

MEETING ATTENDEE SIGN-IN SHEET
March-April, 2012 N.P.F.M.C. MEETING

PLEASE REGISTER ATTENDANCE FOR MEETING RECORDS

PLEASE PRINT - THANK YOU!

NAME	AFFILIATION
TIM SMITH	NORTON SOUND / BERING STRAIT REGIONAL AQUACULTURE ASSOCIATION
Michael LAKE	Alaskan Observers, Inc.
Frank [unclear]	City of UMA Alaska
Heather McCarty	McCarty Assoc., Juneau
Cami Johnson	Alaska Crab Coalition / UFA
Jack Hill	FV RUFF & REDDY
Jon Warenduk	Oceana
Jim Carroll	SALTWATER INC.
Mike Szymanski	Fishermen's Finest Inc
Kris Norosz	Iceberg Seafoods, Inc
PAUL MacGREGOR	AT-SEA PROCESSORS ASSN.
GUYMON READ	PSPA
BRENT PAINE	UCB
DAN Harrelson	NSEDC - Community of White Mountain
Simon Swartz Jr	City of ST. PAUL
Elizabeth Wiley	WESTWARD
Dick Tremaine	Sig Alaska
Jeff Stephan	UFMA Kodiak

MARCH 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6 AVCP State of the Salmon thru 3/7 Bethel	7	8	9	10
11	12	13	14	15	16	17
18	19 Joint Protocol Committee - Anch	20 BOF mtg thru 4/24 - Anch Yukon River Panel through 3/22	21 Federal Subsistence Board thru 23 - Juneau	22	23	24
25	26 SSC/AP - IFQ Implementation Team - Anch	27 SSC/AP Enforcement, Ecosystem Comm., Charter Mgmt Implementation	28 SSC/AP Council	29 AP/Council PSEIS Stakeholder Session - Anch	30 AP/Council	31 Council

APRIL 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Council	2 Council	3 Council	4 Crab/Groundfish PT Stock Recruitment workshop thru 5 - AFSC	5	6	7
8	9	10 NPRB thru 4/12 - Monterey, CA	11	12 ComFish thru 4/14 - Kodiak	13	14
15	16	17	18 AKFin Steering Committee - Juneau	19	20	21
22	23	24 IPHC/NPFMC Halibut Workshop thru 25 - Seattle	25	26	27	28
29	30					

MAY 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Joint Groundfish PT P Cod model mtg Council Chairs annual mtg thru 4/5 - Hawaii	2	3	4	5
6	7 Crab Plan Team thru 5/11 - Anch	8 Fisheries Forum thru 10 - Beaufort, NC	9	10	11	12 PICES thru 5/14 - Yesea, Korea
13	14	15 Regulatory training thru 17 - Juneau	16	17	18	19
20	21	22	23	24	25	26
27	28 HOLIDAY	29	30	31		

JUNE 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4 AP/SSC - Kodiak	5 AP/SSC	6 AP/SSC/ Council	7 AP/Council	8 AP/Council	9 Council
10 Council	11 Council	12 Council	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4 HOLIDAY	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19 AFS thru 23 - Minneapolis	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3 HOLIDAY	4	5	6	7	8
9	10	11 GF PT thru 14 - AFSC	12	13	14	15
16	17 Crab PT thru 21 - Seattle	18	19	20	21	22
23/30	24	25	26	27	28	29

OCTOBER 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 SSC/AP - Hilton	2 SSC/AP	3 SSC/AP/Council	4 AP/Council	5 AP/Council	6 Council
7 Council	8 Council HOLIDAY	9 Council	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

North Pacific Fishery Management Council

Eric A. Olson, Chairman
Chris Oliver, Executive Director



605 W. 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Telephone (907) 271-2809

Fax (907) 271-2817

Visit our website: <http://www.alaskafisheries.noaa.gov/npfmc>

Certified: Sam Benke
Date: 3/21/12

SCIENTIFIC AND STATISTICAL COMMITTEE
to the
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
January 30th – February 1st, 2012

The SSC met from January 30th through February 1st, 2012 at the Renaissance Hotel, Seattle WA.

Members present were:

Pat Livingston, Chair
NOAA Fisheries—AFSC

Farron Wallace, Vice Chair
Wash. Dept. of Fish and Wildlife

Robert Clark
Alaska Department of Fish and Game

Alison Dauble
Oregon Dept. of Fish and Wildlife

Anne Hollowed
NOAA Fisheries—AFSC

George Hunt
University of Washington

Gordon Kruse
University of Alaska Fairbanks

Kathy Kuletz
US Fish and Wildlife Service

Seth Macinko
University of Rhode Island

Lew Queirolo
NOAA Fisheries—Alaska Region

Terry Quinn
University of Alaska Fairbanks

Kate Reedy-Maschner
Idaho State University Pocatello

Ray Webster
International Pacific Halibut Commission

Members absent were:

Jennifer Burns
University of Alaska Fairbanks

Jim Murphy
University of Alaska Anchorage

Franz Mueter
University of Alaska Fairbanks

SSC Nominations

The SSC reappointed Pat Livingston as chair and Farron Wallace as vice chair. The SSC also wants to express how much it values the stock assessment expertise and institutional memory of Farron Wallace on the SSC. This type of expertise is important and needed and it is our hope that Farron can be retained on the SSC once he assumes his new position in the NMFS Observer Program.

B-1 Plan Team nominations

The SSC reviewed the nomination of Dr. Jason Gasper to the Crab Plan Team, replacing Gretchen Harrington who is moving on to another position. Jason's experience with stock assessment and management will be a good contribution to the CPT. The SSC recommends that the Council approve his nomination.

C-2 Initial review Halibut PSC Limits

The SSC received a presentation of the initial review draft of an EA/RIR/IRFA to revise the Pacific halibut PSC from Jane DiCosimo (NPFMC), Darrell Brannan, and Mike Downs (consultants). Public testimony was provided by Julie Bonney (Alaska Groundfish Data Bank) and Jon Warrenchuk (Oceana).

The current revision of the draft analysis addresses the vast majority of the SSC concerns expressed after our previous initial review of this proposed action package. The analysts have confronted a complex body of information and statistical data pertaining to this action. The SSC appreciates the excellent progress demonstrated since our last review, especially the attention given to our earlier questions and suggestions. The SSC also extends its appreciation for the concerted effort made by the analysts/authors to use accurate and consistent terminology throughout the narrative.

Although the draft is a substantial improvement over the earlier version, the SSC suggests additional attention to several elements of the descriptive narrative. The SSC previously commented on the confounding of "personal-use" and "subsistence-use" aspects of Pacific halibut removals. This distinction has important legal, management, social, and cultural implications. We acknowledge the authors' efforts to improve the treatment, particularly in the Community Impact appendix. The SSC suggests comparable treatment in the RIR.

A related matter concerns whether the analysis tracks impacts of changes in halibut PSC mortality on all prospectively impacted users (see p. xxiii). There appears to be a too-narrow characterization of impact distribution. For example, changes in halibut biomass resulting from reductions in PSC removals may influence subsistence user costs and success, benefits accruing to personal use fishermen, etc.

Another consideration the authors of the analysis may wish to revisit is the occasional imprecise substitution of the terms "halibut mortality rate" and "halibut PSC rate". The two can be quite different, owing to the assumption of <100% handling mortality. It is not always clear from the context which measure is being referenced (e.g., the wrong term appears to have been used at p. xix).

The SSC suggests that it may be time to formally reassess what constitutes "confidential" information under Council protocol. As both Federal and State of Alaska statutes contain mandatory criteria for judging whether information is or is not governed by "confidentiality" rules, there should not be substantial uncertainty. Yet there appears to be varied definitions employed in the document. This is endemic to many of the analyses coming before the SSC and Council. In most instances, Council and Agency staff go to extremes to err on the side of nondisclosure. But, unless these legal thresholds are at risk of being infringed, withholding relevant information or declining to use data (see p. xxi), by asserting confidentiality, does not serve science or the public interest. It seems prudent to obtain definitive, unambiguous, and officially sanctioned direction on this topic, to inform Council, SSC, NOAA, and State of Alaska personnel subject to these data protection protocols. The SSC recommends that the Council seek legal guidance from NOAA General Counsel and the State of Alaska as to the finer points of interpreting and applying the confidentiality protocols, as they apply to the Council's management process. Possibly, the legal guidance is clear but there are inconsistencies in the application of the rules. A restatement of the rules may be sufficient.

Regarding sections on protected species in the EA (i.e., Seabirds; 3.5), the SSC recommends background information be updated and made more specific to this particular document. Likewise, broad generalizations about the lack of impact of fisheries on seabirds (3.5.2.4.2) are not substantiated with citations and are probably not supportable. The SSC will provide the analysts with specific editorial recommendations for their consideration and treatment, as time allows.

