

**Crab Economic Data Collection
North Pacific Fishery Management Council
October 2010**

As a part of its Bering Sea and Aleutian Island crab rationalization program, the Council developed an economic data collection program to provide information to analysts to assess the effects of the program and future amendments to the program. Participants in the programs assert that costs of submission are extraordinary and that data cannot be accurately and consistently reported across respondents, preventing their use for some of their intended purposes. In addition, participants assert that several relevant factors are unobservable, preventing the use of the data for analyses as intended.

At its February 2010 meeting, the Council received a discussion paper from staff concerning economic data collection, which suggested a process that could be used to refine existing programs and advance future programs. The Council directed staff to begin advancing the suggested process through an assessment of the crab economic data reporting program. This assessment would be used to consider revisions to the program. Specifically, the Council requested that the assessment:

- 1) Summarize Council's initial purposes for collection of data (based on Council's initial action on data collection)
- 2) Assess each data element currently collected based on its
 - Accuracy
 - Cost of collection
 - Utility for informing management decisions

This assessment would draw on prior data assessment of Alaska Fisheries Science Center, Pacific Northwest Crab Industry Advisory Committee, and various industry workgroups.

- 3) Develop suite of alternative data collection amendments for Council consideration.

This paper is staff's response to the Council's request. The first part of the paper summarizes the initial purpose for the data collection program, outlining both the purpose for the data collection, as well as listing some of the estimates that analysts intended to generate with the data. The second part of the paper briefly discusses the accuracy, cost of collection, and utility of the current data collection program. A more detailed summary is included as an appendix. The third part of the paper is intended to be used by the Council to shape a future action to modify the data collection. Rather than define specific data elements that could be included in alternatives, that section attempts to provide a framework that the Council could use to develop alternative data collection measures. That discussion could be used to develop a purpose and need statement, to guide the Council in development of specific alternatives at this meeting or provide staff guidance for the development of more specific alternatives that the Council could consider adopting for analysis at a future meeting. Using this approach will allow the Council to more specifically construct an amendment package to address its priorities and concerns.

The Council's rationale for data collection and its data collection motion

In June 2002, early on in the development of the crab economic data collection program, the Council adopted an expansive motion identifying its purpose for pursuing data collection. Although lacking some specificity, the motion suggests that collected data would be used to examine the economic and social effects of the rationalization program on harvesters, processors, regions, and communities. In an attempt to further understand the Council's objectives, analysts relied on the following five problems identified in the purpose and need statement for the rationalization action:

- i. Resource conservation, utilization and management problems;
- ii. Bycatch and its associated mortalities, and potential landing deadloss;

- iii. Excess harvesting and processing capacity, as well as low economic returns;
- iv. Lack of economic stability for harvesters, processors and coastal communities; and
- v. High levels of occupational loss of life and injury.

Based on these identified problems, analysts suggested measures that could be used to examine the success of the program in achieving objectives. Since the data collection program was intended to address economic aspects of the fishery, only the third and fourth problems were pursued in the data collection. To examine these objectives, the analysts identified a number of measures and the data necessary to estimate those measures. These include:

Excess harvesting and processing capacity and low economic returns

For both the harvest sector and processing sector:

- 1) capacity and capacity utilization
- 2) profits
- 3) quasi-rents
- 4) productivity
- 5) technical efficiency
- 6) allocative efficiency

Computation of these measures requires the following data:

- a) variable input quantities and prices
- b) capital quantities and fixed costs
- c) catch quantities and prices (species)
- d) input quantities and prices
- e) output quantities and prices by product form

Lack of economic stability for harvesters, processors, and coastal communities

For both the harvester sector and processor sector:

- 1) Distribution of ex vessel revenue
- 2) Distribution of product revenue
- 3) Distribution of profits and quasi rents within and between harvesters and processor
- 4) Distribution of privileges within the harvesting and processing sectors
- 5) Seasonality of catch and revenues by location
- 6) Vertical integration
- 7) Domestic and foreign ownership
- 8) Harvesting employment and payments to harvesting crews
- 9) Processing employment and payments to processing crews
- 10) Involvement of crab fishery participants in other fisheries
- 11) Value of privileges
- 12) Regional economic impacts

Computation of these measures requires the following data:

- a) Vessel owner information
- b) Plant owner information
- c) Catch
- d) Landings
- e) QS and PQS ownership information
- f) Harvester crew employment and compensation
- g) Processor crew employment and compensation
- h) QS and PQS prices and quantities transferred
- i) Expenditures by location
- j) Crew residence information

The Council's preferred alternative for data collection omits non-variable (or fixed) cost data from the collection, except to the extent necessary to understand variable costs¹. In addition, the data collection focuses on crab fishery data. Certain of these data are collected at the level of individual crab fisheries to provide more detailed information for analyses, as fisheries differ in their prosecution. Other data are crab only costs, while some additional data are collected for all fisheries.²

Assessment of the existing collection

The program collects data from catcher vessels, catcher processors, shore based processors, and floating processors. Several assessments of the quality of data collected have already been undertaken by agency staff and industry, including the Pacific Northwest Crab Industry Advisory Committee. These assessments are relatively consistent in their views of the quality of the data, with some notable exceptions. The attached data assessment (see [Appendix 2](#)) summarizes information from these prior assessments develop a simplified evaluation of the quality of each data element, as well as the cost associated with reporting. This summary assessment is framed to provide a backdrop for the development of alternatives to revise the data program in the future.

In reviewing the assessments and fashioning revisions to the data collection program, the Council should primarily assess the extent to which the collection of data elements will improve information concerning the fisheries. An assessment of the utility of the data collected poses certain challenges. First, the utility of a data element is dependent on several aspects of that element and its collection. The information value of a data element often arises directly from the nature of the factor that it represents. For example, landings by a vessel are particularly informative, as they are representative of a vessel's production from the fishery. Spending on paper supplies used to maintain logs and business records is less fundamental to understanding the fishery. Utility is also dependent on the accuracy of the data. Inaccuracy (or even unknown accuracy) can substantially diminish utility by leaving analysts (and policymakers) uncertain of the reliability of any analytical results. In addition, a data element's utility will also depend on the information of the element relative to other data currently collected. Data concerning product forms and sizes may be informative, but (depending on the fishery) may represent only a marginal improvement over data on product sizes alone. Lastly, the utility of data elements may vary with other data availability. For example, pot purchases may provide useful and relevant information concerning a vessel's expenditures, but without knowing whether the vessel shares pots owned by other vessels in its cooperative, these costs are less informative (and possibly provide misleading information) concerning the vessel's operation and costs. Each of these different aspects is considered in assessing the utility of the data.

A review of the metadata (or the table accompanying this document concerning data quality) suggests that the data collection in their current form have (and, in the near future, will continue to have) several

¹ Should the Council wish to continue to use this rationale for inclusion of fixed cost data in the collection program, the analysis could reexamine fixed cost variables based on this criteria.

² Subsequent to the passage of rationalization, the 2006 reauthorization of the MSA modified authority for the analysis of socioeconomic impacts and the collection of economic and social data. These changes eliminate certain restrictions on the collection economic data (particularly from processors) and are interpreted by agency representatives as mandating broader economic data collection. In addition, an initiative within the agency to develop a standard set of social and economic performance measures and data collection is currently underway. A review of these broader, agency-level initiatives is beyond the scope of the discussion requested in the Council's motion; however, the Council may wish to request a review of current status of NOAA and NMFS economic data collection initiatives, as well as alternative sources for data collection in the crab fisheries relevant to redefining the objectives of the data collection program. These structural changes should be considered in the further development of the data collection program.

limitations. Several elements are not accurately or consistently reported.³ In addition, the reviews of the data submissions suggest that barriers (surmountable only with considerable and time consuming efforts) are likely to prevent the accurate and consistent collection of some of these items in the near future. Other elements provide only partial information concerning operations in the fisheries. For example, the collection includes only purchased bait, although many vessels in the crab fisheries harvest a portion of their bait. To estimate quasi-rents (a suggested goal for the data collection program) would require comprehensive collection of information concerning the costs of bait harvesting, if accuracy is desired in this estimation. Alternatively, analysts are left to approximate total bait costs through proxies for the cost of catching bait and bait usage from vessels that purchase their bait. Similarly, many of the shore based processors deploy crews as needed to process groundfish and crab. Company housing is often provided, along with meals and other support services. The costs of labor associated with crab fisheries must be apportioned from these labor and labor support costs. An analyst will have an incomplete understanding of the operations, if the method of apportionment and influences of other fisheries on crab labor choices are not considered. Complete consideration of these factors likely requires an understanding of the timing and labor demands of those other fisheries. To fulfill the original objectives of the data collection (such as estimation of quasi-rents) would require that these elements be fully and consistently reported.⁴

Development of data collection revisions

The Council could consider developing the scope of the data collection based on two major considerations. First, the Council could consider whether to maintain reporting at the individual fishery level or pursue a more expansive approach that collects data at a more aggregate level across either all crab fisheries or all activities of a vessel or plant. The current collection focuses in large part on individual crab fishery information, but collects some information concerning all crab fisheries activity and other data at the vessel and plant level (which support operations in all fisheries and activities). A broader scoped program could be structured to collect data from all crab fisheries activity or activity in all fisheries, as opposed to only data from individual crab fishery operations (or fishery level data). If the broadest collection is adopted, data concerning all vessel/plant costs are collected. Depending on the data characteristics and the potential detail of other available data, analysts may use these data in one of two ways. First, the data may be used to examine the operations of the vessel/plant in its entirety. For example, plant crew data collected for all fisheries would allow analysts to examine the compensation of crew in all activities (rather than only crab activities). This broader activity estimate might be more informative of overall plant effects, in cases where separation of crab fishery impacts are either infeasible or incomplete. This may be the case for elements such as processing employment, particularly at plants that move workers between groundfish and crab lines as landings flow through the plant. Estimates of crab processing employment or labor alone are likely incomplete descriptions of the workforce and may inaccurately characterize crab fishery effects, given the interplay and interdependence of the plant on groundfish and crab processing. Alternatively, analysts may be able to statistically apportion costs across the various fisheries in which a vessel/plant operates to derive approximate measures of costs associated with a particular fishery. Whether an analyst could accurately apportion the data would depend on the level of detail of data used to construct the proxy measure (e.g. using days fishing or pounds processed to pro-rate costs by fishery), as well as the nature of the data collected and the operations. It might be possible to apportion certain input costs between fisheries, if other elements accurately support the disaggregation.

