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Research and program support allocations updated based on administrative fee assessment.

Final Spend Plan for funds appropriated to address the 2019/2020 Bering Sea Tanner crab fishery disaster determination. NOAA Fisheries allocated $12,935,199 for the 2019/2020 Bering Sea Tanner crab fishery disaster. The spend plan informs the federal grant application submitted by Pacific States Marine Fisheries Commission (PSMFC) to NOAA Fisheries and is subject to change based on approval of the final grant.

Process to develop the spend plan: ADF&G posted an initial draft spend plan for public comment in December 2022 and received 5 written comments on the initial plan. ADF&G revised the plan based on public comments and posted a second draft plan for public comment on March 1, 2023. Nine additional comments were received (Appendix 1) and in response, ADF&G is recommending the following revisions:

Research: Projects were selected from the list provided in the second draft of the spend plan for direct funding. These research projects are responsive to the research themes developed by ADF&G, the Bering Sea Fisheries Research Foundation (BSFRF), and public comment.

Processors: Processing companies that recently processed Western Bering Sea Tanner crab (WBT), i.e., 'active processors' were included for direct payment distribution.

Guiding principles for disaster fund distribution: Disbursement of funds is intended to:

1) assist fishery participants harmed by the 2019/2020 Bering Sea Tanner crab fishery disaster, and

2) improve fishery information used to assess and forecast future fishery performance and to develop management approaches that avoid and/or mitigate the impacts of future fishery disasters that cannot be prevented.

Proposed allocations to project categories: The proposed categories and allocations reflect comments received from initial stakeholder input and comments on the first and second draft spend plans.

Proposed categories	Allocation	Estimated funds [a]
Research	10%	$1,111,347
Communities	4.75%	$614,000
Community Development Quota (CDQ) Program [b]	8.51%	$1,101,000
Harvesters	57.72%	$7,465,000
Processors	18.90%	$2,444,000
ADF&G Program Support	0.12%	$15,411
Total	100%	$12,750,758

[a] Additional funds will be allocated to Pacific States Marine Fisheries Commission (PSMFC) to administer the federal grant.

[b] After allocations for research, communities, and administrative support are taken off the top, 10% of the remainder is allocated to CDQ groups; this represents approximately 8.51% of the total available funds.

- Research: The 2019/2020 Bering Sea Tanner crab fishery disaster resulted from undetermined and natural causes which led to low estimated mature male biomass in the eastern and western management areas. These estimates were below thresholds required for a fishery opening during the 2019/2020 season. The relationship between Tanner crab productivity, biomass, and the environment is not well understood but environmental changes and new extremes in sea temperature and ice extent likely play a role in the distribution, growth rate, and natural mortality of Tanner crab.
- Communities: Municipalities and boroughs rely on revenue generated from Bering Sea Tanner crab fishery landings and other economic activities related to the Bering Sea Tanner crab fishery. ADF&G is proposing direct payments to communities meeting all eligibility criteria. ADF&G notes that it is uncertain whether NOAA Fisheries will approve direct payments to communities where Bering Sea Tanner crab are landed. If direct payments are not approved, ADF&G proposes to make funds available to eligible communities for use in managing, repairing, or maintaining infrastructure, services, or habitat that support the Tanner crab fishery in the region using a project-based funding process similar to that used in recent Alaska fishery disasters.
- Western Alaska Community Development Quota (CDQ) Program: Direct payments to CDQ groups meeting all eligibility criteria. CDQ groups share an allocation of the Bering Sea Tanner crab Total Allowable Catch (TAC) and are mandated by statute to provide economic and social benefits to their respective communities from revenues generated by CDQ fishery allocations. ADF&G proposes to distribute funds to CDQ groups in proportion to each group's Bering Sea Tanner crab fishery allocation specified in federal regulations[1].

The remaining funds are proposed to be shared between harvesters and processors based on the historical distribution of revenue from the Non-Binding Price Formula[2] for Tanner crab as reported in the 2018/19 Non-Binding Price Formula Report.