Appendix 7 includes new fieldwork in Kodiak, the results of which better describe the significance of this action for this community. The methodology describing the nature of this fieldwork is needed. The

document could also benefit from a broader description of the potential impacts on the resident processing labor force, since public testimony indicated that the action could affect retention of labor and change the community structure. The document could also better reflect the potential consequences of switching to pelagic trawl gear, which could put vessels at higher risk of increased Chinook salmon PSC. Tables 3a and 4a on pages 10-11 may contain errors in the ex-vessel gross values and need to be reviewed. The SSC recommends that the document be released for public review, incorporating the suggested edits to the extent practicable.

C-3(a) Pribilof Island blue king crab rebuilding analyses

The SSC received a presentation from Diana Stram (NPFMC) that reviewed survey distribution of Pribilof Islands blue king crab (PIBKC) and fishery catch in relation to State and Federal regulatory areas and alternative closure configurations. Public testimony was given by John Gauvin (Alaska Seafood Cooperative), Donna Parker (Arctic Storm) and Arni Thomson (Alaska Crab Coalition).

During the October 2011 meeting, the Council requested staff to provide additional information on a number of discussion items associated with the PIBKC rebuilding plan. The SSC was specifically asked to consider information in relation to area stock boundaries used to define the spatial area over which the PIBKC OFL is currently applied and the associated bycatch or PSC accrual over alternative areas. These issues have major implications in rebuilding analyses and the development of alternatives for the PIBKC rebuilding plan. Available information suggested that the current area may not adequately cover the spatial extent of the stock, as indicated by survey and PSC. Given the limited time for review, questions about the information presented, and the lack of review and input by the CPT, the SSC is not able to recommend changes to the currently defined spatial extent over which the PIBKC OFL is currently applied. The SSC requests the CPT to conduct a detailed review of current spatial information, additional information requested by the SSC below, and comment on the most appropriate spatial extent to accumulate catch for computing OFL.

The SSC requests the analysts provide additional information on:

- Sex and season of PIBKC survey catch and PSC in groundfish fisheries
- Numbers of crab actually observed and extrapolated numbers to total estimates
- Size composition of survey catch and PSC in groundfish fisheries
- Potential influence of the cold pool on survey catch distribution

The SSC requests this information to help judge the veracity of purported BKC PSC observations, particularly in areas 509 and 516, the possibility of seasonal movements that may reconcile divergent BKC distribution from survey (summer) and groundfish fishery PSC (winter?) observations, and current understanding of BKC life history and distribution.

C-3(b) Crab model workshop report

Tanner Crab Model

A report on the Tanner crab portion of the NPFMC Crab Modeling Workshop was presented by Diana Stram (NPFMC), Jim Ianelli (NMFS-AFSC), Lou Rugolo (NMFS-AFSC) and Jack Turnock (NMFS-AFSC). As with GKC, the crab modeling workshop provided an excellent opportunity for a detailed examination of the Tanner crab model. Workshop participants identified and recommended a number of issues for resolution before the model can be accepted for fishery management. A few of the major issues that were addressed during the workshop included:

1. Large variability in survey catchability among time periods. The analysts provided a list of factors that changed over time, but workshop participants felt that these factors were insufficient to explain such large changes. While participants encouraged further analysis of survey data in attempts to reconcile the differences, most discussion focused on modeling alternatives that might

better explain the data. This led to two sets of model runs: (1) "Hide'em" scenarios in which the low survey estimates over 1982 through 1987 were due to unavailability of crabs to the survey gear for some unknown reason, and (2) "Kill'em" scenarios in which these low estimates were due to heightened but unobserved crab mortality. Both scenarios mimic the data better than the previous base model that included seemingly unrealistic changes in survey catchability.

2. There appears to be a data conflict between the length frequency of the Tanner crab bycatch in the red king crab fishery and other data. The fit to survey data improved when the bycatch length-frequency data were down-weighted.
3. Input sample size specifications appear to play a role in model results. Assumptions about sample size were particularly consequential in fisheries with Tanner crab bycatch or PSC for which few animals were measured for size. Workshop participants recommended that sample sizes should be specified by year. An analysis of the spatial coverage of size frequency data may help.
4. A number of model coding issues were identified by the workshop chair after the conclusion of the workshop. These issues included non-differentiability of the double-logistic discard selectivity curve, need for greater clarity on the many components included in the objective function, and complexity of coding that require recompiling the model each time new model scenarios are run. Conversion to a more general model code using switches in input control files would be beneficial. A similar recommendation to use such a general model coding was made for the Aleutian Islands golden king crab assessment.
5. Other post-workshop advice from the workshop chair includes a general desire to simplify the estimation of parameters, such as maturity, growth, and natural mortality, as well as the use of fishing effort, rather than limited catch data, to estimate crab fishery bycatch and groundfish fishery PSC discards by assuming a relationship between this fishing mortality and fishing effort from the various fisheries that take Tanner crab as bycatch or PSC.

The workshop report provides a more comprehensive description of these and other issues, along with a full list of recommendations for further model development. Since the conclusion of the workshop, the analysts developed a draft work plan and have begun to address a few of these workshop recommendations. Model 1 is now being used as the new base model. Changes made since the workshop include new sample size weights, a one-time increase in mortality in 1983 applied to mature crabs, and change in the fishing mortality penalty. Preliminary model results as a consequence of these changes are very encouraging.

The SSC greatly appreciates the intensive effort of the analysts and workshop reviewers. **The SSC supports all of the workshop recommendations for the Tanner crab model.** The SSC wonders whether any ancillary data may be useful to help evaluate the operative mechanism (i.e., hide-'em or kill-'em) that may have been operating in the early to mid-1980s. For example, an apparent increase in mortality of large male crab only may be indicative of a fishing effect, whereas an apparent increase in mortality in crabs of all sizes and both sexes may be indicative of a natural die-off. Potential synchrony with similar observations for Bristol Bay red king crab may help to uncover the cause. Depressed prices paid for Tanner crabs in primary foreign markets, if confirmed, might imply unreported, illegal harvests.

Whereas preliminary new mortality runs included a one-time increase in mature crab in 1983 only, **the SSC requests that the assessment authors explore evidence for increased mortalities for all modeled size classes for both sexes, as well as evidence that the mortality event may have occurred in one year versus several years.** When reporting new model results, **the SSC requests that the analysts include Model 1 without the "kill 'em" option. Analysts should report model results separately for some of the more significant changes (e.g., mortality shift), so the reasons for improved future model fits can be judged.** Model diagnostics will also be helpful to evaluate alternative model configurations. **Finally, the SSC requests that the analysts explore model sensitivity to growth and mortality assumptions.** The SSC is very optimistic that a base model can be recommended for use in

annual catch specifications by the Crab Plan Team in May and the SSC in June. Because of the pressing importance of this effort, the SSC requests a report on model progress at the SSC meeting in April 2012.

Tanner Crab Rebuilding

The SSC was provided a very brief summary of workshop discussions about models and scenarios for use in projections for Tanner crab rebuilding analyses. At the time, workshop participants had the understanding that rebuilding analyses could not await further model development and must proceed prior to adoption of a base Tanner crab model. However, it was explained to the SSC at this meeting that it would be acceptable to conduct rebuilding analyses using a base model, which might be accepted in May/June 2012. With this in mind, **the SSC anticipates receipt of an acceptable Tanner crab and refined, more comprehensive plans for rebuilding analyses in June 2012. Rebuilding scenarios outlined in the workshop report appear to be well advised, including the no-fishing scenario. One very important decision concerns the recruitment scenarios to use in the projection analysis.** The issue is that selection of the time period will have big effects on expectations of stock productivity and, therefore, rebuilding probabilities and time frames. Bookends proposed during the workshop included recruitment scenarios based on periods of high (1974 through 1980) and low (1982 through 2011) productivity. **Rebuilding scenarios including these optimistic and pessimistic recruitment projections would be useful, but the SSC also requests scenarios including recruitments drawn from the full set of recruitment observations.** There remains considerable uncertainty about the roles of fishing (e.g., catch, PSC, and bycatch) versus climate (e.g., temperature) versus ecological (e.g., predation) factors on Tanner crab stock status and recruitment.

Aleutian Islands Golden King Crab

Diana Stram (NPFMC) and Steve Martell (University of British Columbia, Crab Plan Team) provided an overview of the outcome of the crab modeling workshop for golden king crab (GKC). M.S.M. Siddeek (ADF&G) provided an overview of model developments for the Aleutian Islands GKC stock. David Fraser (Adak Community Development Corporation), Linda Kozak (Golden King Crab Harvesters), and Steve Hughes (Natural Resource Consultants) gave public testimony.

