

Attachment 1

Detailed comments on TOR 1 – 4 of Review of Draft Economic Analysis of Proposed Critical Habitat Designation for Green Sea Turtle

TOR 1 The accuracy, quality, and completeness of the information considered, particularly if any additional information exists that was not considered.

The information provided on the scope of activities that may be affected, the extent of activities within the critical habitat areas, and the characterization of the regulatory baseline is comprehensive, and with the exceptions noted below are accurate and complete.

Lack of Citations

There are a number of instances where key concepts are relied upon as analytical support where citations would be appropriate but are not provided. These are:

1. P14 The statement that “In some instances, compliance costs may provide a reasonable approximation for the efficiency effects associated with a regulatory action.” Is foundational to the economic analysis and a citation is needed.
2. P 19 The statement that “The published economics literature has also documented that social welfare benefits can result from the conservation and recovery of endangered and threatened species.” Has no citations to this literature.
3. P 19 The 2nd paragraph makes several assertions that are plausible yet no literature is cited supporting the material in this paragraph.
4. P 136 The statement that “While a number of published studies estimate the value the public places on protecting various species of sea turtles,...” has no citations to this literature.
5. The material presented in Section 3.2.1 has a voluminous literature that would support what is presented yet none of it is cited. The theoretical basis for the categories noted on p 137 is not well articulated.
6. P 138 The statement that “A substantial body of literature has developed that describes the application of this technique to the valuation of natural resource assets.” Has no citations to this literature.

Regional Economic Impact

Regional economic models are described as providing information on distributional consequences and provides a brief description of these models on P14 & 15. However, the description of input/output models and their use is not entirely correct. A properly constructed input/output model is based on a region of influence, which takes into account the transactions of goods and services and commuting patterns. This means that I/O models aren't well suited to analyze localized impacts. I/O models are based on a social accounting matrix describing the required purchases of inputs among sectors in order to produce final demand for that sector. Multipliers are derived from the SAM so it would be correct to say that economic impacts of a regulatory change can be measured using multipliers from an I/O model of the regional economy. It is not correct to say that I/O models rely on multipliers. Note that I/O models are based on requirements in dollars to produce final demand so the question is whether or not the anticipated incremental effects will have a measureable impact on regional final demand. I concur that the estimated compliance costs are low and geographically spread out among many regional

economies that there would be no measureable change in final demand. For this reason, regional economic impacts are not anticipated.

Fisheries management

The description of the Fishery Management Councils (FMC) contains several inaccuracies. First, Councils have jurisdiction over resources that were predominately distributed and landed within the states that comprise each FMC at the time the Council system was established with the Magnuson Act of 1977. The designated states of the NEFMC, MAFMC, and SAFMC are correct but the fisheries for which they each have primary responsibility do not stop at the borders of the FMC. Second, the Gulf of Mexico FMC includes all of the Gulf states from Texas to the West Coast of Florida. Third, the island-based FMPs are still under development by the Caribbean FMC. They have not yet been implemented. Fourth, the PFMC is not limited to fisheries off the west coast of California. The PMFC jurisdiction includes EEZ fisheries in Washington and Oregon.

TOR 2 Whether the analysis applies well-accepted and appropriate methods to identify potentially affected parties and estimate impacts.

The analytical framework used to identify potentially affected parties and estimate impacts is consistent with methods that have been used for analysis of critical habitat designations in the past. The analytical framework is appropriately cast as a benefit-cost analysis but with the paucity of data on the economic benefits of green sea turtle habitat protection the analysis necessarily focuses on the potential economic costs of critical habitat designation. This is suggestive of a cost-effectiveness analysis, however, even though the "...the Secretary has the discretion to consider excluding any area from critical habitat..." that discretion has not been exercised leaving only the with and without critical habitat designation alternatives. Note that this renders the statement that "These economic impacts provide information on some of the potential "benefits" of exclusion." without meaning since there were no areas considered for exclusion.

Given the baseline description the focus on compliance costs of critical habitat designation is an appropriate approach to the economic analysis. However, the assumptions imposed on the frequency and types of Section 7 consultations limit the ability to draw any meaningful insights on either a range estimate of impacts or their distribution. While the assumption that the future will repeat the past is a reasonable scenario, a scenario of either an increase or decrease in consultations is also reasonable.

The assumption that future Section 7 consultations will repeat the past means that the analysis is neither a projection nor a forecast. This means that the economic impacts are merely a replicate of past Section 7 consultations in each DPS and the detailed reporting of economic impacts for each DPS unit provides little value added information.

In addition to the frequency and type of Section 7 consultations, the procedures for estimating economic impacts also rest on 1) the timing of Section 7 consultations and 2) the cost of Section 7 consultation by type. The timing of Section 7 consultations necessary for estimating the present value of compliance costs is completely missing from entire document and while the consultation costs are reported in Table 4 the methods to estimate these impacts is not adequately described. The reference to Table 37 on page 38 is not correct and the discussion found in Appendix B does not allow for replication of the consultation costs included in Table 4. Notably, the estimated costs reported in Table 4

are based on source materials that date from 2002. The limitations of these data are not acknowledged and are not noted as a source of uncertainty.