³ These inaccuracies and inconsistencies arise from a variety of sources. In some instances, the questions in reporting forms assume a different structure of industry operations and recordkeeping. These misunderstandings arise not only from a misunderstanding of the industry during the data collection program development, but also from changes in the industry brought on by the rationalization program.

⁴ Additional aspects of the current program that influence the accuracy, cost of collection, and utility of the collected data more broadly are the validation audit process and the “blind” format that analysts are limited to when using the data. Both of these aspects are mandated by current regulation. Arguably beyond the scope of this discussion paper, these aspects of the program could be identified by the Council for consideration in the analysis of program changes.

Development of a broad-based data collection program that collects data at the vessel and plant level could build on the experiences from the existing data collection and would be consistent with the approach adopted in the Amendment 80 data collection. Taking this approach, some elements that are problematic would need restructuring and revisions. For example, in the current collection, vessel expenditures may be reported as either “investments” or “repairs and maintenance” depending on an accounting choice of the vessel owner. Efforts could be undertaken to establish a more consistent means of reporting these elements. Also, a portion of most vessels’ fuel purchases are not used in the year of purchase. The degree of this spillover and the effects on uses of the data would need to be more fully understood. This approach to data collection might facilitate the broad scope of analyses suggested by the Council’s original motion concerning data collection. Yet, the ability of analysts to achieve the goals suggested in the Council’s original motion through more aggregate reporting could be limited to the extent that information is not available to support statistically acceptable and accurate disaggregation.⁵

The Council could also consider defining its data collection program by focusing its collection on certain elements that provide particularly relevant information concerning fishery operations and their effects, as well as the effects of management actions on those operations. This approach would eliminate the collection of data elements that are less informative of operations, but which might be desirable for more all-encompassing analyses, such as estimating profits. This approach might be intended to reduce the burdens associated with data submission, while still providing improved information concerning the certain aspects fisheries operations and their effects. The collection, however, would not support some of the more expansive analyses that might be possible with a broader data collection program.

The two approaches could be integrated to some degree, if the Council were to elect to collect certain data at the crab fishery level (such as crew compensation) and other data on a broader basis (such as annual fuel purchases). In pursuing any of these paths, the Council should clearly identify its objectives through its purpose and need statement. The purpose and need statement should identify the Council’s rationale for undertaking an action revising the data collection. That purpose and need statement could identify the importance of improved information concerning fishery operations and the effects of management actions on those operations (which is the purpose for economic data collection, generally). The purpose and need statement could go on to identify the difficulties with accuracy and consistency in the existing data collection as the basis for modifying the program. Depending on the Council’s choice for addressing that problem, the Council could adopt a purpose and need statement that directs the data collection toward either 1) a broad scope data collection program that includes more complete information concerning all activities of vessels and plants that participate in the crab fisheries, 2) a more limited scope data collection that includes only crab fishery information (but aggregated across all crab fisheries), or 3) a more focused collection of data from each crab fishery.

⁵ For example, disaggregation of fuel use data across fisheries will not be feasible, if data are not collected concerning all vessel activities (such as activities in other fisheries, transiting, and tendering). Without detailed information concerning these operations, analysts would certainly be unable to disaggregate these data.

		Fishery information level		
		By individual crab fishery	<u>Crab fishery only</u>	<u>All fisheries</u>
Economic information level	<u>Critical elements</u>	Critical operational components in the crab fisheries	Critical operational components in the crab fisheries	Critical operational components pertinent to activities in all fisheries
	<u>All elements</u>	All operational components in the crab all fisheries	All operational components in the crab fisheries	All operational components in all fisheries

In considering these two factors in defining the scope of the data collection program, the Council should consider the extent to which any data would suffer from inaccuracy, imposes excessive submission costs, and duplicates existing data collection. While some elements in the current data collection are informative and can be efficiently submitted with high quality, others are not reported accurately. Still, others have been identified by industry as excessively costly. In addition, some duplicate existing data collection efforts. In considering the revisions to the data collection effort under this action, the Council should assess these factors with respect to each data element and determine a reasonable tradeoff between the additional information that will be gained by including the element in the data collection and the additional burden associated with the reporting. This assessment should include consideration of the most efficient source of the desired information and the potential for redistributing reporting requirements from vessel and plant owners to different entities. In assessing the information, the Council should consider both the accuracy of the reporting that can be expected from current data submitters as well as alternative data providers, and the extent to which the element gives insights that are otherwise unattainable through other data that are currently collected.

Although assessing these various factors may seem straightforward, the effect of different data collections on the ability of analysts to provide information to the Council may not always be obvious. Certain economic analyses may require specific economic data. In particular, cost data may be required to perform analyses of capacity utilization, productivity and production efficiency, quasi-rents, rents, cost minimization, and profits. As cost data are omitted from the collection, the ability of analysts to develop these analyses will be limited. For example, pot registration and pot pull information provide measures of the use of pots by vessels in the fleet. Yet, these data cannot be directly substituted for pot purchases in most economic models. Generally speaking, rent models require the most comprehensive data (including fixed cost data). Omitting fixed cost data, quasi-rent models (which omit fixed costs) and cost minimization models (which omit revenue information and may omit fixed costs) may still be estimated with relatively comprehensive variable cost data. As variable cost data are scaled back the ability of analysts to perform these analyses will also be compromised. In determining whether to forgo collection of certain elements, the Council should consider the degree to which its decision may limit these analytical abilities.

Although analysts may be limited in the extent of the models that can be estimated with omission of critical data elements, if all important indicator variables are included, it may be possible to gain insights from carefully specified models. For example, a program that includes collection of fuel data, crew data, and other important variable cost inputs may still allow modeling of quasi-rents, if only variable cost

elements of minor importance or little variability are omitted. Such variables might include vessel freight costs (which have been minimal and infrequent under the program). Much of the data currently collected, however, is necessary for these modeling exercises. In short, the potential that the data collection may prevent analysts from estimating these more powerful economic models must be considered.

As a consequence of these potential limitations, should the Council consider a scaled-back data collection program, the development of reasonable means of obtaining these data in the future should be considered. For important data elements, the Council could consider the development of a process to ensure that these data may be later incorporated into the data collection program. A process could be identified for extending the program to collect these variables, once specific, identified Council concerns are met. This process could be used to ensure that the Council benefits from these more informative models, as soon as those data can be accurately and cost effectively collected to its satisfaction.

As a part of this process, the Council could prioritize variables of greatest interest. For example, the Council believes that additional information concerning pot purchase and use arrangements would be beneficial to its understanding of the rationalization program (or possible future management changes), it could identify the structure of pot markets and sharing arrangements as a priority area for study for future extensions of the data collection program. This type of prioritization would allow for the most efficient and effective use of staff resources. The Council could also consider a pilot collection program with more intensive validation to collect certain of these elements. The program could be focused on elements that are high priority and that are believed to have a reasonable level of accuracy. Such a program could be developed simultaneously with the modification to the data collection program revisions or as a separate project. Extensions of the collection to additional elements could be undertaken as methods are developed for ensure that the submissions will be informative, accurate, and cost effective.

Conclusion

The Council has expressed its intention to revise the economic data collection reporting requirements that apply to participants in the crab rationalization program. This paper sets out background information that the Council could use to initiate that process. The starting point for the process is development of a purpose and need statement defining the Council's objectives for collecting economic data from fishery participants. The Council's motion specifically requested that this paper include a description of its original purpose and need statement. The Council may wish to draw from that purpose and need statement in considering the development of a purpose and need statement for this action. The Council also requested a review of the existing data collection that specifically assessed the accuracy, cost of collection, and information value. The Council could adapt these considerations, in a manner that identifies their relative importance, for inclusion in its purpose and need statement. In considering the appropriate scope and purpose of its data collection program, the Council should consider the effects of those scoping decisions on potential analyses that could be undertaken. For example, narrower data collection programs that exclude certain cost items may not support some analyses of rents, quasi-rents, and efficiency changes in the fisheries. Identifying the scope of the data collection program

Appendix 1 – June 2002 data collection motion

In June 2002, early on in the development of the crab economic data collection program, the Council adopted the following motion concerning data collection:

The North Pacific Fishery Management Council and the National Marine Fisheries Service shall have the authority to implement a mandatory data collection program of cost, revenue, ownership and employment data upon members of the BSAI crab fishing industry harvesting or processing fish under the Council's authority. Data collected under this authority will be maintained in a confidential manner and may not be released to any party other than staffs of federal and state agencies directly involved in the management of the fisheries under the Council's authority and their contractors.