Dr. Martell reported that the participants in the workshop concluded that the GKC model was not ready for use as the basis of a Tier 4 status determination. **The SSC agrees that additional work is required on the model before it can be used for Tier 4 status determinations.** The SSC will review additional model developments in June 2012.

Dr. Martell explained that workshop participants reviewed the GKC model code and discussed modifications to test assumptions. Some of these modifications were tested during the meeting. He recommended that future crab reviews should consider this workshop format. The format allowed participants to more fully understand the model assumptions and their implementation. Dr. Martell developed new data input code that provided a more flexible platform for modeling. The SSC greatly appreciates Steve's time and his efforts to improve the GKC model. Dr. Ianelli (AFSC, Workshop Chair) reported that efforts are underway to create a generic crab modeling platform. **The SSC agrees that a more flexible modeling platform would be a useful new development and supports continued interim reviews of crab models if they are deemed necessary.**

The workshop report provides a list of activities that should be considered and progress can be discussed during the Crab Plan Team meeting in May. In general, the SSC agrees with the work plan and supports the recommendations in the workshop report. In particular, the SSC agrees that the author should carefully examine the fishery CPUE data to look at effects of soak time, and other explanatory variables. The SSC suggests that, in addition to soak time, other explanatory variables might include time blocks, depth strata, pot design and size, and possibly tide. Fishery CPUE might decline over time due to local depletion. Therefore, breaking the data into temporal blocks may provide a more reliable index of abundance.

The workshop report recommends that the tagging data should be incorporated into the model and suggests that the analysts should attempt to estimate molting probabilities and growth in the model. The SSC supports this approach. The SSC also supports the collection of improved shell condition data on surveys and by onboard observers to allow better estimation of molting probability, as well as continued tagging studies to improve growth estimates.

The workshop report recommended that the author should compare the observer catch estimates with the dockside estimates as a method to estimate discards. The SSC approved this approach for Tanner crab and agrees that the author should consider this approach for GKC.

ADF&G plans to conduct a survey of the Eastern Aleutians in 2012. The SSC strongly supports this activity. The survey would provide the 5th fishery independent data point for this population. The SSC learned that ADF&G is considering minor modifications to the survey design. The SSC cautions against making changes that will alter the integrity of the time series unless they are critical. If changes must occur, the SSC recommends that experiments are conducted to assess how the new approach will compare with the old approach.

PDF of OFL

Diana Stram (NPFMC) and Jim Ianelli (NMFS-AFSC) presented a summary of a workshop on estimating the probability density function (pdf) of the overfishing limit (OFL) for crab stocks. Discussions focused on the need to clarify the definitions of various OFL terms, calculation of variance, and methods to deal with the types of uncertainty not included in assessments. A review of the approaches used for groundfish was helpful to these deliberations. For crab, discussions focused on the computation of pdfs for stocks in Tiers 3 and 4. Workshop participants provided a set of three short-term and seven long-term recommendations.

The SSC extends its appreciation to the workshop participants for making excellent progress on this difficult issue. **The SSC fully endorses the workshop recommendations.** The SSC understands that Jack Turnock and Andre Punt have developed some simulation software applications that may facilitate the estimation of the pdf of OFL. The SSC recommends that they combine their efforts to develop a standard software package with documentation that can be distributed and utilized by all crab stock assessment authors for calculating the pdf of OFL. **The SSC requests that all crab assessment authors implement recommendations 1 through 3 in the upcoming assessment and encourages other efforts to make progress on the remaining workshop recommendations in the near future.**

C-3(e) Final Action Crab EDR and CIE review

The SSC received a presentation of the subject draft RIR-IRFA package from Mark Fina (NPFMC). Public comment was offered by Steve Minor (PNCIAC).

The SSC appreciates the effort that has been made to bring a very complex and multifaceted issue into a relatively manageable framework. The analyst suggested that, within the constraints provided by Council action *as per* our comments at the October 2011 meeting, some changes had been made to address SSC issues.

Because the Council has determined that final action on this amendment will occur at this meeting, the SSC is limited in its ability to offer meaningful comment on the analytic package. We had requested an opportunity to re-examine the revised Initial Review draft RIR/IRFA for this action prior to its release and following consideration of our October 2011 recommendations for revisions. The SSC does not typically review and comment on regulatory analyses at Final Action. Nonetheless, the SSC wishes to make several observations. First, the CIE Review made a series of useful and insightful observations

concerning the need for and benefit of an EDR. Based upon these, the CIE reviewers made several specific recommendations, each of which should be considered by the Council. The summary remarks, provided by the CIE panel chairman, are particularly informative. Among the most compelling of these is the recommendation that scientific data collection and interpretation in the subject areas of economics, anthropology, and sociology would benefit from a dedicated Economic and Social Science Plan Team, equivalent to the biological Plan Teams that serve the Council so effectively.

The SSC endorses the proposal to remove blind formatting, currently mandated under status quo. It appears to the SSC that any potential benefit in additional confidentiality protection that might be attributed to blind formatting is substantially exceeded by the cost, complexity, and risk of introduction of data errors.

The critical importance, yet continued absence, of basic economic (and other social science) data have been the focus of SSC comment and concern for many years. The SSC has repeatedly gone on record challenging the adequacy of economic and socioeconomic impact assessments provided in support of Council actions. With the advent of fishery rationalization programs, expectations for meaningful improvement in economic analyses seemed attainable. The BSAI crab rationalization program, initiated by Congressional action and elaborated by the Council, was expressly framed as a social contract between the public and those private individuals and entities that were recipients of substantial economic value, embodied in tradable IFQ and IPQ access guarantees. That social contract was founded partly on exchanging privately held access privileges for detailed proprietary economic data with which to understand the changes caused by rationalization (e.g., quasi-rents, shares markets, crew compensation, community stability and welfare effects, wealth consolidation, behavioral changes in fishing and processing practices, net welfare changes to the Nation, etc.). The alternatives under consideration by the Council seem to repudiate the agreement struck.

As the SSC noted in our October, 2011 report, the status quo EDR has been judged to be excessively burdensome, given the benefit it yields. Yet, the alternatives to the status quo appear in many ways to be a substantial retreat from meaningful collection of economic performance data. Neither extreme appears to be a rational or desirable course. The SSC believes that the loss of this opportunity will critically impair the Council's ability to meet future management objectives and it will be hard to recover the collective will and momentum to collect such data in the foreseeable future.

The SSC urges the Council to seek opportunities to meaningfully enhance the scope and detail of the revised EDR program they adopt. We believe that there must be some acceptable middle-ground between the status quo EDR program and the incomplete and inadequate data acquisition programs reflected in the two action alternatives.

C-4(a) Initial review GOA trawl sweep modification

An initial review draft EA/RIR/IRFA for GOA trawl sweep modifications was presented by Diana Evans (NPFMC) and Craig Rose (NMFS-AFSC). Public testimony was given by Julie Bonney (AK Groundfish Databank) and John Gauvin (AK Seafood Cooperative). This action is a trailing amendment to Amendment 89 to require trawl sweep modifications on non-pelagic trawl vessels fishing for flatfish in the Central GOA to reduce unobserved Tanner crab mortality. Two alternatives were presented in the draft analysis: 1) status quo with no trawl sweep modifications or 2) require trawl vessels targeting flatfish in the Central GOA with non-pelagic trawl gear to use elevating devices on trawl sweeps to raise them off the seafloor.

The analysis borrows and benefits from information gained from the analysis and implementation issues of trawl sweep modifications for trawl vessels fishing for flatfish in the Bering Sea (cf. Amendment 94). Field experiments conducted with various configurations of trawl sweeps in the GOA showed results similar to those found in the Bering Sea that were found effective in raising the sweeps above the seafloor

and limiting the reduction in groundfish catches in modified trawls. The SSC also appreciates the authors' use of surveys of vessel operators for describing current trawl sweep configurations in the Central GOA and the potential impediments to implementation of trawl sweep modifications if this action is taken. One important aspect of the analysis is the flexibility provided in implementation of the performance standard via a combination of disk size and disk spacing gear standards that achieve the performance standard.

The SSC recommends that the draft document be released for public review with minor modifications as follows:

- Tables 1-2 and 2-4 need to be corrected so that the percentage of PSC is accurately displayed.
- If available, a map of bottom sediments in the Central GOA along with a map of catches of flatfish should be included in the EA.
- Include a discussion that compares the size composition of groundfish catches made with modified and unmodified sweeps.
- Black-footed Albatross need to be removed from the list of ESA candidate species in Table 1-10. Was the bycatch of BFAL actual reports of bycatch or extrapolated numbers of birds taken?
- The document would benefit greatly from a careful and thorough proof-read.