2018/19 Tanner crab - Harvester/Processor sharing based on the Non-Binding Price Formula	
Non-Binding Price Formula	Wholesale price x 0.49767 - 0.1043
Total Allowable Catch	2,439,000
First Wholesale Price (SAFE Report)	$7.83
Expected Ex-vessel value from Formula	$3.79
Recovery	64.3%
Fishery Gross Revenue	$12,279,609
Ex-Vessel Gross Revenue	$9,249,800
Harvester % of Gross	75.33%
Processor % of Gross	24.67%

- Harvesters: Direct payments are proposed to WBT crab quota share (QS) holders, vessel owners, captains and crew who meet all eligibility criteria. Quota share holders will be identified using the National Marine Fisheries Service (NMFS) Restricted Access Management (RAM) database for the 2019/20 WBT crab season. Vessel owners will be identified using the Commercial Fisheries Entry

[1] https://www.federalregister.gov/documents/2006/08/31/06-7326/fisheries-of-the-exclusive-economic-zone-off-alaska-western-alaska-community-development-quota

[2] § 680.20(g)(2)(ii) The Non-Binding Price Formula Report is prepared annually for the Bering Sea Arbitration Organization (harvesters) and the Alaska Crab Processors Arbitration Organization (processors).

Commission (CFEC) vessel license database for 2019. Captain and crew eligibility will be verified based on crew contract or settlement from the 2017/18 and/or 2018/19 season, or an affidavit from the vessel owner or CFEC permit holder. Captains may also be verified based on CFEC permit holder data from fish ticket landings during the 2017/18 and/or 2018/19 season.

- Processors: Direct payments to processor quota share (PQS) holders and active processing companies that meet all eligibility criteria. PQS holders are identified using the NMFS RAM database for the 2019/20 WBT season. Active processing companies are those companies that received landings of WBT during the 2017/18 and/or 2018/19 seasons.
- Program Support: The Alaska Department of Fish and Game proposes to designate funds for staff working on fishery disaster plan development and implementation in coordination with PSMFC.

Proposed allocations and eligibility for disaster relief funds:

Research – ~10% of available funds ($1,111,347): Research funds are allocated to the Bering Sea Fisheries Research Foundation (BSFRF) to support projects that improve available fishery information and help prevent and/or mitigate future fishery disasters. The research projects and budgets are further described in Appendix 2 and are responsive to the research themes described below which were developed in the initial and second draft spend plans. Directing fishery disaster research funds to these projects in the spend plan expedites the administrative process and maximizes the amount of time for investigators to conduct research.

- Refined understanding of terminal molt and growth for Tanner crab stock components east and west of 166° W long., with an emphasis on growth increments at terminal molt.
- Further evaluation of mature male biomass (MMB), exploitation rates, and potential management strategy evaluation work to examine the relationships between MMB, legal size, and industry preferred size on stock dynamics.
- Further evaluation of spatial and temporal dynamics of the eastern/western stock components.
- Movement/distribution shifts as a function of environmental factors (e.g., temperature).
- Understanding the importance of groundfish (e.g., Pacific cod) predation and cannibalism as a function of crab abundance and environmental conditions.

Communities – 4.75% of total funds (~$614,000): Municipalities and boroughs rely on revenue generated from Tanner crab landings and other economic activities related to the Tanner crab fisheries. Based on stakeholder input, ADF&G is proposing direct payments to affected communities that meet the eligibility criterion to mitigate the impacts of the disaster. ADF&G notes that it is uncertain whether NOAA Fisheries will approve direct payments to eligible communities. If direct payments are not approved, ADF&G proposes to make funds available to eligible communities for the purpose of managing, repairing, or maintaining approved infrastructure, services, or habitat that support Tanner crab fisheries in the Bering Sea using a project-based funding process similar to that used in recent Alaska fishery disasters. According to guidance from NOAA Fisheries, fishery disaster funds cannot be used as a match requirement for any other projects.