A mandatory data collection program shall be developed and implemented as part of the crab rationalization program and continued through the life of the program. Cost, revenue, ownership and employment data will be collected on a periodic basis (based on scientific requirements) to provide the information necessary to study the impacts of the crab rationalization program as well as collecting data that could be used to analyze the economic and social impacts of future FMP amendments on industry, regions, and localities. This data collection effort is also required to fulfill the Council problem statement requiring a crab rationalization program that would achieve "equity between the harvesting and processing sectors" and to monitor the "...economic stability for harvesters, processors and coastal communities". Both statutory and regulatory language shall be developed to ensure the confidentiality of these data.

Any mandatory data collection program shall include: A comprehensive discussion of the enforcement of such a program, including enforcement actions that would be taken if inaccuracies in the data are found. The intent of this action would be to ensure that accurate data are collected without being overly burdensome on industry for unintended errors.

The Council adopted a follow up motion in February 2003, which added specificity to its earlier motion:

The mandatory data collection program shall have the following elements (from the February 2003 motion):

- A. Purpose. The purpose of the data program is as set out in the June 2002 motion. The Council will require the production of data needed to assess the efficacy of the crab rationalization program and to determine its relative impact on fishery participants and communities.
- B. Type of data to be collected. The data collected shall be that needed to achieve the Council's purpose, with the following general guidelines:
 1. The information will be specific to the crab fisheries included in the crab rationalization plan.
 2. The data shall include information on costs of fishing and processing, revenues for harvesters and processors, and employment data
 3. The general guide for information requirements will be as set out in the draft surveys prepared by National Marine Fisheries Service dated 9/18/02, except
 - a) Non-variable costs shall be collected only as needed to explain and analyze variable cost data.
 - b) Collect a unique identifier for harvesting and processing crew members to explain changes in participation patterns as requested by the AP
 4. Historical information will be required as recommended by the Data Collection Committee.
- C. Method of Collection. Data shall be submitted to an independent third party agent such as the Pacific States Marine Fisheries Commission.
- D. Use of data. Data will be used following these general guidelines:
 1. Data shall be supplied to Agency users in a blind and unaggregated form.
 2. The agencies will develop a protocol for the use of data, including controls on access to the data, rules for aggregation of data for release to the public, penalties for release of confidential data, and penalties for unauthorized use.

3. The agencies will revise the current Memorandum of Understanding governing the sharing of data between the State of Alaska and National Marine Fisheries Service, and will address in this MOU the role of the third party data collection agent.
 4. The Agency and Council will promote development of additional legislative and regulatory protection for these data as needed.
- E. Verification of Data. The third party collection agent shall verify the data in a manner that assures accuracy of the information supplied by private parties.
- F. Enforcement of the data requirements. The Council endorses the approach to enforcing the data requirements developed by the staff and the Data Collection Committee, as set out on page 3.17-20 in the February, 2003 document entitled “BSAI Crab Rationalization Program, Trailing Amendments”, which provides:

Anticipated Enforcement of the Data Collection Program The analysts anticipate that enforcement of the data collection program will be different from enforcement programs used to ensure that accurate landings are reported. It is critical that landings data are reported in an accurate and timely manner, especially under an IFQ system, to properly monitor catch and remaining quota. However, because it is unlikely that the economic data will be used for in-season management, it is anticipated that persons submitting the data will have an opportunity to correct omissions and errors³⁷ before any enforcement action would be taken. Giving the person submitting data a chance to correct problems is considered important because of the complexities associated with generating these data. Only if the agency and the person submitting the data cannot reach a solution would the enforcement agency³⁸ be contacted. The intent of this program is to ensure that accurate data are collected without being overly burdensome on industry for unintended errors.

A discussion of four scenarios will be presented to reflect the analysts understanding of how the enforcement program would function. The four scenarios are 1) a case where no information is provided on a survey; 2) a case where partial information is provided; 3) a case where the agency has questions regarding the accuracy of the data that has been submitted; and 4) a case where a random “audit” to verify the data does not agree with data submitted in the survey.

In the first case, the person required to fill out the survey does not do so. In the second case, the person fills out some of the requested information, but the survey is incomplete. Under either case that person would be contacted by the agency collecting the data and asked to fulfill their obligation to provide the required information. If the problem is resolved and the requested data are provided, no other action would be taken. If that person does not comply with the request, the collecting agency would notify enforcement that the person is not complying with the requirement to provide the data. Enforcement would then use their discretion regarding the best method to achieve compliance. Those methods would likely include fines or loss of quota and could include criminal prosecution.

In the third case the person fills out all of the requested information, but the agency collecting the data, or the analysts using the data, have questions regarding some of the information provided. For example, this may occur when information provided by one company is much different than that provided by similar companies. These data would only be called into question when obvious differences are encountered. Should these cases arise, the agency collecting the data would request that the person providing the data double check the information. Any reporting errors could be corrected at that time. If the person submitting the data indicates that the data are accurate and the agency still has questions regarding the data, that firm’s data could be “audited”. It is anticipated that the review of data would be conducted by an accounting firm selected jointly by the agency and members of industry. Only when that firm refuses to comply with the collecting agencies attempts to verify the accuracy of the data would enforcement be contacted. Once contacted, enforcement would once again use their discretion on how to achieve compliance.

³⁷The intent of the program is to have enforcement actions triggered by the willful and intentional submission of incorrect data or noncompliance with the requirements to submit data.

³⁸The term enforcement agency in this case may or may not include the RAM Division and the Office of Administrative Appeals (in addition to NMFS Enforcement). Those details are still under discussion within NOAA.

The fourth case would result when the “audit”³⁹ reports different information than the survey. The “audit” procedure being contemplated is a verification protocol similar to that which was envisioned for use in the pollock data collection program developed by NMFS and PSMFC. During the design of this process, input from certified public accountants was solicited in order to develop a verification process that is less costly and cumbersome than a typical “audit” procedure. That protocol involves using an accounting firm, agreed upon by the agency and industry, to conduct a random review of certain elements of the data provided⁴⁰.

Since some of the information requested in the surveys may not be maintained by companies and must be calculated, it is possible that differences between the “audited” data from financial statements and survey data may arise. In that case the person filling out the survey would be asked to show how their numbers were derived⁴¹. If their explanation resolves the problem, there would be no further action needed. If questions remained, the agency would continue to work with the providers of the data. Only when an impasse is reached would enforcement be called upon to resolve the issue. It is hoped that this system would help to prevent abuse of the verification and enforcement authority.

In summary, members of the crab industry will be contacted and given the opportunity to explain and/or correct any problems with the data, that are not willful and intentional attempts to mislead, before enforcement actions are taken. Agency staff does not view enforcement of this program as they would a quota monitoring program. Because these data are not being collected in “real” time, there is the opportunity to resolve occasional problems as part of the data collection system. Development of a program that collects the best information possible to conduct analyses of the crab rationalization program, minimizes the burden on industry, and minimizes the need for enforcement actions are the goals of the data collection initiative.

³⁹This “audit” could be the result of either the random review process that is contemplated or an “audit” triggered under scenario three.

⁴⁰However, in cases of non-compliance in which enforcement has to be notified, the data verification process is likely be more comprehensive.

⁴¹Any time a number must be derived, the survey will provide direction on how to calculate the information requested. This direction should help minimize differences. However, when discrepancies do arise, the firm will be given an opportunity to show how they derived their figures, and correct the information if necessary.