C-4 (b) Initial Review Skate Nursery HAPC

The SSC received a presentation by Sarah Melton (NPFMC), with the assistance of Gerald Hoff (NMFS-AFSC) and John Olson (NMFS-AKR). Public comment was provided Merrick Burden (Marine Conservation Alliance), John Gruver (United Catcher Boats), Donna Parker (Arctic Storm) and John Gauvin (Alaska Seafood Cooperative). The SSC commends the analytical team on their presentation.

The SSC reviewed a discussion paper in February 2011 on this topic and offered several suggestions for the full analysis. The SSC recognizes the considerable work and resulting improvement in the document since we last reviewed it. In response to these SSC comments, the authors adequately explained the practical rationale for choice of areas and the size of the areas to be acted on. They also initiated the quantification of the significance of these sites to the overall recruitment of skates and the potential for additional sites in the Bering Sea. However, there are some areas that still require more analysis and clarification.

We need to know more about the population-level importance of these areas and their potential protection. Is there a higher than average incidental catch of skates in the proposed HAPC areas, and if so, would closing them to fishing improve stock status? Is there evidence that the areas of high egg concentration that have been subject to a high level of bottom-contact fishing have lower densities of egg cases or a higher proportion of non-viable eggs? Of the viable eggs located in the surveys for areas of high concentration of skate eggs, what proportion of viable eggs are in the areas of high concentration and what proportion are in areas of lower density or spread out across the shelf? If the presumed fishing-related mortality of skate eggs were to cease, what effect might this have on skate populations and the ecosystem components with which skates interact? There is a need for a clearer justification for the use of a density of 10,000 egg cases km² as the threshold for deciding that a location is an area of high egg concentration. Finally, since the goal of this action is to protect spawning and breeding habitat necessary to support a sustainable skate fishery and the managed species contribution to a healthy ecosystem, there should be a discussion of the status of the Alaska skate population relative to B_{msy} .

A number of questions were raised, especially in public testimony, concerning the estimation of the economic impacts of the proposed HAPCs, should they be closed to fishing. In addition to the overall mean impact, it would be helpful to know the extreme values when, historically, these areas may have been particularly important fishing grounds. Thus, it would be useful to examine how often these areas have been of importance in the past. At present, the VMS data from 2003 through 2011 serve as the

analytical frame over which impacts are evaluated. The SSC suggests that earlier data on fishing activity in the regions of the designated HAPC sites be investigated. Fisheries data from the early 2000s and mid-to late-1990s, while not equivalent to electronic monitoring, may provide useful insights into historical fishing patterns that pre-date VMS. It would also be useful to determine which of the proposed areas would create difficulties for avoidance, given their proximity to closed areas or known obstacles.

The SSC recommends that the analysts add a more elaborated discussion of the “catch-at-risk” methodology employed to characterize potential changes in fishing in response to HAPC designation. We also recommend adding the modifier “gross” to estimated measures of economic values.

The SSC suggests that the treatment of enforcement issues associated with the proposed HAPC action be reconsidered. Reliance on the enforcement committee report and crab fishing enforcement example is inappropriate to the HAPC program. There also appears to be an opportunity to address proposed skate egg HAPC restriction impacts by gear-type category. That is, fixed gear implications are very different from mobile gear impacts. Likewise, it is not clear that the buffers around the proposed HAPC areas need to be as large as suggested, because all tows will be observed and the observer would be able to determine whether tows with bottom-trawls were in the proposed HAPC areas. Regardless of the size of the buffers, it would help greatly if the authors would clearly define the HAPC area, the buffer area around it, if any, and the area used to determine the economic impact of the proposed closure.

There are also some terminology issues. Although the Council has stated that it wishes to call the proposed HAPC areas “areas of skate egg concentration”, frequently in the document they are referred to as nursery areas. This is confusing, even though the term commonly used in the literature is “nursery area.” Additionally, the authors propose a unique definition of “bycatch”. The SSC sees benefit in keeping the definitions of commonly used terms as precise and consistent as possible.

Finally, the SSC notes that the inclusion of “Research Priorities” as an option in the action alternatives short-circuits the evaluation and ranking of priorities usually provided by the Plan Teams, which are then revised and recommended by the SSC to the Council. The SSC recommends that the Council postpone decisions on research priorities for this action until the Plan Teams have the opportunity to evaluate all suggested research needs. The list of potential research needs should be forwarded to the Groundfish Plan Team. An additional research issue for them to evaluate is the level of suspended sediment in the vicinity of the areas with high concentrations of skate eggs, with and without trawling, and the effects of the suspended sediment on the ability of developing skates to circulate water through their egg cases.

Given the number of confusing issues in the current version of the document, the SSC recommends that the document be returned to staff for additional work and that the SSC have an opportunity to review the next version prior to public release.

C-4(c) Updated discussion paper BBRKC spawning area

Diana Evans (NPFMC) presented a revised and expanded discussion paper on the evaluation of adverse impacts from fishing on crab EFH, previously presented in April 2011. The revisions were largely to incorporate survey and PSC information from the area southwest of Amak Island in Bristol Bay, including exploration of the relationships between the trawl survey data, temperature, and PSC amounts. Options for Council action with respect to protection of this area were also presented in the report. John Gauvin (Alaska Seafood Cooperative) provided public testimony.

The information presented in the revised report is suggestive of the importance of the area southwest of Amak Island, but it is not conclusive. The SSC considers that at present there is insufficient evidence to support any management action but does support further research (see page 35 of the discussion paper). Regarding the relationship between survey CPUE and temperature in that area, the SSC recommends

considering the mean temperature across the range of BBRKC habitat and the extent of the cold pool, rather than simply local temperature.

C-4(d) 2012-2015 Deep Sea coral research

The SSC received a presentation from Chris Rooper (NMFS-AFSC) on the fieldwork planned for the Alaska Coral and Sponge Initiative (AKCSI; 2012-2014), sponsored by the NOAA Deep Sea Coral Research and Technology Program (DSCRTP). Public testimony was received from Jackie Dragon (Greenpeace).

A number of ongoing research priorities and objectives in the Alaska region were identified by the DSCRTP, the North Pacific Fishery Management Council, and Essential Fish Habitat-Environmental Impact Statement (EFH-EIS) process and are the focus of this initiative. The SSC believes this research will provide extremely valuable information to inform the Council process, in order to better understand the location, distribution, ecosystem role, and status of deep-sea coral and sponge habitats. The objectives are consistent with the Council's Five-Year Research Priorities (Council Priorities) identified in June 2011. They were identified as an **immediate concern**, "Evaluating habitats of particular concern" (III.A) and an **ongoing need**, "Habitat mapping" (III.A and III.B). One exception was noted, pertaining to assessments of the distribution and prevalence of coral and sponge habitat, specifically in Bering Sea canyons (III.A.1). The SSC noted that at the time the Council Priorities were identified, research on this priority topic was thought to be partially underway. At present, the AKSCI does not include any Bering Sea research projects. It is unclear if the Bering Sea coral research that is currently underway is sufficient to meet Council needs. This could be evaluated by the AKSI program in out-years.

The SSC encourages the AKSCI to continue or pursue cooperative efforts with the National Park Service, the Gulf of Alaska Integrated Ecosystem Research Program, and the Aleutian Bering Sea Islands Landscape Conservation Cooperative. SSC members suggested an Automated Underwater Vehicle may be more appropriate than Remote Operated Vehicles for assessments in the deeper habitats. Overall, the SSC considers the AKSCI research to be highly relevant to multiple Council Priorities identified in June 2011 and will provide timely information for upcoming Council activities related to EFH.

SSC Workshop on Use of Stock-Recruitment Relationships in Stock Assessments

At its December 2011 meeting, the SSC chose stock-recruitment issues as its topic for its workshop held February 1, in conjunction with the SSC meeting. The following key issues were identified:

- criteria for moving from Tier 3 to Tier 1, based on whether a spawner-recruit (SR) relationship was credible (and had a corresponding pdf for F_{MSY}),
- detecting regimes for when an SR relationship changed,
- estimation of an SR relationship within the assessment or outside,
- how much weight to give the SR relationship if inside the assessment.

In addition, there are several related issues that pertain specifically to the effort to examine the implications of incorporating uncertainty buffers into the groundfish management system. Key questions include:

1. Should form and steepness be constrained? If so, on what basis (e.g., meta-analysis to determine similar stock groupings)?
2. Should the initial SR model be estimated by assuming $B_{35\%}$ is B_{MSY} and $F_{35\%}$ is F_{MSY} ?
3. What are the best methods for estimating uncertainty when estimating the SR model?