The following criterion must be met for a community to receive a distribution of funds:

- WBT crab must have been landed in the community during the 2018/19 season based on the port of landing from ADF&G Fish Ticket data.

Disaster funds are proposed to be distributed pro rata to eligible communities based on each community's proportion of the total 2017/18 and 2018/19 pounds of WBT crab landed in all eligible communities. There are four communities where landings of WBT occurred during the 2017/18 and 2018/19 seasons: Dutch Harbor/Unalaska, Akutan, St. Paul, and King Cove.

CDQ Groups – 8.51% of total funds (~$1.10 million): CDQ groups receive, in aggregate, a 10% allocation of the annual WBT crab harvest limit and depend on revenue generated from WBT crab landings to provide economic and social benefits in their respective communities consistent with statutory mandates. Based on initial stakeholder input, ADF&G is proposing direct payments to each CDQ group based on each group's allocation of the WBT crab fishery CDQ allocation in federal regulation and shown in the table below.

CDQ group	Allocation	Estimated amount
Aleutian Pribilof Island Community Development Association	10%	$110,000
Bristol Bay Economic Development Corporation	19%	$209,000
Central Bering Sea Fisherman's Association	19%	$209,000
Coastal Villages Region Fund	17%	$187,000
Norton Sound Economic Development Corporation	18%	$198,000
Yukon Delta Fisheries Development Association	17%	$187,000
Total	**100%**	**$1,100,000**

Harvesters – 57.72% of total funds ($7,465,000)

Based on public comments, ADF&G proposes to allocate harvester funds into three pools: QS holders, vessel owners, and a combined pool for captains and crew. The proposed allocation to QS holders is 31%, which is based on the 2018 median exvessel lease rate. The lease rate is the proportion of exvessel value paid by a harvester to a QS holder for use of individual fishing quota to harvest crab and is reported in Table 3 of the January 2022 economic status report[3] for all Bering Sea Tanner crab quota types. The remaining 69% is proposed to be allocated to vessel owners and captain/crew. The 2017/18 and 2018/19 WBT seasons will be used as eligibility criteria for vessel owners and captains and crew because the WBT fishery was open in the two years immediately preceding the disaster and the 2016/17 season was closed.

- QS Holders – 31% of harvester funds (~$2.3 million). The following criterion must be met for a QS holder to qualify for a direct payment:
    - Must be listed as a QS holder of Catcher Vessel Owner (CVO), Catcher/Processor Owner (CPO), Catcher Vessel Crew (CVC), and/or Catcher/Processor Crew (CPC) quota for WBT in 2019/20.

  Direct payments to QS holders will be distributed pro rata based on each QS holder's proportion of the total QS units of all QS holders who apply and are eligible for QS holder funds. There were 326 individual QS holders of WBT quota for the 2019/20 season.
- Vessel Owners, Captains and Crew – 69% of harvester funds (~$5.1 million). The remaining 69% of funds allocated to harvesters are proposed to be shared between vessel owners and captains and crew

[3] https://meetings.npfmc.org/CommentReview/DownloadFile?p=9e166e8f-4e58-4522-973a-ca074306e42e.pdf&fileName=D7%20Crab%20Economic%20SAFE.pdf

by calculating a vessel-based payment for each vessel meeting all criteria as described below. Vessel-based payments are proposed to be split 70/30 between vessel owners and captains/crew based on the proportion of fishery revenues paid to captains and crew, after deducting lease fees, for the 2018 Tanner crab fishery as reported in the January 2022 economic status report:

2018 Tanner crab Vessel owner and Captain/Crew split	$Million	Revenue split
Bering Sea Tanner (BST) Gross Revenue (Table 1)	$9.79	
BST All Quota Lease Fees (31%, Table 3)	$3.03	
subtotal	$6.76	
Payments to Captains and Crew ($0.61 +$1.44, Table 2)	$2.05	30%
Net Revenue to Vessels	$4.71	70%

The following criteria will be used to determine the vessel-based payments:

1. The vessel must have been used to harvest WBT in the Individual Fishing Quota (IFQ) fishery during either the 2017/18 or 2018/19 season.
2. Total vessel landings of WBT in the IFQ fishery for the 2017/18 and 2018/19 seasons must be greater than 100 pounds.