Appendix 2: Catcher Vessel Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
1	Fish ticket number	High	Low	Used to verify consistency of records and link to other data sources	None	fish tickets - fully redundant with fish tickets	drop collection
1	Days fishing	B - Medium	Medium	Useful for analyzing operational and efficiency changes; unclear the extent of any improvement on existing fish ticket data	May lose some accuracy without partial days; includes days transiting on grounds (which is operationally different from fishing); no direction on treatment of partial days	1) fish tickets - days fishing as defined by date gear was first deployed and date of landing 2) logbooks, which collect date and time of setting and hauling for each string, catch in each string, and offload date	1) separate traveling and offloading; 2) clarify instructions 3) drop collection
1	Days traveling and offloading	B - Medium	Medium	Used for analyzing operational and efficiency changes; unclear the extent of any improvement on existing fish ticket data	No distinction between traveling and offloading time, which are operationally different; reports may or may not include time transiting between ports; may need to know base port to assess meaning of the data (e.g., King Cove, Kodiak, Dutch Harbor)		
2	Landings by share type - pounds	B - High	Medium	Useful for determining distribution of catch by share type	None	These data are redundant with IFQ data	
2	Deadloss by share type - pounds	B - High	Medium	Useful for determining distribution of catch by share type	None		1) Revise to ensure accuracy, may require some accommodation, if price distinctions are not clear; 2) add identifier for sales to affiliates; 3) drop collection
2	Landings by share type - revenues	B - Medium	Medium/High	Allows for comparison of prices by share type	Often difficult to separate payments by share type; requires tracking of bonuses, which may occur over an extended period; may involve some judgment concerning proportional distribution across different share types; unclear whether sales to affiliates should be identified (currently they are not)	None	
3.1	Vessel owner's IFQ used on the vessel by share type	C - Medium/Low	High - requires extensive spreadsheets	Used to show the distribution of activity and revenues in the fishery	Ignores pooling of quota by cooperatives - data may not reflect fishery operation; cannot be consistent, as vessel owner is not defined; Does not allow for entry of owner held C shares	None	1) Revise section on quota fishing/leasing - incorporate definitions of leasing and ownership; 2) supplement with data collection from inactive share holders; 3) add line for C shares; 4) simplify to collect only information on arm's length leases 5) drop collection
3.1	Vessel owner's IFQ used on other vessels by share type						
3.2	Leased quota by share type - pounds	C - Medium/Low	Medium	Used to show the distribution of activity and revenues in the fishery	May not be accurately reported due to complex ownership structures and owners of multiple vessels; cannot be consistent, as lease is not defined	None	
3.2	Leased quota by share type - cost						

* Letter scale (A/B/C) represents metadata accuracy finding; stated accuracy (high/medium/low) is based on metadata and industry review and input

Appendix 2: Catcher Vessel Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
3.2	Leased quota by share type - crew contributing shares	C - Medium/Low	Medium	Used to show the number of crew on a vessel holding shares in the fishery	May not accurately reflect cooperative structure and share pooling, cannot be interpreted as active share holders	May be redundant with active participation reporting	1) revise collection to count/identify crew with share holdings; 2) drop collection
4.1	Number of crew by fishery	A - High/Medium	Low	Used to examine changes in fishery operations	Subject to inconsistency and misinterpretation - does not show number of crew on vessel at any time (reflects either the sum of crew employed in the season or the most on the vessel at any one time)	Elandings includes number of crew on vessel at time of landing	1) revise instruction to identify desired information; 2) drop collection
4.1	Payments to crew						clarify reporting requirement and instructions, if captain is owner;
4.1	Payments to captain	A - High/Medium	Low	Used to examine payments to labor	Some uncertainty over non-crab fishery payments; some uncertainty of compensation, if crew pay certain expenses; captains payments may be non-market, when the captain also owns the vessel; data may be misleading for some purposes as boatyard and transiting work are not available	None	clarify that amount reported is after all crab fishing related deductions and charges (excluding personal spending); expand collection to include boatyard time and transiting and identify any additional payment for that work
4.2	Labor payment details - charges and deductions	A - High/Medium	Low	Used to examine changes in labor payment structures	Data have very limited information since details for charges and deductions are not provided (i.e., amount charged/ deducted); no provision for identifying if crew are not subject to share system	None	1) expand to include deduction amounts and clarify instructions, if captain is owner; include option for payment on system other than share system; 2) drop element
4.3	Revenue shares - owner/crew/captain	A - High/Medium	Low	Used to examine the distribution of revenues (after deductions)	Details of deductions creates uncertainty in meaning - without detailed deductions and charges (which are not collected) this can be misleading and is uninformative; captain's share may be non-market, if captain is also vessel owner	None	drop element
4.4	Crew license number/CFEC permit number	A - High/Medium	Low/Medium	Used for analyzing distribution of crew and identifying unique crew	Crew license residence data may be unreliable; includes no demographic data; cannot necessarily be used to estimate distribution of benefits by location, since we don't know how much any crewmember was paid or how much any crewmember worked	None	Collect crew residence/ demographic information; supplement with crew member trips and/or payments

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Appendix 2: Catcher Vessel Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
5.1	Insurance premium - crab only	C - Low	Medium	Used for examining changes in cost structure	Variety of insurance contracts complicates any interpretation; usually prorated by the submitter to separate crab/non-crab - proration is somewhat arbitrary and may differ across submitters - is often confused with 5.2 c; too many types of insurance to decipher meaning (e.g., P&I, hull, liability, vehicles, commercial liability, cargo, longshoreman's, breach of warranty)	None	1) collect total premium amount (including all activities); 2) drop collection
5.1	Paid deductibles - crab only	C - Low	Medium	Used to examine changes in cost structure	Payments are often spread over several fiscal years - or are not incurred in year of incident; may overlap with repair and maintenance	None	1) Revise to ensure no overlap with repair and maintenance; 2) drop collection
5.1	Pot purchases - number	C - Medium/Low	Medium	Used to examine operational and cost structures	No distinction between new and used gear; for used gear may be difficult to get accurate count (as damaged gear may/may not be counted); may be difficult to separate crab costs from other fisheries; will not reflect actual operations; costs may or may not include refurbishment costs; omits exchanges and pooling of pots that is currently occurring	Substantial data are currently collected through Federal log books/State pot registration/State port sample interviews to show the number of pots used and effort levels in the fishery; no cost information is available	1) revise collection to more accurately record pot purchases by including detail on pot conditions and improved price information; 2) drop collection
5.1	Pot purchases - cost						
5.1	Pot purchases - location	C - Medium/Low	Medium	Used to examine distribution of economic activity	Difficult to track location from companies with multiple locations or purchases of pots from storage; economic effect of pots purchased from storage is very different from pots purchased new; value of data is compromised by its dependence on the pot number and cost information	None	drop collection
5.1 d	Line and other gear purchases - costs	C - Medium	Medium	Used to examine operational and cost structures	Typically cannot separate out crab costs; may be confused with repair and maintenance to the extent that purchases are for gear maintenance	None	1) broaden to include gear costs from all fisheries (and activities); 2) drop collection
5.1 d	Line and other gear purchases - location	C - Medium	Medium	Used to examine distribution of economic activity	Difficult to track location from companies with multiple locations	None	drop collection

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Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
5.1 e	Bait used - species/pounds by fishery						
5.1 e	Bait used - species/cost by fishery	B - Medium/Low	High/Medium	Used to examine operational and cost structures	May be difficult to separate by fishery and season and identify bait types ; inventories may be carried over to other crab fisheries or non-crab fisheries, but are excluded from collection; disregards bait caught by vessel	None	1) collect single bait purchase for all fisheries 2) clarify instructions 3) drop collection
5.1 e	Bait used - purchase location by fishery	B - Medium	High	Used to examine distribution of economic activity	May be compromised by problems with underlying data	None	drop collection
5.1 f	Fuel used - gallons by fishery						
5.1 f	Fuel used - cost by fishery	C - Medium/Low	High/Medium	Used to examine operational and cost structures	Difficult to separate by fishery, as a substantial number of operations are uncertain of estimates and a variety of methods are used to make estimates; difficult to separate fuel used transiting to Alaska; charges to crew on settlements may not match use by fishery (since transiting is excluded from reporting, but may be charged to crew)	None	1) develop uniform method for estimating use; 2) drop collection
5.1 f	Fuel used - purchase location by fishery	C - Medium/Low	High	Used to examine distribution of economic activity	Fuel is often carried over between fisheries and purchases complicating distribution of use by location of purchase (i.e., need clear methodology for assigning from multiple purchase locations - first in, first out); compromised by underlying data issues	None	drop collection
5.1 g	Food and provisions - costs	Medium	Medium	Used to examine cost structure	Inventories may be carried over from or to groundfish fisheries and year to year; some crews purchase own food; crew deductions are often per day estimates and are not actual cost	None	1) use crew charges; 2) drop collection
5.1 h	Other crew expenses	C - Medium	Medium	Used to examine cost structure; but these often are crew discretionary spending that is not relevant to operations	Open ended element creates uncertainty; amounts often change after preliminary settlements	None	1) develop instructions for specific information desired; 2) drop collection
5.1 i	Freight costs for landed crab	B - Unknown	Unknown	Used to examine costs associated with direct sales	This is a very small portion of sales - element just confuses most, as it is typically not relevant	None	1) clarify instructions; 2) drop collection