The following presentations were given at the workshop to help discussion of these issues and questions:

- Tom Wilderbuer (AFSC) – Tier 1 management overview and experience with advancing stocks to Tier 1.
- Megan Stachura (UW) - Multivariate analysis of groundfish recruitment to understand environmental forcing.
- Cody Szuwalski (UW) - Identifying recruitment regimes and specifying B_{MSY} proxies, a case study for snow crab.
- Teresa A'mar (AFSC) - Identifying recruitment regimes and specifying B_{MSY} proxies, a case study for walleye pollock.
- Martin Dorn (AFSC) – Use of stock-recruit steepness priors based on meta-analysis in West Coast rockfish assessments.
- Grant Thompson (AFSC) - Some problems associated with estimating relative recruitment without first filtering out random effects.
- Jim Ianelli (AFSC) - Issues and concerns in modeling stock recruitment for EBS walleye pollock.

The SSC thanks the presenters for their useful presentations. Three presentations considered analytical approaches to address regime shifts in stock production (Stachura, Szuwalski, A'mar). These presentations applied statistical methods to identify shifts in recruitment and evaluated the implications of shifting time frames on harvest control strategies. The SSC recommended that analysts should consider estimating the power to detect environmental change and the vulnerability and susceptibility of different species to these changes. This could be used to evaluate the risk of calling a regime, if one had not occurred. The presentation by Dr. A'mar revealed that if a real regime shift is not identified in the assessment, then the biological reference points slowly moved in the correct direction of change anyway. This property could be used if the detection power was low and the risk of misspecifying the regime shift was high. Some authors utilized management strategy evaluations to analyze the implications of shifting biological reference points when detection skill was low. The SSC agrees that this is a promising analytical approach.

Dr. Ianelli and Mr. Wilderbuer provided approaches in which variables representing environmental forcing are incorporated into the SR relationship. This type of approach requires collection of additional data, which can be expensive or time-consuming to collect, but has the desirable quality of accounting for environmental variability in the assessment. With this type of approach, it is then necessary to select biological reference points that are intended to reflect the long-term average productivity of the stock. One approach is to make forecasts of future values of the environmental variables. Another approach that is similar to current BRP's is to use an average of the historical time series of environmental conditions over a selected time period thought to be an accurate representation of the average condition.

Drs. Dorn, Thompson, and Ianelli provided three different approaches to incorporate spawner-recruitment relationships into stock assessment. Dr. Dorn noted that west coast assessment scientists inform steepness in the stock recruitment relationship by either estimating steepness with a prior based on a meta-analysis, or by fixing steepness at the mean of the meta-analysis. The SSC noted that, if this approach was used, the analysts might consider using the cluster analysis techniques shown in the presentation by Ms. Stachura as a basis for grouping stocks for the meta-analysis. If this approach was used, it appears that cod, pollock and sablefish stocks would be grouped together. Dr. Thompson introduced a statistical method to estimate mean recruitment and σ_R . Dr. Ianelli provided an example where he conditioned the spawner-recruit parameters on the basis of the assumption that $F_{35\%}$ was equal to F_{msy} . The SSC encourages stock assessment analysts and the Plan teams to evaluate all three of these approaches.

Workshop participants discussed the criteria needed to transition a stock to Tier 1 and commented that the pdf of F_{msy} should incorporate several sources of error in growth, natural mortality, selectivity, and the SR relationship.

The SSC and Plan Team members discussed timelines to continue research on this topic. The SSC supports the previous recommendation of the Groundfish Plan Teams that the next step would be to hold a workshop to develop guidelines on how to address environmental changes in the SR relationship into biological reference points and how to model environmental forcing in stock projection models. The discussions from the SSC workshop should be helpful in identifying terms of reference for the next workshop. The SSC believes it would be useful to have members from both the Groundfish and Crab Plan Teams present, because the issues are common to both groups. Also, it would be useful to have some Groundfish Plan Team members attend the May Crab Plan Team meeting to provide input into these issues as they relate to the Tanner crab rebuilding analysis and to have some Crab Plan Team members attend the September Groundfish Plan Team meeting for the same reason.

North Pacific Fishery Management Council

Eric A. Olson, Chairman
Chris Oliver, Executive Director



605 W. 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Telephone (907) 271-2809

Fax (907) 271-2817

Visit our website: <http://www.alaskafisheries.noaa.gov/npfmc>

FINAL

ADVISORY PANEL MINUTES North Pacific Fishery Management Council January 30 - February 2, 2012 Seattle, Washington

The following (19) members were present for all or part of the meetings:

Kurt Cochran
Craig Cross
Julianne Curry
Jerry Downing
Tom Enlow
Tim Evers
Jeff Farvour
Becca Robbins Gisclair

Jan Jacobs
Alexus Kwachka
Craig Lowenberg
Chuck McCallum
Matt Moir
Theresa Peterson
Ed Poulsen
Neil Rodriguez

Lori Swanson
Anne Vanderhoeven
Ernie Weiss

*Absent: Andy Mezirow,
John Crowley*

Minutes of the December 2011 meeting were approved.

Election of Officers

The Advisory Panel approved Tom Enlow as Chair and Lori Swanson and Becca Robbins Gisclair as co-vice Chairs for 2012.

C-2 Halibut PSC in GOA – Initial Review Analysis

The current analysis package only considers reductions to PSC limits and does not include tools for industry to accomplish PSC reductions while maintaining harvest levels. For this reason, the AP recommends that the analysis be revised to include options to:

- Tie PSC reductions to halibut stock status (floating cap)
- Allow some portion of unused PSC (50-100%) to roll from one year to the next
- Develop individual bycatch quotas for groundfish participants based on catch history.
- Allow Amendment 80 sideboards to roll from season to season, and manage Am 80 5th season sideboards as aggregate (not separated into deep- and shallow-water complexes).
- Include an option for a sector split of the trawl halibut PSC cap between CVs and CPs.

The AP recommends that the document not be released for public review.

Motion passed 11-8.

The following substitute motion failed 8-11:

The AP recommends the Council move this analysis forward with the following additions:

Alternative 2, Option 2:

Suboption 1:

Add (d) 20 percent

Suboption 2:

Add (d) 20 percent

Suboption 3:

Add (d) 20 percent

Add Suboption (applied to suboptions 1-3): 10% reduction in year 1, an additional 5% in year 2 and another 5% in year 3 (total reduction = 20%).

Incorporate the following in the analysis:

- Incorporate new IPHC data and other bluebook information.
- Look at individual vessel bycatch rates in specific fisheries to assist in determining whether bycatch is a random event or whether fishing behavior is a factor (i.e. are there boats with consistently high bycatch rates).
- Include history of halibut bycatch reductions in the H&L CP sector.

Minority Report on C-2: The undersigned minority supported the substitute motion. The minority felt that action must be taken to reduce halibut PSC limits in the Gulf of Alaska. Review of the IPHCs current and retrospective status of the halibut stocks indicates a clear need to protect the halibut resource. Uncertainty surrounding overall stock health, low exploitable biomass, and slow growth rates warrants a precautionary approach to halibut removals. Inadequate reductions in total removals of halibut may threaten the rebuilding potential of halibut stocks.

The directed commercial and charter halibut fisheries have taken significant reductions in allowable harvest over the past decade. Gulf regulatory areas (2C, 3A, 3B) experienced a 50% total reduction in allowable harvest by the directed commercial fishery from 2002 to 2011 while the 2C charter halibut fleet was reduced to the bottom GHL stairstep in 2011. The dynamics of the directed and non-directed halibut fisheries have changed significantly, while the PSC limits for Gulf of Alaska trawl and fixed gear fleets have remained at the levels set in 1986 and 1995 respectively.

Signed by: Ernie Weiss, Becca Robbins Gisclair, Chuck McCallum, Theresa Peterson, Tim Evers, Jeff Favour, Alexis Kwachka, Julianne Curry

C-3(a) Pribilof Island blue king crab rebuilding

The AP recommends that the Council delay final action on Pribilof Island blue king crab bycatch management to allow input from the SSC and the Crab Plan Team.

The AP recommends modifying Alternative 6 as shown in **bold**.

Component 2. Triggered closure of the area representing the distribution of the PIBKC stock between 1984-2009 (See Figure 10-3). The PSC associated with this closure is established as a fishery-wide level at 75% of the ABC (currently this equates to a cap of 1,726 lbs or 646 crab). This PSC cap is then further allocated as follows:

- Option 1.** To sectors by gear type as follows:
 Trawl Gear – 45% of trigger cap
 Pot Gear – 45% of trigger cap
 H&L Gear – 30% of trigger cap

Under the current 2011/12 ABC this would equate to cap levels by sectors as indicated in the table below (in lb and numbers of crab):

Gear type	% allocation	Cap (lb)	Cap (numbers of crab)
Trawl	45%	777	291
Pot	45%	777	291
Hook and Line	30%	518	194

Option 2. Seasonally to all fisheries in aggregate. Any unused PSC will roll to the following season.