ADF&G estimates that 35 vessels may be eligible for vessel-based payments based on these criteria.

Vessel-based payments are proposed to be calculated pro rata to each eligible vessel's proportion of the total 2017/18 and 2018/19 pounds of WBT crab, not including deadloss, landed by all eligible vessels.

70% of each eligible vessel's payment is proposed to go to the individual listed as the 2019 vessel owner in the CFEC vessel database.

30% of each eligible vessel's payment is proposed to be shared by the captains and crew who worked on the vessel during the 2017/18 and 2018/19 seasons and who meet all eligibility criteria.

Payments to captains are typically twice the amount of a crew member, so each eligible captain is proposed to receive two 'shares' and each eligible crew member is proposed to receive one 'share' for each season they are eligible for.

In the example below, the vessel met eligibility criteria for both seasons and operates with one captain and four crew members each season. A different captain worked each season and two crew members worked both seasons. The maximum number of captain shares is four, two for each season, and the maximum number of crew shares is two. An individual may qualify on the same vessel for a captain share in one season and a crew share in the other season but may not qualify for both a captain and crew share on the same vessel for the same season.

	Season			Percent of total
	2017/18	2018/19	Shares	Captain/Crew funds
Captain A	X		2	16.7%
Captain B		X	2	16.7%
Crew 1	X		1	8.3%
Crew 2	X	X	2	16.7%
Crew 3	X	X	2	16.7%
Crew 4		X	1	8.3%
Crew 5		X	1	8.3%
Crew 6	X		1	8.3%
		Total	12	100%

The following criteria are proposed for captains and crew to qualify for a direct payment:

1. Captains and crew must have participated in the WBT IFQ fishery on an eligible vessel as defined above for vessel-based payments. Eligibility will be verified based on crew contract, crew settlement, or an affidavit from the vessel owner or CFEC permit holder. Eligibility for captains may also be verified from the CFEC permit information on Fish Tickets.
2. Captains must have held a CFEC T91Q permit for each season they are claiming eligibility and crew must have held a commercial crew license or a CFEC permit for any fishery for each season they are claiming eligibility. These requirements are met by holding a permit or license in 2017 or 2018 for the 2017/18 season and in 2018 or 2019 for the 2018/19 season.

Direct payments to minors are not authorized by the terms of the Federal grant but may be authorized to guardians in the same household on behalf of an eligible minor.

If no eligible captains or crew apply for the 30% portion of a vessel-based payment, the funds are proposed to be shared proportionally among all other eligible captains and crew. These unclaimed funds would be additive to the 30% portion of the vessel-based payment for other captains and crew.

Processors – 18.9% of total funds ($2,444,000)

The processor allocation will be split 50/50 between the Processor Quota Share (PQS) holders and the active processing companies, i.e., those processing companies that process WBT.

The following criterion is proposed for PQS holders to qualify for a direct payment:

- Must be listed as a PQS holder for WBT in 2019/20. Payment distribution for PQS holders will be pro rata based on the total PQS units of all PQS holders who apply and are eligible for QS holder funds. There were 14 individual PQS holders during the 2019/20 WBT season.

The following criterion is proposed for active processors to qualify for a direct payment:

- Based on fish ticket records, WBT must have been delivered to a processing plant owned by the processing company during the 2017/18 and/or 2018/19 seasons. Payment distribution for active processing companies is pro rata based on each company's proportion of the total 2017/18 and 2018/19 pounds of WBT crab, not including deadloss, delivered to all processing companies. There were six active processing companies during the 2017/18 and 2018/19 seasons.

Program Support – 0.12% of total funds ($15,411): ADF&G is proposing to allocate funds to partially cover salary and benefits for a Program Coordinator who helps manage the fishery disaster program on behalf of the State of Alaska.