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Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
5.1 j	Storage, wharfage, delivery costs for gear	A - Medium/Low	Medium	Used to examine cost structure	May be difficult to separate costs from groundfish fishery and from costs of other boats, if multiple vessel operation (may just be apportioned by number of pots used); typically involves some judgment concerning which costs to include	None	1) develop consistent methodology for apportionment; 2) drop collection
5.1 k	Observer costs - by fishery	A - High/NA	Low/NA		observers cost are incurred only in the golden king crab and blue king crab fisheries		1) clarify instructions; 2) drop collection
5.1 l	Landing taxes and fees	B - Medium	Medium	Used to examine cost structure	Adjustments applied after year end, which may be necessary for both taxes and fees (such as buyback and arbitration assessment)		clarify instructions with respect to arbitration fees
5.1 m	Cooperative fees	A - Medium	Low	Used to examine cost structure	Does not clearly distinguish cooperative cost as a vessel from cooperative cost as a share holder (unclear, if and whether a distinction exists); unclear whether and why other costs are/are not included (i.e., FCMA cooperative negotiation costs seem to be included, but might not include arbitration costs and negotiation costs, if those are conducted independently, also may include research foundation costs)	None	1) clarify instructions; 2) consider collecting cooperative costs from share holders
5.1 n	Other expenses	C - Low	Medium	Used to examine cost structure	Limited direction on elements to include; may omit substantial expenses or include marginally relevant expenses; unclear whether independent arbitration/negotiation costs would be included		1) clarify instruction; 2) drop collection
5.2 a	Vessel and equipment investment - cost	B - Low/Medium	High	Used to examine cost structure	May be difficult to report whether it is a crab only expense; may be somewhat arbitrarily assigned between investment and repair/maintenance; collection excludes costs exclusively for non-crab fisheries (which is inconsistent with other entries in this section); unclear whether new vessel purchase would be included		1) clarify instruction; 2) combine with repair and maintenance costs; 3) drop collection
5.2 a	Vessel and equipment investment - location	C- Low	High	Used to examine distribution of economic activity	Locational information is difficult to separate as vendors have several locations		drop collection

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Appendix 2: Catcher Vessel Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
5.2 b	Repair and maintenance - costs	B - Low/Medium	High	Used to examine cost structure	May be difficult to report whether it is a crab only expense; may be somewhat arbitrarily assigned between investment and repair/maintenance		1) clarify instruction; 2) combine with repair and maintenance costs; 3) drop collection
5.2 b	Repair and maintenance - location	C- Low	High	Used to examine distribution of economic activity	Locational information is difficult to separate as vendors have several locations; often several locations may be involved (up to 50 in one case); collection excludes costs exclusively for non-crab fisheries (which is inconsistent with some other entries in this section)		drop collection
5.2 c	Insurance premium	B - Medium/Low	Medium	Used to examine cost structure	Confusion between two insurance premium requests (see 5.1); may be prorated for crab on an unknown basis		1) clarify instructions; 2) drop collection
5.2 d	Fuel, lubrication, fluids - annual - cost	A - Medium	Medium	Used to examine cost structure	Difficult to separate crab/non-crab costs; purchases may be for fuel used in the following year; location information is thought to be a poor estimation		1) clarify instructions; 2) drop collection
5.2 d	Fuel, lubrication, fluids - annual - location	A - Medium	High	Used to examine distribution of economic activity			
5.2 e	Other vessel specific costs	C - Low/Medium	Medium	Used to examine cost structure	Element is too discretionary to be consistent		1) clarify instructions; 2) drop collection
6 e	Days at sea - all activities	B - Medium	High	Provides estimate of relative share of use of vessel in crab fisheries	By not distinguishing crab related from non-crab related activities other than fishing (such as transiting) this may misrepresent crab related activities; unclear to some whether transiting is included		1) clarify instructions; 2) drop collection
6 e	Gross revenues - all activities	A - High/medium	Medium	Used to examine crab dependence	Some payments are not made until after year's end; will not know source of non-crab revenues (i.e., tendering, chartering, fishing); clarify instructions that revenues from IFQ leases should not be included		1) clarify instructions; 2) drop collection
6 e	Pounds - all activities	A - High/medium	Medium	Used to examine crab dependence	Will not know whether pounds correlate with revenues because of non-fishing activities; unclear whether pounds in non-fishing activities should be included		1) clarify instructions; 2) drop collection

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Appendix 2: **Catcher Vessel Data Assessment**

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
6 e	Labor cost - all activities	High	High	Used to examine crab dependence	May have different pay structures for fishing/tendering/ other activities; provide instruction to include payments in all activities		clarify instructions

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Appendix 2: Shore Plant Vessel Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
1 a-e	Production - dates covered by fishery	A - High	Low	Provides start/stop processing dates for each fishery	Not mutually exclusive across fisheries; any activity in a day counts as a day; cannot estimate ability of plant to participate in other fisheries or scheduled down time	Can be approximated with fish tickets and production reports; may be addressed through emergency exemption reporting requirements	1) clarify instructions to identify days plant is prepared to accept deliveries; 2) drop collection
1 a-e	Production - processing days by fishery	A - High	Low	May allow examination of capacity used			
1 a-e	Raw crab processed by fishery	A - High	Low	Used to examine production levels		fish tickets	drop collection
1 a-e	Product and processed pounds by fishery	B - Medium	Low/Medium	Used to examine production levels	May not match sales; may be inconsistent product types	COAR reports	drop collection
1 a-e	Production - crab size and grade	C - Low	Low	Used to examine production changes	Varies over time and across processors; could distinguish dirty crab from clean		1) develop methodology for consistent reporting; 2) drop collection
1 a-e	Production - box size	A/B - High	Low	Used to examine production changes			drop collection
1 a-e	Production - finished pounds	A/B - High	Low	Used to examine production changes		COAR reports	drop collection
1 a-e	Production - custom processing identifier	A - High	Low	Used to examine production		fish tickets	drop collection
2.1 a-b	Sales to affiliates/non-affiliates by species - product/process	A/B - High	Low/Medium	Used to examine revenue changes			
2.1 a-b	Sales to affiliates/non-affiliates by species - crab size and grade	C - Low	Low	Used to examine revenue changes	Varies over time and across processors		1) revise instructions and submissions to ensure consistency and simplify reporting (e.g., all Alaska fob) 2) drop collection
2.1 a-b	Sales to affiliates/non-affiliates by species - box size and finished pounds	A - High	Low/Medium	Used to examine revenue changes			
2.1 a-b	Sales to affiliates/non-affiliates by species - revenues (fob)	A - High	Low/Medium	Used to examine revenue changes	Allows designation of Seattle or Alaska as fob location creating some inconsistency; instructions include any adjustments prior to submission/leaves out others		
2.2	Custom processing by species/product/process	A - High	Low/Medium		Note - this is redundant with 1 a-e , except for revenues received for processing		incorporate into 1 and make revision to collect only custom processing revenues
2.2	Custom processing revenues	A - High	Low/Medium		Incorporate into 1 a-e to reduce redundancy		
3.1	Average processing positions by fishery	B - Medium/Low	Medium	Used to examine production changes	Most processors do not maintain these data but instead compute it using man-hours; unclear whether this entry contains additional information		1) collect normal line capacities; 2) revise collection from multispecies plants to collect employment and compensation data generally (including plant labor, clerical/administrative staff, and management) 3) drop collection
3.1	Man-hours by fishery	B - Medium	Medium	Used to examine production changes	Most processors maintain some record of these values; often some degree of estimation as employees move among lines and duties		
3.1	Total processing labor payments	B - Medium	Medium	Used to examine cost changes			
3.2	Crab processing employees by residence	C - Low	Low	Used to examine distribution of economic effects	Processors generally have limited records concerning employee residence; typically cannot isolate employees that work in crab fisheries		1) develop standardized method of identifying residence (particularly for Alaskans/locals) 2) drop collection

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Appendix 2: Shore Plant Vessel Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
4 a-e	Custom processing services purchased - raw pounds	B - High	Low				Broaden collection to include persons who purchase crab but do not actively process
4 a-e	Custom processing services purchased - product and process	B - Medium	Low/Medium				
4 a-e	Custom processing services purchased - size and grade	C - Low	Low		Excludes persons who purchase crab but do not actively process		
4 a-e	Custom processing services purchased - box size	A/B - High	Low				Broaden collection to include persons who purchase crab but do not actively process
4 a-e	Custom processing services purchased - finished pounds	A/B - High	Low				
4 a-e	Custom processing services purchased - processing fee	B - High	Low		Some confusion in metadata whether this is full amount paid for product or fee paid to processor of crab		clarify instructions
5 a-e	Raw crab purchases by fishery - ifq type	B - Medium	Low				
5 a-e	Raw crab purchases by fishery - size and grade	C - Low	Medium		Varies over time and across processors		Develop consistent reporting (possibly distinguishing dirty crab from clean crab)
5 a-e	Raw crab purchases by fishery - pounds	B - Medium	Medium				
5 a-e	Raw crab purchases by fishery - gross payments	B - Medium	Medium				
6.1 a	Fisheries taxes and fees - crab only	B - Medium	Medium		Currently excludes taxes and fees of companies that only custom process; some costs may be excluded as they are incurred in one year and paid in the next		
6.1 b	Processing and packing materials, equipment, and supplies - crab only	B - Medium	High		Some costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors; location data are time consuming and have limited accuracy; consider removing equipment costs, as they differ substantially from other information reported here		1) develop consistent means of prorating costs; 2) remove equipment costs; 3) drop collection
6.1 c	Food and provisions - crab only	A - Medium	High		Costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors		1) develop consistent means of prorating costs; 2) drop collection
6.1 d	Other direct crab labor costs	A - Medium	High		Costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors; may be inconsistently reported across processors		1) develop consistent means of prorating costs; 2) consider broader plant labor reporting that does not distinguish crab labor; 3) drop collection