- a) 25 % to first quarter, 25% to second quarter, 50% to last half of year
- b) 50% to first half of year, 50% to last half of year
- c) 75% to first half of year, 25% to second half of year

Further, the AP recommends that bycatch caps be managed as a number of crab, based on the average weight of PIBKC over the last five years.

The AP emphasizes the importance of precision in bycatch estimates, and requests continued development of census reporting of PIBKC bycatch.

The AP recommends that the Council request staff include a discussion of the following documents in the EA:

- Declaration of Commercial Fishery Failure, 2000
- SSC Minutes of April 10-12, 2000
- Declaration of Overfishing Status for PIBKC, September 5, 2002

The AP requests that the stock boundary for PIBKC be refined to reflect the true distribution of the Pribilof Island blue king crab resource with input from the Crab Plan Team and the SSC.

Motion passed 18-0.

C-3(c) Tanner Crab Rebuilding

The AP comments that we are encouraged by the progress made regarding the *bairdi* model which will help as we move forward with a rebuilding plan. The AP credits much of this progress to the recent Crab Modeling Workshop and encourages this forum to occur in the future as necessary to address crab modeling issues.

Motion passed 18-0.

C-3(e) Crab Economic Data Reporting

The AP recommends that a modified Alternative 3 (attached) be moved forward for final action to revise catcher vessel and catcher processor EDR forms. The AP further recommends that alternative 3, also attached, be moved forward for final action to revise the shore based processor and floating processor EDR forms. Finally, the AP recommends that general regulations be developed to implement this collection, with all forms (and any form revisions) subject to revision in the Council process.

Motion passed 14-4.

Note: The only changes made under the AP's modified Alternative 3 motion to catcher vessel and catcher processor EDR forms from Alternative 3 were to exclude "All unique captain and crew contracts and settlement sheets" and to include "crew license number/CFEC permit number".

Minority Report: A minority of the AP did not support this motion because they felt that the alternative selected would not provide the data necessary to reach the original goals of the crab EDR program of assessing the effects and impacts of crab rationalization. While the minority agrees with the premise of eliminating redundant or unusable data elements, the minority was not comfortable with removing a significant number of data elements at this time. The minority supported an approach of developing better ways to collect necessary data elements which are not accurately collected rather than simply eliminating key data collection elements.

Signed by: Becca Robbins Gisclair, Chuck McCallum, Theresa Peterson, Alexis Kwachka

C-4(a) Trawl Sweep Modifications

The AP recommends that the Council move the analysis forward on a normal timeline and send it out for public review.

Motion passed 19-0.

C-4(b) HAPC – Skate Egg Concentration Sites

The AP recommends that the analysis not be sent out at this time. The analysis should be expanded to include:

- Longer history of fishing in proposed sites
- Further discussion with NMFS enforcement on ability to minimize closure size
- Economic analysis of impacts of actual proposed closure site, including buffer(s)
- Options for circular closures centered on highest density
- Discussion of sites in other areas (BS, AI, GOA)
- Further explanation of the calculation used to estimate total number of sites
- Further explanation of how density of eggs is determined
- A table including sites, species, casing density, population trend, fisheries in the site and amount of fish caught in site.
- Actual bycatch of egg casings by gear type in each site
- Actual impact of fishing gear on the habitat
- Clarification of process for modifying fishing restrictions in HAPC sites

The AP also encourages the analysts to work with fishing industry members to better identify and explain the importance of the sites to fisheries, and issues related to the effects of potential closures.

Motion passed 19-0.

C-4(c) BBRKC Spawning Area/Fishery Effects

The AP recommends that the Council request that the discussion paper be brought back after the nearshore survey work in 2012 can be incorporated, and after the Crab Plan Team can address this issue.

Motion passed 19-0.

D-1(b) GOA Pollock D-season

The AP recommends that the Council take no further action on this issue.

Motion passed 17-1.

D-1(c) AFA Vessel Replacement on GOA Sideboards

The AP recognizes the need to clarify ambiguities in the effect of the AFA vessel replacement language highlighted by staff in the discussion paper.

The AP recommends that the Council develop a purpose and need statement and request staff initiate analysis of the following alternatives:

1. To fish in the GOA, a replaced/rebuilt vessel must:
 - Option 1. Be within the MLOA specified on their GOA LLP at the time the legislation was approved
 - Option 2. Be within the MLOA specified on both their GOA and BSAI LLPs at the time the legislation was approved
 - Option 3. Abide by current 10% limit on increase in existing length, horsepower and tonnage as of the time of the legislation and may not exceed 125 feet.
2. If the replaced vessel did not have a GOA LLP at the time of the legislation, the replacement vessel is not eligible to fish in GOA.
3. Upon removal of an exempted vessel, the sideboard exemption is extinguished and cannot be transferred to another vessel.

The analysis should address the possibility that a replacement vessel could exceed the 125-foot limit on exempt vessels contained in the current AFA regulation.

Motion passed 19-0.

D-1(d) BSAI Flatfish Specification Flexibility

The AP recommends that the Council move this issue forward for analysis, and ask staff to further develop options to maximize flatfish harvesting flexibility, with input from participants in the affected fisheries. The options should insure harvest by species is below ABC limits, and should not pre-empt flatfish harvests in other sectors.

Motion passed 17-1.

D-2 Staff Tasking

The AP recommends that the Council initiate the process of updating the Programmatic SEIS by scheduling a scoping meeting and requesting staff to prepare a discussion paper.

Motion passed 19-0.

The AP recommends that the Council encourage NOAA to facilitate the development of integratable software to use with navigational systems onboard vessels.

Motion passed 17-0.

The AP recommends that the Council develop EDR programs for all federal fisheries to facilitate the development of baseline data.

Motion passed 12-5.

The AP supports continued efforts by the Council to improve electronic communication.

Motion passed 18-0.

Data type	Data element	Alt 1. (status quo)	Alt 2.	Alt 3.	Modified Alt 3.
Fishing data	Fish ticket number	all crab fisheries	-	-	-
	Days fishing	by crab fishery	-	-	-
	Days traveling (from port to grounds) and offloading	by crab fishery			
Deliveries and revenues	Landings by share type - pounds	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Deadloss by share type - pounds	by crab fishery		-	-
	Landings by share type - revenues	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Vessel owner's IFQ used on the vessel by share type	by crab fishery	-	-	-
	Vessel owner's IFQ used on other vessels by share type				
	Leased quota by share type - pounds	by crab fishery	by crab fishery	by crab fishery- arms length monetary payments only	by crab fishery- arms length monetary payments only
	Leased quota by share type - cost				
Leased quota by share type - crew contributing shares	by crab fishery	aggregated all crab fisheries- count of crew leasing			
Crew	Number of crew by fishery	by crab fishery	-	-	-
	Payments to crew	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Payments to captain	by crab fishery	by crab fishery, check box for skipper/owners	by crab fishery	by crab fishery
	Labor payment details - charges and deductions	in all crab fisheries			
	All unique captain and crew contracts and settlement sheets		by crab fisheries	by crab fisheries	-
	Revenue shares - owner/crew/captain	by crab fishery	-	-	-
	Crew license number/CFEC permit number	aggregated across all crab fisheries	aggregated across all crab fisheries	-	aggregated across all crab fisheries
	Insurance premium - crab only	aggregated across all crab fisheries and aggregated across all fisheries	-	-	-
	Paid deductibles - crab only	aggregated across all crab fisheries	-	-	-
	Pot purchases - number	aggregated for all crab fisheries	aggregated all fisheries new pots only		
	Pot purchases - cost				
	Pot purchases - location	aggregated for all crab fisheries	-	-	-
	Line and other gear purchases - costs	aggregated for all crab fisheries			
	Line and other gear purchases - location	aggregated for all crab fisheries	-	-	-
	Bait used - species/pounds by fishery	by crab fishery	-	-	-
	Bait used - species/cost by fishery				

