Addendum to the External Independent Peer Review by the Center for Independent Experts Review of the Bering Sea and Aleutian Islands Crab Fisheries Economic Data Collection Program

Clarifications on Center for Independent Experts (CIE) Peer Review Reports Submitted in Accordance of the External Independent Peer Review

November 21, 2011

Note on Addendum Contents

The following clarifications and corrections are approved by the Center for Independent Experts (CIE) reviewers who participated in the Bering Sea and Aleutian Islands Crab Fisheries Economic Data Collection Program review, which took place from August to October 2011. The content in the addendum is provided to address minor, factual matters in two CIE independent peer review reports completed by Drs. Danna Moore and Richard Wang, respectively, and it does not in any way affect the reviewers' overall findings and conclusions.

Both the Alaska Fishery Science Center (AFSC), which requested the review, and the CIE reviewers participated in the development of the addendum. The AFSC provided the clarifications and corrections, which the CIE reviewers considered and, in some cases, expanded.

Finally, the addendum contents are provided in relation to the respective CIE independent peer review reports; thus, clarifications and corrections should be cross-referenced with the appropriate page and paragraph number of the reports.

Dr. Danna Moore's Independent Peer Review Report on the Bering Sea and Aleutian Islands Crab Fisheries Economic Data Collection Program

1. Page 3, line 1: NDFMC has evaluated data quality and, specifically, measurement error. It has identified the primary sources of this error as stemming from the questionnaire, questions, and respondents rather than from the survey process.

   CLARIFICATION BY AFSC: It is unclear to whom "NDFMC" refers. It seems likely that "NPFMC" was the intended reference, however the reviewer seems to be referencing work performed or overseen by AFSC to apply the TSE framework and records-check validation audits to provide empirical/statistical data quality information and measurement error metrics. It is unclear whether the apparent attribution to NPFMC is specific to the empirical/statistical analysis presented in the current update of database documentation (AFSC 2011a), or if the intent is to reference the full scope of data quality information captured in the database documentation and Council discussion papers, including the characterization of data quality and associated data use limitations in terms of A/B/C ratings identified in the Council/PSMFC review of EDR metadata documentation completed in 2009. Therefore, NDFMC should be changed to AFSC.

   REVIEWER: Reviewer agrees with the change.

2. Page 3, Recommendation 3: Redesign web and SAQ questionnaires and change matrix table questions.

   CLARIFICATION: What is meant by an SAQ?

   REVIEWER: SAQ refers to self-administered questionnaires (these refer to web surveys, mails surveys, or paper questionnaires handed to respondents to complete by themselves). The questionnaire respondent interaction occurs without interaction with an interviewer. No person or interviewer is present to offer clarifications to questions, to wordings, and/or definitions. All respondents interpret questionnaire items and survey intent based on "what it means to them".

3. Page 4, Recommendations 7 and 8

   CLARIFICATION: Comments 7 and 8 are duplicates.

   REVIEWER: Reviewer agrees that the comments are duplicates.

4. Page 9, explanation under "**accountants that perform data validation checking of producer/harvester EDRs**": In attendance were a few accountants that represent the group of accountants that interact with industry. They review and report the accuracy of harvester/producer/processors survey question answers. These are the recorded and submitted answers compared to record checks (each business' financial records and other information) used to produce survey responses at the question level.

   CORRECTION: No representatives of the CPA firm (AKT, Inc) that is contracted to perform validation audits were in attendance. Accountants in attendance were all representing the crab industry as EDR submitters. Information from AKT provided to reviewers was in the form of the written report "Alaska Crab Economic Data Report Data Validation: Report Prepared for Pacific States Marine Fisheries Commission, 2009 Calendar Year Data" (AKT LLP, 2010).

   REVIEWER: Reviewer agrees with the correction.

5. Page 12, second paragraph, line 3: One of their arguments is that most fishery participants and vessels are engaged in more than one fishery, and that sometimes these multi-species fishery activities (fishing for ground fish during a crab fishing trip) overlap and/or are combined into one trip's costs. Cost information is recorded or monitored in this way (by the trip for a vessel) …

   CORRECTION: This is not quite correct. Crab fisheries do not typically combine species on a given trip, but costs overlap over multiple fisheries, rather than on single trips. That is, many of a firm's costs are relatively fixed and/or accrue jointly to multiple fisheries (e.g. same gear used in separate crab and cod fisheries) and cannot be apportioned to a particular fishery or species without applying somewhat arbitrary assumptions.

   REVIEWER: Reviewer agrees with the correction.