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Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
6.1 e	Insurance deductibles - crab only	C - Medium	Medium		May not be able to distinguish crab costs		drop collection
6.1 f	Repackaging costs	B - Low/Medium	High	Used to examine changes in operations and costs	Does not distinguish by fishery, limiting the utility; by aggregating across fisheries may also lead to a mismatch of production and sales; takes place outside Alaska creating an inconsistency with other reporting; very complicated to track		1) separate by fishery, including greater detail; 2) drop collection
6.1 g	Broker fees and promotions by fishery	B - Medium	Medium		Often costs do not coincide with year of landing; somewhat arbitrary determination of which costs should be reported as most processors have own sales staff		drop collection
6.1 h	Lease (IPQ) costs by fishery				May not be accurately reported in circumstances of revenue sharing arrangements		
6.1 i	Observer costs by fishery	A - Medium	High		No direct observer costs to participating shore plants		drop collection
6.1 j	Freight cost for plant supplies	A - Medium	Medium		Costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors; inconsistently reported, as some processor use company owned vessels for freight		drop collection
6.1 k	Freight costs for products	B - Medium	Medium		Costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors; inconsistently reported, as some processor use company owned vessels for freight; omits storage costs, which may be significant; No reporting from firms that custom processing only		drop collection
6.1 l	Product storage	C - Medium	High		May not be consistently reported as some processors use their own storage facilities; no reporting from firms that custom processing only		drop collection
6.1 m	Water, sewer, and waste disposal	B - Medium/Low	High		Costs are incurred for processing and for housing and are not incurred for a single activity; no consistent method of prorating costs		drop collection
6.1 n	Other crab-specific costs	C - Low	Medium		Element is too discretionary to be consistently reported		1) clarify instructions; 2) drop collection
6.2 a	Annual fuel, electricity, lubrication, hydraulic fluids	A - Medium	Medium		Great degree of discretion in reporting on this variable; may include fuel for housing and also fuel sold to vessels		1) clarify instructions; 2) drop collection

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Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
6.2 b	Plant and equipment investments	B - Medium	Medium		Location information may be misleading; some discretion concerning scope of investments included, as support and housing are both related to plant operations; some discretion concerning choice of investment or repair and maintenance		1) clarify instructions; 2) drop collection
6.2 c	Repair and maintenance	B - Medium	Medium		Location information may be misleading; some discretion concerning scope of investments included, as support and housing are both related to plant operations; some discretion concerning choice of investment or repair and maintenance		1) clarify instructions; 2) drop collection
6.2 d	Foremen, managers, other employees and salaries	B - Medium	Medium		Omits on sight persons overseeing custom processing; if prorated some discretion concerning attribution to crab processing; also omits off site employees needed to support plant		incorporate into broader collection of labor data
6.2 e	Other plant specific costs	C - Medium	Medium		Element is too discretionary to be consistent		drop collection
7	Processing days - annual total - all fisheries	A - Medium	Low		Some days may have minimal processing, while others have extensive processing		
7	Gross FOB revenues - annual total - all fisheries	B - Medium	Low		Revenues are not consistent with processed pounds, as inventories are not included in sales		
7	Finished processed pounds - annual total - all fisheries	B - Medium	Low				
7	Processing labor costs - annual total - all fisheries	A - Medium	Low		Some audit issue; number/scope of plant management varies by company		

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Appendix 2: Floating Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
1 a-e	Production - dates covered by fishery	A - High	Low	Provides start/stop processing dates for each fishery	Not mutually exclusive across fisheries; any activity in a day counts as a day; cannot estimate ability of processor to deploy crews in other fisheries or scheduled down time	Can be approximated with fish tickets and production reports	1) clarify instructions; 2) drop collection
1 a-e	Production - processing days by fishery	A - High	Low	May allow examination of capacity used			
1 a-e	Raw crab processed by fishery	A - High	Low	Used to examine production levels		fish tickets	
1 a-e	Product and processed pounds by fishery	B - Medium	Low/Medium	Used to examine production levels	May not match sales	COAR reports	drop collection
1 a-e	Production - crab size and grade	C - Low	Low	Used to examine production changes	Varies over time and across processors		1) develop methodology for consistent reporting; 2) drop collection
1 a-e	Production - box size	A/B - High	Low	Used to examine production changes			
1 a-e	Production - finished pounds	A/B - High	Low	Used to examine production changes			
1 a-e	Production - custom processing identifier	A - High	Low	Used to examine production			
2.1 a-b	Sales to affiliates/non-affiliates by species - product/process	A/B - High	Low/Medium	Used to examine revenue changes			
2.1 a-b	Sales to affiliates/non-affiliates by species - crab size and grade	C - Low	Low	Used to examine revenue changes	Varies over time and across processors		1) revise instructions and submissions to ensure consistency and simplify reporting (e.g., all Alaska fob) 2) drop collection
2.1 a-b	Sales to affiliates/non-affiliates by species - box size and finished pounds	A - High	Low/Medium	Used to examine revenue changes			
2.1 a-b	Sales to affiliates/non-affiliates by species - revenues (fob)	A - High	Low/Medium	Used to examine revenue changes	Designation of Seattle/Alaska as fob location; Instructions include any adjustments prior to submission/leaves out others		
2.2	Custom processing by species/product/process	A - High	Low/Medium		Note - this is redundant with 1 a-e, except for revenues received for processing		drop element here and include revenues in 1 a-e
2.2	Custom processing revenues	A - High	Low/Medium		Incorporate into 1 a-e to reduce redundancy		Retain, but incorporate into 1 a-e
3.1	Average processing positions by fishery	B - Medium/Low	Medium	Used to examine production changes	Most processors do not maintain these data but instead compute it using man-hours; unclear whether this entry represents contains additional information		1) collect normal line capacities; 2) drop collection
3.1	Man-hours by fishery	B - Medium	Medium	Used to examine production changes	Most processors maintain some record of these values; often some degree of estimation as employees move among lines and duties		develop consistent method for estimation
3.1	Total processing labor payments	B - Medium	Medium	Used to examine cost changes	Most processors maintain some record of these values; often some degree of estimation as employees move among lines and duties		develop consistent method for estimation

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Appendix 2: Floating Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
3.2	Crab processing employees by residence	C - Low	Low	Used to examine distribution of economic effects	Processors generally have limited records concerning employee residence; typically cannot isolate employees that work in crab fisheries		clarify method of identifying workers covered by collection; drop collection
4 a-e	Custom processing services purchased - raw pounds	B - High	Low				
4 a-e	Custom processing services purchased - product and process	B - Medium	Low/Medium		Excludes firms that exclusively contract for custom processing; size and grade are inconsistent across processors		Expand collection to include firms that exclusive contract for custom processing; Modify other elements consistent with table 1 above
4 a-e	Custom processing services purchased - size and grade	C - Low	Low				
4 a-e	Custom processing services purchased - box size	A/B - High	Low				
4 a-e	Custom processing services purchased - finished pounds	A/B - High	Low				
4 a-e	Custom processing services purchased - processing fee	B - High	Low		Some confusion in metadata whether this is full amount paid for product or fee paid to processor of crab		Clarify instructions
5 a-e	Raw crab purchases by fishery - ifq type	B - Medium	Low				
5 a-e	Raw crab purchases by fishery - size and grade	C - Low	Medium		Varies over time and across processors		
5 a-e	Raw crab purchases by fishery - pounds	B - Medium	Medium				
5 a-e	Raw crab purchases by fishery - gross payments	B - Medium	Medium				
6.1 a	Fisheries taxes and fees - crab only	B - Medium	Medium		Currently excludes taxes and fees of companies that only custom process; some costs may be excluded as they are incurred in one year and paid in the next		
6.1 b	Processing and packing materials, equipment, and supplies and location of purchase - crab only	B - Medium	High		Some costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors; location data are time consuming and have limited accuracy		1) develop consistent means of prorating costs; 2) drop collection
6.1 c	Food and provisions - crab only	A - Medium	High		Costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors		1) develop consistent means of prorating costs; 2) drop collection
6.1 d	Other direct crab labor costs	A - Medium	High		Costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors		1) develop consistent means of prorating costs; 2) drop collection
6.1 e	Insurance deductibles - crab only	C - Medium	Medium				
6.1 f	Repackaging costs	B - Medium	Medium	Used to examine changes in operations and costs	Does not distinguish by fishery, limiting the utility		1) separate by fishery; 2) drop collection
6.1 g	Broker fees and promotions by fishery	B - Medium	Medium		Often costs do not coincide with year of landing		

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Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
6.1 h	Lease (IPQ) costs by fishery				May not be accurately reported in circumstances of revenue sharing arrangements		
6.1 i	Observer costs by fishery	A - Medium	High				
6.1 j	Freight cost for plant supplies	A - Medium	Medium		Costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors; inconsistently reported, as some processor use company owned vessels for freight		
6.1 k	Freight costs for products	B - Medium	Medium		Costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors; inconsistently reported, as some processor use company owned vessels for freight; omits storage costs, which may be significant; No reporting from firms that custom processing only		
6.1 l	Product storage	C - Medium	High		May not be consistently reported as some processors use their own storage facilities; no reporting from firms that custom processing only		
6.1 m	Water, sewer, and waste disposal	B - Medium/Low	High		Costs are incurred for processing and for housing and are not incurred for a single activity; no consistent method of prorating costs		1) develop consistent method of prorating costs; 2) drop collection
6.1 n	Other crab-specific costs	C - Low	Medium		Element is too discretionary to be consistent		1) clarify instructions; 2) drop collection
6.2 a	Annual fuel, electricity, lubrication, hydraulic fluids	A - Medium	Medium		Some degree of discretion in this variable		1) clarify instructions; 2) drop collection
6.2 b	Vessel and equipment investments	B - Medium	Medium		Location information may be misleading; some discretion concerning scope of investments included, as support and housing are both related to plant operations; some discretion concerning choice of investment or repair and maintenance		
6.2 c	Repair and maintenance	B - Medium	Medium		Location information may be misleading; some discretion concerning scope of investments included, as support and housing are both related to plant operations; some discretion concerning choice of investment or repair and maintenance		