Data type	Data element	Alt 1. (status quo)	Alt 2.	Alt 3.	Modified Alt 3.
Crab costs	Bait used - purchase location by fishery	by crab fishery	-	-	-
	Fuel used - gallons by fishery	by crab fishery		by crab fishery (gallons only)	by crab fishery (gallons only)
	Fuel used - cost by fishery			-	-
	Fuel used - purchase location by fishery	by crab fishery	-	-	-
	Food and provisions - costs	aggregated across all crab fisheries	-		
	Other crew expenses	aggregated for all crab fisheries	-		
	Freight costs for landed crab	aggregated for all crab fisheries	-		
	Storage, wharfage, delivery costs for gear	aggregated for all crab fisheries	-		
	Observer costs - by fishery	by crab fishery	-	-	-
	Landing taxes and fees	aggregated across all crab fisheries	-	-	-
	Cooperative fees	aggregated across all crab fisheries	-	-	-
	Other expenses	aggregated across all crab fisheries	-	-	-
	Vessel costs	Vessel and equipment investment - cost	aggregated across all fisheries (excluding exclusively non-crab costs)	aggregated all fisheries, including R&M	
Vessel and equipment investment - location		aggregated across all fisheries	-	-	-
Repair and maintenance - costs		aggregated across all fisheries	-	-	-
Repair and maintenance - location		aggregated across all fisheries	-	-	-
Insurance premium		aggregated across all fisheries	Aggregated All Fisheries	-	-
Fuel - gallons and cost				aggregated all fisheries	aggregated all fisheries
Fuel, lubrication, fluids - annual - cost		aggregated across all fisheries	Aggregated All Fisheries	-	-
Fuel, lubrication, fluids - annual - location		aggregated across all fisheries	-	-	-
Other vessel specific costs		aggregated across all fisheries	-	-	-
All activities	Days at sea - all activities	aggregated across all activities	-	-	-
	Gross revenues - all activities	aggregated across all activities	aggregated across all activities	-	-
	Pounds - all fisheries	aggregated across all fisheries	-	-	-
	Tendering			check box	check box
	Labor cost - all activities	aggregated across all activities	aggregated across all activities	aggregated across all activities	aggregated across all activities

Data type	Data element	Alt 1. (status quo)	Alt 2.	Alt 3.	Modified Alt 3.
Fishing Data	Dates covered (days in the fishery)	by crab fishery			
	Days fishing	by crab fishery	-	-	-
	Days traveling (from port to grounds) and offloading	by crab fishery			
	Days processing	by crab fishery			
Deliveries and revenues - for operations as a catcher vessel	Landings by share type - pounds	-	by crab fishery	by crab fishery	by crab fishery
	Landings by share type - revenues	-	by crab fishery	by crab fishery	by crab fishery
Production	Raw crab processed by fishery	by crab fishery			
	Product and processed pounds by fishery	by crab fishery			
	Production - crab size and grade	by crab fishery			
	Production - box size	by crab fishery			
	Production - finished pounds	by crab fishery			
	Production - custom processing identifier	by crab fishery			
Revenues	Sales to affiliates/non-affiliates by species - product/process	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Sales to affiliates/non-affiliates by species - crab size and grade	by crab fishery	by crab fishery		
	Sales to affiliates/non-affiliates by species - box size and finished pounds	by crab fishery	by crab fishery	by crab fishery (use box size categories)	by crab fishery (use box size categories)
	Sales to affiliates/non-affiliates by species - revenues (fob)	by crab fishery	by crab fishery	by crab fishery - FOB Alaska	by crab fishery - FOB Alaska
	Custom processing by species/product/process	by crab fishery	by crab fishery	by crab fishery (include pounds raw and pounds of product)	by crab fishery (include pounds raw and pounds of product)
	Custom processing revenues	by crab fishery	by crab fishery	by crab fishery	by crab fishery
IFQ	Vessel owner's IFQ used on the vessel by share type	by crab fishery	-	-	-
	Vessel owner's IFQ used on other vessels by share type				
	Leased quota by share type - pounds	by crab fishery	by crab fishery	by crab fishery- arms length monetary payments only	by crab fishery- arms length monetary payments only
	Leased quota by share type - cost				
	Leased quota by share type - crew contributing shares	by crab fishery	aggregated all crab fisheries- count of crew leasing	-	-

Data type	Data element	Alt 1. (status quo)	Alt 2.	Alt 3.	Modified Alt 3.
Crew	Number of harvest crew by fishery	by crab fishery	-	-	-
	Payments to captain	by crab fishery	by crab fishery -check box for skipper/owners	by crab fishery	by crab fishery
	Payments to harvest crew	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Harvest labor payment details - charges and deductions	in all crab fisheries			
	Number of crew paid based on processing work	by crab fishery			
	Average processing positions by fishery	by crab fishery			
	Total processing labor payments	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	All unique captain and crew contracts and settlement sheets		by crab fisheries	by crab fisheries	-
	Crew license number/CFEC permit number	aggregated across all crab fisheries	aggregated across all crab fisheries	-	aggregated across all crab fisheries
	Crab processing employees by residence	aggregated across all crab fisheries	aggregated across all crab fisheries	-	-
Custom processing services purchased	Custom processing services purchased - raw pounds	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Custom processing services purchased - product and process	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Custom processing services purchased - size and grade	by crab fishery			
	Custom processing services purchased - box size	by crab fishery			
	Custom processing services purchased - finished pounds	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Custom processing services purchased - processing fee	by crab fishery	by crab fishery	by crab fishery	by crab fishery
Crab purchases	Raw crab purchases by fishery - ifq type	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Raw crab purchases by fishery - size and grade	by crab fishery			
	Raw crab purchases by fishery - pounds	by crab fishery	by crab fishery	by crab fishery	by crab fishery
	Raw crab purchases by fishery - gross payments	by crab fishery	by crab fishery	by crab fishery	by crab fishery

Data type	Data element	Alt 1. (status quo)	Alt 2.	Alt 3.	Modified Alt 3.
Crab costs	Insurance premium - crab only	aggregated across all crab fisheries	-	-	-
	Paid deductibles - crab only	aggregated across all crab fisheries	-	-	-
	Pot purchases - number	aggregated for all crab fisheries	aggregated all fisheries new pots only	-	-
	Pot purchases - cost				
	Pot purchases - location	aggregated for all crab fisheries	-	-	-
	Line and other gear purchases - costs	aggregated for all crab fisheries	-	-	-
	Line and other gear purchases - location	aggregated for all crab fisheries	-	-	-
	Bait used - species/pounds by fishery	by crab fishery	-	-	-
	Bait used - species/cost by fishery				
	Bait used - purchase location by fishery	by crab fishery	-	-	-
	Fuel used - gallons by fishery	by crab fishery	-	by crab fishery (gallons only)	by crab fishery (gallons only)
	Fuel used - cost by fishery			-	-
	Fuel used - purchase location by fishery	by crab fishery	-	-	-
	Food and provisions - costs	aggregated across all crab fisheries	-	-	-
	Other crew expenses	aggregated for all crab fisheries	-	-	-
	Processing and packing materials, equipment, and supplies - crab	aggregated across crab fisheries	-	-	-
	Repackaging costs	aggregated across crab fisheries			
	Broker fees and promotions by fishery	by crab fishery			
	Lease (IPQ) costs		by crab fishery	by crab fishery - arm's length (monetary payments)	by crab fishery - arm's length (monetary payments)
	Landing and sales taxes and fees - crab only	by crab fisheries			
	Storage, wharfage, delivery costs for gear	aggregated for all crab fisheries			
	Observer costs - by fishery	by crab fishery	-	-	-
	Freight costs for products	aggregated across crab fisheries			
Product storage	aggregated across crab fisheries				
Cooperative fees	aggregated across all crab fisheries	-	-	-	
Other expenses	aggregated across all crab fisheries	-	-	-	

Data type	Data element	Alt 1. (status quo)	Alt 2.	Alt 3.	Modified Alt 3.
Vessel costs	Vessel and equipment investment - cost	aggregated across all fisheries (excluding exclusively non-crab costs)	aggregated all fisheries, including R&M	-	-
	Vessel and equipment investment - location	aggregated across all fisheries	-	-	-
	Repair and maintenance - costs	aggregated across all fisheries	-	-	-
	Repair and maintenance - location	aggregated across all fisheries	-	-	-
	Foremen, managers, other employees and salaries	aggregated across all fisheries	aggregated across all fisheries	aggregated across all fisheries	aggregated across all fisheries
	Insurance premium	aggregated across all fisheries	Aggregated All Fisheries	-	-
	Fuel - gallons and cost			aggregated all fisheries	aggregated all fisheries
	Fuel, lubrication, fluids - annual - cost	aggregated across all fisheries	Aggregated All Fisheries	-	-
	Fuel, lubrication, fluids - annual - location	aggregated across all fisheries	-	-	-
	Other vessel specific costs	aggregated across all fisheries	-	-	-
All activities	Processing days - all activities	aggregated all fisheries	aggregated all fisheries		
	Days at sea - all activities	aggregated across all activities	aggregated all fisheries		
	FOB revenues - all activities	aggregated across all activities	aggregated all fisheries		
	Finished pounds - all fisheries	aggregated across all fisheries	aggregated all fisheries		
	Round/raw pounds - all fisheries	aggregated across all fisheries	aggregated all fisheries		
	Labor cost - all activities	aggregated across all activities	aggregated all fisheries		