Appendix 2. Bering Sea Tanner Crab (*bairdi*) Fishery Disaster Research Projects.

This appendix provides a summary of two proposed project components; one for *bairdi* research priorities to be included in PhD chapters by a graduate student in coordination with BSFRF, and the second as other direct BSFRF projects that address different priorities separately. The first section below covers the proposed projects (PhD chapters) which cover 3 of 9 priorities, and the second direct BSFRF proposed projects cover 2 additional of the 9 priorities. The research priorities identified in the second draft of the spend plan were as follows:

1. Refined understanding of terminal molt and growth for Tanner crab stock components east and west of 166° W long., with an emphasis on growth increments at terminal molt.
2. Further evaluation of mature male biomass (MMB), exploitation rates, and potential management strategy evaluation work to examine the relationships between MMB, legal size, and industry preferred size on stock dynamics.
3. Evaluation of juvenile bottlenecks related to the recent apparent lack of recruitment to the legal-size class.
4. Examine the relationship between spatiotemporal changes in fishing-induced habitat disturbance and Tanner crab abundance and spatial distribution.
5. Further evaluation of spatial and temporal dynamics of the eastern/western stock components.
6. Movement/distribution shifts as a function of environmental factors (e.g., temperature).
7. Understanding the importance of groundfish (e.g., Pacific cod) predation and cannibalism as a function of crab abundance and environmental conditions.
8. The relationship between snow and Tanner crab stock status, including the dynamic of hybridization, with emphasis on Tanner crab status in response to the snow crab collapse.
9. Gear modifications to reduce incidental catch of female/small male crab.

PhD Related Projects

Potential Title: Eat or be eaten: an exploration of *Chionoecetes bairdi* fishing mortality, natural mortality, and spatial management considerations.

Executive Summary

Population dynamics of Tanner crabs (*Chionoecetes* spp.) are difficult to understand, and uncertainties around life history and ecosystem-level interactions, including predation, cannibalism, and spatial variability in biology and fishing effort, pose substantial challenges to direct exploitation and conservation management. The pronounced cyclic nature of the Eastern and Western Tanner crab (*Chionoecetes bairdi*) stock status has led to frequently closed seasons posing significant economic challenges for the crab industry. The 2015/16 fishery marked a two-decade peak in catches of approximately 20 million pounds and was immediately followed by a season closure in 2016/17. Following the 2016/17 season closure there were limited harvesting opportunities in the west area in 2017/18 and 2018/19. The 2019/20 season was closed in both areas, prompting a fishery disaster determination. This substantial decline in total allowable catch (TAC) initiated a management strategy evaluation exploring harvest control rule options for Tanner crab that resulted in an update to the *bairdi* harvest strategy for the State of Alaska in March 2020 (Heller-Shipley *et al.*, 2021). The update has allowed for seasons to be open but at relatively low levels. While the declines and variability in open seasons and catch have led to some positive steps for managers, the economic impacts to Tanner crab stakeholders have also qualified them for fishery disaster funds, which includes funds designated for research specific to Tanner crab.

This research will be conducted through the BSFRF and support capacity building for a graduate student seeking to specialize in size-structured population dynamics pertaining to the assessment of commercial crab in Alaska. The following dissertation chapters seek to connect Spending Plan research priorities to projects that could inform management actions for *C. bairdi* and other Alaskan crab fisheries in a rapidly changing climate.

In general, chapters are broken down into two categories, 1) related to or informing management decisions, and 2) informing parameters that could be broadly used by assessment authors and fishery managers. Chapters 1, 2, and 3 have direct management utility, while 4 and 5, explore life history uncertainties that could play a role in mature male biomass through recruitment controls, natural mortality assumptions, and expectations for *Chionoecetes* fisheries as the climate continues to warm.