6. Page 20, last paragraph: Most admirably, the PSMFC EDR program staff have developed and implemented a tiered ranking for variables (Category A to C) that describes and characterizes EDR data elements towards Data Quality status, the level of limitations of the data quality, and how reliable it is for use in data analyses and econometric modeling. These also describe the recommendations towards adjustment for limitations. This documentation will facilitate the usability of the EDR database for users.

   CLARIFICATION: the A/B/C ratings were not developed and implemented by PSMFC, but were specified by the Pacific Northwest Crab Industry Advisory Committee (PNCIAC), an industry advisory committee to the North Pacific Fishery Management Council, during it's review of EDR data quality

documentation in 2008 (see AFSC 2011a). This review evaluated descriptive information captured in the initial iteration of database documentation reflecting potential specification errors in variable elicitation identified in post-survey interviews and focus groups with EDR submitters and results from the initial audit implementation. The ratings are not based on recent audit results or other quantitative review or analysis of EDR data or audit results, have not been updated since 2008, and their validity as data quality indicators has been questioned by the Council's Scientific and Statistical Committee. It was due to these shortcomings that the application of the Total Survey Error framework was developed by AFSC staff.

The accuracy and burden scoring was a subsequent effort by industry workgroups with no direct involvement of AFSC staff. Although not statistically representative, the scoring process systematically examined the survey response process of individual submitters for each individual variable and provides additional guidance for survey redesign.

REVIEWER: Reviewer agrees with the clarification.

7. Page 22, last paragraph, line 8: In these instances auditors do not produce any better or more accurate question answers than the respondents.

   CLARIFICATION: It should be noted that audit protocols in place since 2007 (AFSC 2011a) record the incidence of each type of response error described here, and for most types of errors classified, auditors are able to identify appropriate corrections to respondent measurement errors. Auditors' inability to objectively assess response validity occurs principally in the case of missing records (classified as unsupported), and the classification protocol distinguishes between estimates without supporting records and estimates based on supporting records. Where the submitter provides supporting records, but uses an estimation method to derive a reported value (e.g. prorata distribution), auditors classify the response as an estimation and assess the validity of the estimation method (classified as sound assumptions/logic or flawed assumptions/logic) and provide a correction in the case of invalid estimation methods. The corrected value is then classified as a validated estimated value. The validation does not require that all submitters employ a uniform estimation method, and there is potential for substantial variation between estimation methods that are assessed as valid by auditors. Whether this variation renders the data collected to date unfit for use remains unresolved, but in most cases, appropriate survey redesign can largely eliminate both the uncertainty and excessive burden associated with estimation by the submitter.

   REVIEWER: Reviewer agrees with the clarification.

Dr. Richard Wang's Independent Peer Review Report on the Bering Sea and Aleutian Islands Crab Fisheries Economic Data Collection Program

1. Page 6, list of data stakeholders: Identifying the stakeholders of the BSAI Crab Fisheries EDR, and their respective roles and needs is a critical first step. The Council has identified the following stakeholders:

1. Crab Fisheries and Processors
2. North Pacific Fishery Management Council (Council)
3. NOAA Fisheries Alaska Fisheries Science Center (AFSC)
4. NOAA National Marine Fisheries Service (NMFS)
5. Pacific Northwest Crab Industry Advisory Committee (PNCIAC)
6. Pacific States Marine Fisheries Commission (PSMFC)
7. National Oceanic and Atmospheric Administration (NOAA)

CLARIFICATION: There is some redundancy in this list; including the hierarchical structure would make this clearer. It should also be noted that there are other relevant stakeholders that have not been as actively engaged as the key participants to date. A more complete (but not comprehensive) stakeholder listing is the following:

1. North Pacific Fishery Management Council
a. Council members
b. Scientific and Statistical Committee
c. Pacific Northwest Crab Industry Advisory Committee (PNCIAC)
i. Harvesters
ii. Processors
d. Other Council constituencies
i. North Pacific communities
ii. Crab crew participants
2. NOAA Fisheries
a. Alaska Fisheries Science Center (AFSC)
b. Alaska Regional Office (AKR)
c. NOAA Fisheries HQ
3. Alaska Department of Fish and Game
4. Pacific States Marine Fisheries Commission (PSMFC)
a. Alaska Fisheries Information Network (AKFIN)

REVIEWER: Reviewer agrees with the clarification.

2. Page 6, data consumers: Consumers are the users of the information products delivered out of the EDR. In the review of the provided documents, these are the Analysts. It is vital that the Analysts have good, accurate, timely, and useful data for making management recommendations in the BSAI Fisheries.

CLARIFICATION: It might be more appropriate to identify resource managers (principally the Council and NMFS) and the public as the data consumers, since the data are intended to support improved and more transparent management decisions; "Analysts" in this case are principals in the IPM team.