Some minor comments under this TOR are as follow.

1. As noted under TOR 1 a citation is needed to bolster the case that compliance costs may provide an approximation of the efficiency effects of a regulation under some instances.
2. On page 19 the claim is made that ancillary benefits may result in gains in employment, output or income that may offset direct negative impacts to a region's economy. First, these are not economic efficiency effects, which is the primary emphasis in the section. Second, on page 14 it was argued that there would be no measurable regional economic impacts of the critical habitat designation.
3. Figure 1 is an image file of the standard equation used for discounting a future stream of benefits and costs to present value and the equation to estimate the annualized value. The image file contains an extraneous character "?" embedded in the PV formula, which would have been easily correctable had the same formulas and text been incorporated into the WORD document.
4. On page 37 a statistically significant decrease in informal consultations on construction projects is noted. The method used to perform this analysis needs to be documented.

TOR 3 Whether the assumptions used in the analysis are reasonable and supported by available information.

The analysis is based on the two key assumptions note on page 9 and a number of assumptions related to possible changes in Section 7 consultations. For the most part, the assumptions are based on available data or educated guesses. Within the bounds of the inherent embedded uncertainties of analysis of critical habitat designations the assumptions are generally reasonable.

The primary driver of the economic impacts is the key assumption that past types, frequencies, and locations are reflective of future section 7 consultations. This assumption rests on the three elements; 1) the types of section 7 consultations, 2) their frequency, and 3) their location. The types of section 7 consultations are known with certainty. The mix and frequency of section 7 consultations is uncertain. This uncertainty is compounded by the uncertainty in the location of section 7 consultations among DPS and compounded again at the location of DPS units. Given these multiple layers of uncertainty the reasonableness of the overall assumption that the future repeats the past is a matter of degree. Furthermore, as noted under TOR 2, with the exception of the beach nourishment activity, the estimated costs are determined by the mix and frequency of section 7 consultations. The location has no affect on the present value or annualized cost of the green sea turtle critical habitat designation.

The key assumption that existing baseline protections will be sufficient such that future activities will not affect the functionality of green sea turtle critical habitat. Given the detailed descriptions of baseline protections this assumption is reasonable.

As noted under TOR 2, the cost of section 7 consultations was based on a review of section 7 consultations conducted by Industrial Economics in 2002. This is not characterized or identified as an assumption in the economic analysis but should be regarded as such.

Assumptions are made in several instances under sections 2.3.1 to 2.3.9 regarding potential changes section 7 consultations. While it is reasonable to assume changes in section 7 consultations it would be helpful to establish criteria for expected changes or select a reasonable range of expected changes. For example,

- 4 beach nourishments are assumed under Section 2.3.1. Two are mentioned as being proposed so why 4? Why not 3 or 5?
- Section 2.3.2.4 the assumed reinitiation of 3 formal and 3 programmatic is characterized as “conservative”. What rationale was used to conclude these consultation are conservative and why 3 or each? Why not 2 of each?

TOR 4 Whether the uncertainties in the information are reasonably identified and characterized.

The primary sources of uncertainties that were identified were characterized with qualitative statements. With a few exceptions the direction of bias was characterized as unknown and the potential impact on estimated impacts was deemed to be minor. In most of these cases, the characterizations of uncertainty and potential impacts were reasonable. Beach nourishment was the only activity where the source of uncertainty was deemed to be “Potentially major”, yet in the economic analysis the only scenario that was examined was 4 beach nourishment projects. Given the potentially major impact on the economic impacts a wider range of possible scenarios for beach nourishment projects may have been warranted. A wider range of beach nourishments may also be warranted due to predictions of increased frequency and intensity of storm events that may result in increasing beach erosion.

The direction of change for both the marine debris and aquaculture activities was characterized as unknown. Given known predictions of increased frequency and intensity of storm events the future frequency of marine debris removal activities is more likely than not to increase. The direction of change for aquaculture is also more likely than not to be increasing rather than unknown. Note that in neither of these cases is the potential magnitude of change known, but the general direction of change should not be characterized as being unknown.

As noted in TOR 3 the estimated costs of section 7 consultations was based on a survey of consultations conducted by Industrial Economics in 2002. The estimated economic impacts were extrapolated from this source by applying recent GS wages to derive current labor costs of section 7 consultations. While this general approach is common practice in a variety of economic analyses and the determination that the IEC data are deemed best available science in analysis of critical habitat designations is duly acknowledged, the IEC survey reflects consultation practices of the early 2000’s should be considered as a source of uncertainty. Estimated consultation costs at the high and low in addition to the mid-point that was actually used could be included to capture this uncertainty.