Data type	Data element	Alt 1. (status quo)	Alt. 2	Alt. 3
Production	Production - dates covered by fishery	by crab fishery		
	Production - processing days by fishery	by crab fishery	Providing first and last day and number of active days	
	Raw crab processed by fishery	by crab fishery		
	Product and processed pounds by fishery	by crab fishery		
	Production - crab size and grade	by crab fishery		
	Production - box size	by crab fishery		
	Production - finished pounds	by crab fishery		
	Production - custom processing identifier	by crab fishery		
Revenues	Sales to affiliates/non-affiliates by species - product/process	by crab fishery	by crab fishery	by crab fishery
	Sales to affiliates/non-affiliates by species - crab size and grade	by crab fishery	by crab fishery	
	Sales to affiliates/non-affiliates by species - box size and finished pounds	by crab fishery	by crab fishery	by crab fishery (use box size categories)
	Sales to affiliates/non-affiliates by species - revenues (fob)	by crab fishery	by crab fishery	by crab fishery - FOB Alaska only
	Custom processing by species/product/process	by crab fishery	by crab fishery	by crab fishery (include pounds raw and pounds of product)
	Custom processing revenues	by crab fishery	by crab fishery	by crab fishery
Labor	Average processing positions	by crab fishery		
	Man-hours	by crab fishery	by crab fishery	aggregated across all fisheries
	Total processing labor payments	by crab fishery	by crab fishery	aggregated across all fisheries
	Crab processing employees by residence	by crab fishery	by crab fishery	aggregated across all fisheries
Custom processing services purchased	Reporting requirement			All companies contracting custom processing must report
	Custom processing services purchased - raw pounds	by crab fishery	by crab fishery	by crab fishery
	Custom processing services purchased - product and process	by crab fishery	by crab fishery	by crab fishery
	Custom processing services purchased - size and grade	by crab fishery		
	Custom processing services purchased - box size	by crab fishery		
	Custom processing services purchased - finished pounds	by crab fishery	by crab fishery	by crab fishery
	Custom processing services purchased - processing fee	by crab fishery	by crab fishery	by crab fishery
Crab purchases	Raw crab purchases by fishery - ifq type	by crab fishery	by crab fishery	by crab fishery
	Raw crab purchases by fishery - size and grade	by crab fishery		
	Raw crab purchases by fishery - pounds	by crab fishery	by crab fishery	by crab fishery

Data type	Data element	Alt 1. (status quo)	Alt. 2	Alt. 3
	Raw crab purchases by fishery - gross payments	by crab fishery	by crab fishery	by crab fishery
Crab processing costs	Fisheries taxes and fees - crab only	by crab fisheries		
	Processing and packing materials, equipment, and supplies - crab only	aggregated across crab fisheries		
	Food and provisions - crab only	aggregated across crab fisheries		
	Other direct crab labor costs	aggregated across crab fisheries		
	Insurance deductibles - crab only	aggregated across crab fisheries		
	Repackaging costs	aggregated across crab fisheries		
	Broker fees and promotions by fishery	by crab fishery		
	Lease (IPQ) costs	by crab fishery	by crab fishery	by crab fishery - arm's length (monetary payments)
	Observer costs	by crab fishery		
	Freight cost for plant supplies	aggregated across crab fisheries		
	Freight costs for products	aggregated across crab fisheries		
	Product storage	aggregated across crab fisheries		
	Water, sewer, and waste disposal	aggregated across crab fisheries		
	Other crab-specific costs	aggregated across crab fisheries		
General plant costs	Annual fuel, electricity, lubrication, hydraulic fluids	aggregated across all fisheries		
	Plant and equipment investments	aggregated across all fisheries		
	Repair and maintenance	aggregated across all fisheries		
	Foremen, managers, other employees and salaries	aggregated across all fisheries	aggregated across all fisheries	aggregated across all fisheries
	Other plant specific costs	aggregated across all fisheries		
General processing information	Processing days - annual total - all fisheries	aggregated across all fisheries	aggregated across all fisheries	
	Gross FOB revenues - annual total - all fisheries	aggregated across all fisheries	aggregated across all fisheries	
	Finished processed pounds - annual total - all fisheries	aggregated across all fisheries	aggregated across all fisheries	
	Processing labor costs - annual total - all fisheries	aggregated across all fisheries	aggregated across all fisheries	

Data type	Data element	Alt 1. (status quo)	Alt. 2	Alt. 3
Production	Production - dates covered by fishery	by crab fishery		
	Production - processing days by fishery	by crab fishery	Providing first and last day and number of active days	
	Raw crab processed by fishery	by crab fishery		
	Product and processed pounds by fishery	by crab fishery		
	Production - crab size and grade	by crab fishery		
	Production - box size	by crab fishery		
	Production - finished pounds	by crab fishery		
	Production - custom processing identifier	by crab fishery		
Revenues	Sales to affiliates/non-affiliates by species - product/process	by crab fishery	by crab fishery	by crab fishery
	Sales to affiliates/non-affiliates by species - crab size and grade	by crab fishery	by crab fishery	
	Sales to affiliates/non-affiliates by species - box size and finished pounds	by crab fishery	by crab fishery	by crab fishery (use box size categories)
	Sales to affiliates/non-affiliates by species - revenues (fob)	by crab fishery	by crab fishery	by crab fishery FOB Alaska only
	Custom processing by species/product/process	by crab fishery	by crab fishery	by crab fishery (include raw pounds and pounds of product)
	Custom processing revenues	by crab fishery	by crab fishery	by crab fishery
Labor	Average processing positions	by crab fishery		
	Man-hours	by crab fishery	by crab fishery	aggregated across all fisheries
	Total processing labor payments	by crab fishery	by crab fishery	aggregated across all fisheries
	Crab processing employees by residence	by crab fishery	by crab fishery	aggregated across all fisheries
Custom processing services purchased	Reporting requirement			All companies contracting custom processing must report
	Custom processing services purchased - raw pounds	by crab fishery	by crab fishery	by crab fishery
	Custom processing services purchased - product and process	by crab fishery	by crab fishery	by crab fishery
	Custom processing services purchased - size and grade	by crab fishery		
	Custom processing services purchased - box size	by crab fishery		
	Custom processing services purchased - finished pounds	by crab fishery	by crab fishery	by crab fishery
	Custom processing services purchased - processing fee	by crab fishery	by crab fishery	by crab fishery
Crab purchases	Raw crab purchases by fishery - ifq type	by crab fishery	by crab fishery	by crab fishery
	Raw crab purchases by fishery - size and grade	by crab fishery		

Data type	Data element	Alt 1. (status quo)	Alt. 2	Alt. 3
Crab purchases	Raw crab purchases by fishery - pounds	by crab fishery	by crab fishery	by crab fishery
	Raw crab purchases by fishery - gross payments	by crab fishery	by crab fishery	by crab fishery
Crab processing costs	Fisheries taxes and fees - crab only	by crab fisheries		
	Processing and packing materials, equipment, and supplies - crab only	aggregated across crab fisheries		
	Food and provisions - crab only	aggregated across crab fisheries		
	Other direct crab labor costs	aggregated across crab fisheries		
	Insurance deductibles - crab only	aggregated across crab fisheries		
	Repackaging costs	aggregated across crab fisheries		
	Broker fees and promotions by fishery	by crab fishery		
	Lease (IPQ) costs	by crab fishery	by crab fishery	by crab fishery - arm's length (monetary payments)
	Observer costs	by crab fishery		
	Freight cost for plant supplies	aggregated across crab fisheries		
	Freight costs for products	aggregated across crab fisheries		
	Product storage	aggregated across crab fisheries		
	Water, sewer, and waste disposal	aggregated across crab fisheries		
Other crab-specific costs	aggregated across crab fisheries			
General plant costs	Annual fuel, electricity, lubrication, hydraulic fluids	aggregated across all fisheries		
	Vessel and equipment investments	aggregated across all fisheries		
	Repair and maintenance	aggregated across all fisheries		
	Foremen, managers, other employees and salaries	aggregated across all fisheries	aggregated across all fisheries	aggregated across all fisheries
	Other vessel specific costs	aggregated across all fisheries		
General processing information	Processing days - annual total - all fisheries	aggregated across all fisheries	aggregated across all fisheries	
	Gross FOB revenues - annual total - all fisheries	aggregated across all fisheries	aggregated across all fisheries	
	Finished processed pounds - annual total - all fisheries	aggregated across all fisheries	aggregated across all fisheries	
	Processing labor costs - annual total - all fisheries	aggregated across all fisheries	aggregated across all fisheries	