REVIEWER: Reviewer agrees with the clarification.

3. Page 9, last paragraph: This Report concurs with the insight provided in the Discussion Paper of November 2010

CLARIFICATION: As described in the document referenced in footnote 12 (see last paragraph of section 2.2 on p 11), auditors have issued feedback letters to submitters since the audit of 2008 EDR data in 2009 (validation of 2011 EDR data is currently ongoing and will be the basis for the third issuance of feedback letters). This practice was implemented at the request of some submitters' to provide a measure of personal performance in EDR compliance, as well as to counteract the potential for the sort of misimpression for which anecdotal evidence is cited in the 2010 Discussion paper and referenced by the reviewer.

REVIEWER: Reviewer agrees with the clarification.

4. Page 10, 3rd paragraph, 2nd line onward: Brian Garbers-Yonts and Richard Wang jointly recommended that AFSC propose a consistent method for each data element (such as fuel cost) that needs to be prorated. AFSC would make the method available for comments and revisions before final acceptance by the Submitters. In the discussion, this was informally referred to as the Generally Accepted Accounting Practice (GAAP) for Crab Fisheries EDR data that require pro rating. The Submitters (cost accountants and the Industry representative) were agreeable to the recommendation.

CLARIFICATION: It should be noted that two alternative approches to implementing a consistent methodology for providing disaggregated values to information consumers were discussed: a) a GAAP-type standard for use by EDR submitters for recordkeeping and consistent prorata estimation of disaggregate values where records are available only in aggregate form; and b) statistical imputation method applied by analysts to estimate disaggregated values, in conjunction with simplified aggregate (e.g., annual) reporting of EDR data by submitters. The reviewer does not appear to be referencing the discussion of method b) in this comment. Please clarify, if this was intended.

As discussed in the meeting, method a) would potentially reduce burden somewhat by establishing a sufficient standard that may currently be exceeded by some submitters, as well as improving confidence in data accuracy. Method b) would provide a greater reduction in burden by eliminating the need for prorata

distributions by individual submitters, and potentially provide greater accuracy by employing more robust statistical methods and data resources. There was also a discussion of the potential for combining the two alternative methods by integrating online data submission with automated database analysis to provide instantaneous display of imputed values for individual submitters, and facilitating submitters' validation or adjustment of imputed values as appropriate. There appeared to be broad concensus that this would be a best practice approach, but would require further development of statistical methods as well as improved database architecture and online reporting applications.

REVIEWER: Reviewer agrees with the clarification.

5. Page 11, last paragraph, last line: As custodians, and also key members of the information product management team, they are responsible for the development of a strategy to manage information as the product of a well-defined information production process, and to manage the life cycle of information product. The strategy must encompass data assets of the entire organization (be it AFSC, NFMS, or NOAA) to ensure that useful data is available to support the strategic objectives of the organization.

CLARIFICATION: It should be noted that PSMFC and AKFIN provide services as data warehouse/custodian to their clientele, including the Council and agencies (NOAA Fisheries, Alaska Department of Fish and Game, and others). AKFIN has limited discretion to shape the strategic objectives of the information production process, which is more properly the role of its clientele agencies to coordinate.

REVIEWER: Reviewer agrees with the clarification.

6. Page 12, 2nd paragraph, 2nd line: Development of such a strategy also directly addresses the primary concerns of the Submitters—that data is of little use for AFSC management decisions.

CORRECTION: AFSC does not make management decisions. Intended reference is probably to the North Pacific Fisheries Management Council.

REVIEWER: Reviewer agrees with the clarification.

7. Page 14, 3rd paragraph, 1st line: It should be noted that the ATK data assessment differs from the above database perspective.

CORRECTION: Correction: ATK should read AKT. Note that the data assessment referenced here is focused on quantifying the incidence and magnitude of survey error in the data as reported by submitters.

REVIEWER: Reviewer agrees with the correction.

8. Page 14, 4th paragraph, 2nd line: In this section we discuss the accounting approach, referred to as the Data Validation Audit, which AFSC contracted to AFK.

CORRECTION: Correction: AFK should read AKT.

REVIEWER: Reviewer agrees with the correction.

9. Page 16, 3rd paragraph, last line: Furthermore, data elements in the EDR Master Data Dictionary (which provides the data and context for the underlying data element) were classified into three categories based on ten scores as shown in Table 4.

CORRECTION: Categorization of variables by data quality (A/B/C) did not make use of results from audit validation based on the protocol described in Table 5. As described in AFSC (2011a), A/B/C classification was determined by industry review of EDR forms and submitters' assessment of potential for reporting error.

REVIEWER: Reviewer agrees with the correction.