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Appendix 2: Floating Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
6.2 d	Foremen, managers, other employees and salaries	B - Medium	Medium		Omits on sight persons overseeing custom processing; if prorated some discretion concerning attribution to crab processing; unclear whether this includes employees that are not on vessel		
6.2 e	Other vessel specific costs	C - Medium	Medium		Element is too discretionary to be consistent		
7	Processing days - annual total - all fisheries	A - Medium	Low		Some days may have minimal processing, while others have extensive processing		
7	Gross FOB revenues - annual total - all fisheries	B - Medium	Low		Revenues are not consistent with processed pounds, as inventories are not included in sales		
7	Finished processed pounds - annual total - all fisheries	B - Medium	Low				
7	Processing labor costs - annual total - all fisheries	A - Medium	Low		Some audit issue; number/scope of plant management varies by company		

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Appendix 2: Catcher Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
1.1	Dates covered by fishery	A - High	Low	Provides start/stop dates for participation in each fishery	Unclear what this data item is intended to measure		drop collection
1.1	Days fishing - by fishery	B - Medium	Medium	Useful for analyzing operational and efficiency changes; unclear the extent of any improvement on existing fish ticket data	May lose some accuracy without partial days; includes days transiting on grounds (which is operationally different from fishing)		
1.1	Days traveling and offloading - by fishery	B - Medium	Medium	Used for analyzing operational and efficiency changes; unclear the extent of any improvement on existing fish ticket data	No distinction between traveling and offloading time, which are operationally different; reports may or may not include time transiting between ports; may need to know base port to assess meaning of the data (e.g., King Cove, Kodiak, Dutch Harbor); unclear whether offloading time in Seattle should be included (if so, why not include transiting)	1) fish tickets - days fishing as defined by date gear was first deployed and date of landing 2) logbooks, which collect	1) separate traveling and offloading; 2) drop collection
1.1	Production - processing days - by fishery	A - High	Low	May allow examination of capacity used	In most reports, any activity in a day counts as a day (may be some inconsistency across respondents)		
2	Landings by share type - pounds	B - High	Medium	Useful for determining distribution of catch by share type	None	These data are redundant with IFQ data	1) Revise to ensure accuracy, may require some accommodation, if price distinctions are not clear; 2) drop collection
2	Deadloss by share type - pounds	B - High	Medium	Useful for determining distribution of catch by share type	None		
1.2 a-e	Raw crab processed by fishery	A - High	Low	Used to examine production levels	Should be noted that deadloss is not accounted for here	fish tickets	
1.2 a-e	Product and processed pounds by fishery	B - Medium	Low/Medium	Used to examine production levels	May not match sales	COAR reports	drop collection
1.2 a-e	Production - crab size and grade	C - Low	Low	Used to examine production changes	Varies over time and across processors		1) develop methodology for consistent reporting; 2) drop collection

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Appendix 2: Catcher Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
1.2 a-e	Production - box size	A/B - High	Low	Used to examine production changes			
1.2 a-e	Production - finished pounds	A/B - High	Low	Used to examine production changes			
1.2 a-e	Production - custom processing identifier	A - High	Low	Used to examine production	For all custom processing, it is unclear whether fishing and processing should be counted or only processing for another (costs and revenues from these activities will differ)		Custom processing should be defined for catcher processors
2.1 a-b	Sales to affiliates/non-affiliates by species - product/process	A/B - High	Low/Medium	Used to examine revenue changes			
2.1 a-b	Sales to affiliates/non-affiliates by species - crab size and grade	C - Low	Low	Used to examine revenue changes	Varies over time and across processors		
2.1 a-b	Sales to affiliates/non-affiliates by species - box size and finished pounds	A - High	Low/Medium	Used to examine revenue changes			
2.1 a-b	Sales to affiliates/non-affiliates by species - revenues (fob)	A - High	Low/Medium	Used to examine revenue changes	Designation of Seattle/Alaska as fob location; Instructions include any adjustments prior to submission/leaves out others		
2.2	Custom processing by species/product/process	A - High	Low/Medium				
					Note - this is redundant with 1.2 a-e , except for revenues received for processing		drop element here and include revenues in 1 a-e
2.2	Custom processing revenues	A - High	Low/Medium				

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Appendix 2: Catcher Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
3.1	Vessel owner's IFQ used on the vessel by share type	C - Medium/Low	High - requires extensive spreadsheets	Used to show the distribution of activity and revenues in the fishery	Ignores pooling of quota by cooperatives - data may not reflect fishery operation; cannot be consistent, as vessel owner is not defined; does not allow for entry of owner held C shares; although we include provisions for harvest of catcher vessel IFQ here, we don't collect revenues from those harvests	None	1) Revise section on quota fishing/leasing - incorporate definitions of leasing and ownership; 2) supplement with data collection from inactive share holders; 3) add line for C shares; 4) collect revenues from harvests of catcher vessel quota (using a supplemental form); 5) drop collection
3.1	Vessel owner's IFQ used on other vessels by share type						
3.2	Leased quota by share type - pounds	C - Medium/Low	Medium	Used to show the distribution of activity and revenues in the fishery	May not be accurately reported due to complex ownership structures; cannot be consistent, as lease is not defined; does not allow for entry of owner held C shares; although we include provisions for harvest of catcher vessel IFQ here, we don't collect revenues from those harvests		
3.2	Leased quota by share type - cost						
3.2	Lease quota by share type - crew contributing shares	C - Medium/Low	Medium	Used to show the number of crew on a vessel using shares on the vessel	May not accurately reflect cooperative structure and share pooling, cannot be interpreted as active share holders	May be redundant with active participation reporting	1) revise collection to count/identify crew with share holdings; 2) drop collection
4.1	Payments to captain	A - Medium	Medium/High	Used to examine payments to labor	Some uncertainty over non-crab fishery payments; some uncertainty of compensation, if crew pay certain expenses; captains payments may be non-market, when the captain also owns the vessel; some crew work in processing and harvesting; engineers do not fit in either category	None	clarify reporting requirement and instructions; determine appropriate crew classifications or collect an aggregate of harvesting and processing crew payments; ; clarify that amount reported is after all crab fishing related deductions and charges (excluding personal spending)
4.1	Payments to harvest crew	A - Low					
4.2	Crew paid based on processing work	B - Low	Medium/High	Used to examine production changes	Some uncertainty over non-crab fishery payments; some uncertainty of compensation, if crew pay certain expenses; captains payments may be non-market, when the captain also owns the vessel; some crew work in processing and harvesting; engineers do not fit in either category		1) collect normal line capacities; 2) collect an aggregate harvesting and processing crew number; 3) drop collection
4.2	Average processing positions by fishery	B - Low					

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Appendix 2: Catcher Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
4.2	Total processing labor payments	B - Low		Used to examine cost changes	Most catcher processors maintain some record of these values; often some degree of estimation as employees move among lines and duties		clarify reporting requirement and instructions; determine appropriate crew classifications or collect an aggregate of harvesting and processing crew payments
4.3	Labor payment details - charges and deductions	A - High/Medium	Low	Used to examine changes in labor payment structures	Details for charges and deductions are not provided (i.e., amount charged/deducted); no provision for identifying if crew are not subject to share system	None	expand to include deduction amounts and clarify instructions, if captain is owner; include option for payment on system other than share system
4.4	Crew license number/CFEC permit number	A - Medium	Low/Medium	Used for analyzing distribution of crew and identifying unique crew	Crew license residence data may be unreliable; includes no demographic data; cannot necessarily be used to estimate distribution of benefits by location, since we don't know how much any crewmember was paid or how much any crewmember worked	None	Collect crew residence/demographic information; supplement with crew member trips and/or payments
4.5	Crab processing employees by residence	C - Low	Low	Used to examine distribution of economic effects	catcher processors generally have limited records concerning employee residence; typically cannot isolate employees that work in crab fisheries		
5 a-e	Custom processing services purchased - raw pounds	B - High	Low				
5 a-e	Custom processing services purchased - product and process	B - Medium	Low/Medium				
5 a-e	Custom processing services purchased - size and grade	C - Low	Low				
5 a-e	Custom processing services purchased - box size	A/B - High	Low				
5 a-e	Custom processing services purchased - finished pounds	A/B - High	Low				
5 a-e	Custom processing services purchased - processing fee	B - High	Low				

