000m depths. This should be made clear early in the report, perhaps by showing the figure from Baird et al.

Section 2.2 (Physical and oceanographic environment of the tropical and warm temperate Pacific and insular waters of the Hawaiian archipelago) looks as if it has been copied from an Environmental Impact Statement (EIS). However, unlike an EIS which requires a full description of the affected environment, a status review is focused on the biology of the species being evaluated and potential risks to the survival and recovery of the species. Some of this background may be useful for understanding risks, but what would be best would be to delete this section and move what background is essential into the appropriate places where potential risk factors are evaluated. If that is not done this section needs to be seriously edited to make sure that only information essential to the status review is included.

Section 4.0 (Assessment of extinction risk) would benefit from some broader consideration of other work that has been done in regard to listing species at risk of extinction. In particular reference should be made to the Congressionally-mandated project conducted by the Marine Mammal Commission (MMC) to evaluate the biological viability of the most endangered marine mammals and the cost-effectiveness of protection programs for them (MMC. 2008. The biological viability of the most endangered marine mammals and the cost-effectiveness of protection programs. Marine Mammal Commission, Bethesda, MD.). That project and the reports it produced provide useful background and justification for what is in this status review and what will go on as decisions are made about listing the FKW DPS. For example, MMC (2007; full citation given above) provides a description of previously conducted marine mammal PVAs, recommendations for improving the listing process, and suggestions for how to deal with listing decisions in situations when data are too sparse to construct a valid PVA. Lowry et al. (2006. Endangered, threatened, and depleted marine mammals in U.S. waters: a review of

species classification systems and listed species. Marine Mammal Commission, Bethesda, MD.) provides a history of listing decisions for other ESA-listed species, and Table 4 of that report could be used to show how the situation with insular FKW compares with that of other taxa officially considered to be endangered.

In section 4.6.1 the status review refers to elephants, primates, and certain social cetaceans to provide support for the argument that the insular FKW DPS is at high risk of extinction. An appropriate example to use in this regard would be the AT1 stock of Alaska transient killer whales. The AT1 group numbered 22 individuals in 1984 but only 7 remained alive in 2008 (Allen and Angliss. 2010. Alaska marine mammal stock assessments, 2009. U.S. Dep. Commer., NOAA Tech. Memo. NMFSAFSC-206) and this group will almost certainly go extinct as the remaining individuals die off. The last calf was born in 1984 when the population included 22 animals, which provides support for the quasi-extinction threshold being proposed in the insular FKW status review.

Minor comments on the draft status review

A number of minor comments and suggestions are shown in track changes on the draft of the status review that is being returned as part of this review.

In addition to the comments shown on the draft the following are places that should be checked for consistency throughout the review document:

- Use of “U.S.” or “US”
- Commas in numbers 1,000 or greater used or not
- Acronyms identified the first time then used every time afterwards
- Measurement units—metric or English (both feet and fathoms are used for depths)
- Single digit numbers should be written out (e.g., one)
- Latin names of fishes given in tables in section 2.2.5 are sometimes later repeated in text and sometimes not
- “Team” is sometimes capitalized and sometimes not.