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Appendix 2: Catcher Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
6 a-e	Raw crab purchases by fishery	B - Medium	Low		To date, catcher processors report that these are inapplicable to their operations (accuracy and cost levels are from shore plant and floating processor reports); note that collection omits share type since catcher processors cannot accept B share deliveries in a fishery that it operated as a catcher processor; but, catcher processors can accept C share deliveries in any fishery and B share deliveries in fisheries that it does not operate as a catcher processor		Clarify reporting requirements; add share type designations; drop collection
6 a-e	Raw crab purchases by fishery - size and grade	C - Low	Medium				
6 a-e	Raw crab purchases by fishery - pounds	B - Medium	Medium				
6 a-e	Raw crab purchases by fishery - gross payments	B - Medium	Medium				
7.1 a	Insurance premium - crab only	C - Low	Medium	Used for examining changes in cost structure	Variety of insurance contracts complicates any interpretation; usually prorated by the submitter to separate crab/non-crab - proration is somewhat arbitrary and may differ across submitters - is often confused with 7.2 c; consider inclusion of cargo insurance against loss of crab separately	None	1) collect total premium amount (including all activities); 2) include cargo insurance collection separately; 3) drop collection
7.1 b	Paid deductibles - crab only	C - Low	Medium	Used to examine changes in cost structure	Payments are often spread over several fiscal years - or are not incurred in year of incident; may overlap with repair and maintenance	None	1) Revise to ensure no overlap with repair and maintenance; 2) drop collection
7.1 c	Pot purchases - number	C - Medium/Low	Medium	Used to examine operational and cost structures	No distinction between new and used gear; for used gear may be difficult to get accurate count (as damaged gear may/may not be counted); may be difficult to separate crab costs from other fisheries; will not reflect actual operations; costs may or may not include refurbishment costs; omits exchanges and pooling of pots that is currently occurring	Substantial data are currently collected through log books and pot registration to show the number of pots used and effort levels in the fishery; no cost information is collected	1) revise collection to more accurately record pot purchases by including detail on pot conditions and improved price information; 2) drop collection
7.1 c	Pot purchases - cost						

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Appendix 2: Catcher Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
7.1 c	Pot purchases - location	C - Medium/Low	Medium	Used to examine distribution of economic activity	Difficult to track location from companies with multiple locations or purchases of pots from storage; economic effect of pots purchased from storage is very different from pots purchased new; value of data is compromised by its dependence on the pot number and cost information	None	drop collection
7.1 d	Line and other gear purchases - costs	C - Medium	Medium	Used to examine operational and cost structures	Typically cannot separate out crab costs	None	1) broaden to include gear costs from all fisheries (and activities); 2) drop collection
7.1 d	Line and other gear purchases - location	C - Medium	Medium	Used to examine distribution of economic activity	Difficult to track location from companies with multiple locations	None	drop collection
7.1 e	Bait used - species/pounds by fishery	B - Medium/Low	High/Medium	Used to examine operational and cost structures	May be difficult to separate by fishery and season year; inventories may carried over to non-crab fisheries; disregards bait caught by vessel; data are typically estimated	None	1) use bait charges to crew only; 2) drop collection
7.1 e	Bait used - species/cost by fishery						
7.1 e	Bait used - location by fishery	B - Medium	High/Medium	Used to examine distribution of economic activity	May be compromised by problems with underlying data	None	drop collection
7.1 f	Fuel used - gallons by fishery	C - Medium/Low	High/Medium	Used to examine operational and cost structures	Difficult to separate by fishery, as a substantial number of operations are uncertain of estimates and a variety of methods are used to make estimates; difficult to separate fuel used transiting to Alaska; charges to crew on settlements may not match use by fishery (since transiting is excluded)	None	1) use fuel charged to crew; 2) develop uniform method for estimating use; 3) drop collection
7.1 f	Fuel used - cost by fishery						
7.1 f	Fuel used - location by fishery	C - Medium/Low	Medium	Used to examine distribution of economic activity	Fuel is often carried over between fisheries and purchases complicating distribution of use by location of purchase (i.e., need clear methodology for assigning from multiple purchase locations - first in, first out); compromised by underlying data issues	None	1) develop rule for apportioning among locations; 2) drop collection

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Appendix 2: Catcher Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
7.1 g	Food and provisions - costs	Medium	Medium	Used to examine cost structure	Inventories may be carried over from or to groundfish fisheries and year to year; some crews purchase own food; crew deductions are not applicable, as catcher processors will have crew that do not have deduction	None	drop collection
7.1 h	Other crew expenses	C - Medium	Medium	Used to examine cost structure; but these often are crew discretionary spending that is not relevant to operations	Open ended element creates uncertainty; amounts often change after preliminary settlements	None	1) develop instructions for specific information desired; 2) drop collection
7.1 i	Processing and packing materials, equipment, and supplies and location of purchase - crab only	B - Medium	High		Some costs are prorated across crab and non-crab fisheries; no consistent method of prorating costs across processors; location data are time consuming and have limited accuracy		1) develop consistent means of prorating costs; 2) drop collection
7.1 j	Repackaging costs	B - Medium	Medium	Used to examine changes in operations and costs	Does not distinguish by fishery, limiting the utility		1) separate by fishery; 2) drop collection
7.1 k	Broker fees and promotions by fishery	B - Medium	Medium		Often costs do not coincide with year of landing		
7.1 l	Landing taxes and fees	B - Medium	Medium	Used to examine cost structure	Adjustments applied after year end, which may be necessary for both taxes and fees (such as buyback and arbitration assessment)		clarify instructions with respect to arbitration fees
7.1 m	Storage, wharfage, delivery costs for gear	A - Medium	Medium	Used to examine cost structure	May be difficult to separate costs from groundfish fishery (may just be apportioned by number of pots used)	None	1) develop consistent methodology for apportionment; 2) drop collection
7.1 n	Observer costs - by fishery	A - High/NA	Low/NA		Observer costs paid for by vessels in all fisheries		1) clarify instructions; 2) drop collection

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Appendix 2: Catcher Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
7.1 o	Freight costs for products	B - Medium	Medium				
7.1 p	Product storage	C - Medium	High				
7.1 q	Cooperative fees	A - Medium	Low	Used to examine cost structure	Does not clearly distinguish cooperative cost as a vessel from cooperative cost as a share holder (unclear, if and whether a distinction exists); unclear whether and why other costs are/are not included (i.e., FCMA cooperative negotiation costs seem to be included, but might not include arbitration costs and negotiation costs, if those are conducted independently)	None	1) clarify instructions; 2) consider collecting cooperative costs from share holders
7.2 b	Repair and maintenance - costs	B - Low/Medium	High	Used to examine cost structure	May be difficult to report whether it is a crab only expense; may be somewhat arbitrarily assigned between investment and repair/maintenance		1) clarify instructions; 2) drop collection
7.2 b	Repair and maintenance - location	C - Low	High	Used to examine distribution of economic activity	Locational information is difficult to separate as vendors have several locations; often several locations may be involved (up to 50 in one case)		drop collection
7.2 c	Foremen, managers, other employees and salaries	B - Medium	Medium		Omits on sight persons overseeing custom processing; if prorated some discretion concerning attribution to crab processing; unclear whether this includes employees that are not on vessel		
7.2 d	Insurance premium	B - Medium/Low	Medium	Used to examine cost structure	Confusion between two insurance premium requests (see 5.1); may be prorated for crab on an unknown basis		1) clarify instructions; 2) drop collection
7.2 d	Fuel, lubrication, fluids - annual cost	A - Medium	Medium	Used to examine cost structure	Difficult to separate crab/non-crab costs; purchases may be for fuel used in the following year		1) clarify instructions; 2) drop collection
7.2 e	Fuel, lubrication, fluids - annual - location	A - Medium	Medium	Used to examine distribution of economic activity	Difficult to separate costs by location and identify non-crab portion		1) clarify instructions; 2) drop collection
7.2 f	Other vessel specific costs	C - Low/Medium	Medium	Used to examine cost structure	Element is too discretionary to be consistent		1) clarify instructions; 2) drop collection

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Appendix 2: Catcher Processor Data Assessment

Table number	Data element	Accuracy*	Cost of collection	Utility	Possible shortcomings	Substitute sources	Alternatives
8	Processing days - annual total - all fisheries	A - Medium	Low		Some days may have minimal processing, while others have extensive processing		
8	Days at sea - all activities	B - Medium	Medium	Provides estimate of relative share of use of vessel in crab fisheries	By not distinguishing crab related activities other than fishing (such as transiting) this may misrepresent crab related activities; unclear to some whether transiting is included		1) clarify instructions; 2) drop collection
8	Gross FOB revenues - all activities	A - High	Medium	Used to examine crab dependence	Some payments are not made until after year's end; will not know source of non-crab revenues (i.e., tendering, chartering, fishing)		clarify instructions
8	Finished pounds - all activities	A - High	Medium	Used to examine crab dependence	Will not know whether pounds correlate with revenues because of non-fishing activities		clarify instructions
8	Raw pounds - all activities	A - High	Medium	Used to examine crab dependence	Will not know whether pounds correlate with revenues because of non-fishing activities		clarify instructions
8	Labor cost - all activities	High	High	Used to examine crab dependence	May have different pay structures for fishing/tendering/other activities		clarify instructions

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