Proposed chapters/projects for *C. bairdi*:

1) Tanner crab MSE Lite

   Category: Informing Management

   This chapter would fulfil research priority #2, which focuses on using an MSE for MMB, exploitation, and male *bairdi* size issues. This work will be built off of the Tanner crab management strategy evaluation (MSE) conducted in 2020 for a master's thesis (Heller-Shipley *et al.,* 2021), where a suite of harvest control rules was simulated using the federally approved Tanner crab assessment model and results were used to update the State of Alaska Tanner's crab harvest strategy. This chapter would constitute taking the results of the full MSE, which uses a complex estimation model, and compare harvest control rule scenario outputs to a "lite" version using a simplified estimation model, generating male and female biomasses from auto-correlated log-normal distributions. The estimation model comparisons will focus on the magnitude of difference in performance metrics for each approach, informing MSE methodologies. When using a complex estimation model, model runs are time consuming and computing intensive, which can lead to budgetary and schedule difficulties for time sensitive projects. Simple estimations models can be run efficiently with limited computing power, but ideally should produce outputs that reflect complex estimation methods. Discerning the appropriateness of estimation model methods will help define best practices for future model-based investigations of Alaskan crab stocks.

2) Considerations for *Chionoecetes* Reference Point: F_{OFL}

   Category: Informing Management

   This chapter will also fulfill research priority #2, with a specific focus on reference points and the dynamics of exploitation. In May 2022, at the North Pacific Fishery Management Council's (NPFMC) Crab Plan Team (CPT) meeting, a presentation (lead by Dr. M. Dorn) focused on the reference points and associated assumptions used in crab management, and possible reconsiderations for the metric F_{OFL}, the instantaneous fishing mortality used in the calculation of the overfishing limit. F_{OFL} seeks to inform F_{MSY}, the instantaneous fishing mortality producing maximum sustainable yield, and the chosen proxy is to be 35% of spawning biomass. This proxy was based on groundfish life history and management (Clark 1991) that was then applied to crab stocks. Crab have substantially different life history strategies, and fishing targets large males only, and there are questions to the appropriateness of the proxy $F_{35\%}$, particularly for *Chionoecetes* spp. Some of the suggested alternatives include:

   - evaluating ranges of F_{OFL} proxies,

- switching crab from a tier 3 to tier 4 designation where F_{OFL}=M, and B_{MSY} is the mean biomass over a specified period,
- using functional maturity instead of morphometric maturity or a stepped maturity approach when determining spawning biomass when defining F_{MSY},
- or partitioning unfished biomass into categories (small, medium, large) to spread fishing pressure over more size classes.

This project would conduct a yield-per-recruit style analysis exploring these, and other potential F_{OFL} designations and how different proxies may retroactively impact how the fisheries are prosecuted, and what fisheries could look like under projected scenarios. The focus of this chapter would be Tanner crab, and this work would be presented to managers to demonstrate how changing the F_{OFL} proxy could impact the stock and management.

3) Eastern and Western *bairdi* District Split

Category: Informing Management

This chapter will fulfil research priority #5: "Further evaluation of spatial and temporal dynamics of the eastern/western stock components." The federal assessment model defines Eastern Bering Sea Tanner crab as a single stock; however, the state of Alaska defines two directed fisheries, designated as the eastern and western districts, one on either side of 166°W. This split is based on apparent eastern and western growth rates reflected in average sizes of mature male and female crab, likely explained by environmental influences (Somerton 1981). Two state districts result in two TAC calculations, the combined total not to exceed the federal ABC. These TACs are computed in the fishery harvest control rule, outlined in the ADFG harvest strategy. In 2011 an update to the Tanner crab harvest strategy was implemented which considered district level splits in assumptions of maturity (Zheng and Pengilly 2011), but notably "No evidence supports partitioning the unit stock into discrete, non-interbreeding, non-mixing sub-populations which can be assessed and managed separately" (Rugelo and Turnock 2010). Questions on the validity of environmental influences on maturity designation necessitating a district split remain, especially as species distributions continue to change with higher prevalence of marine heatwaves and warmer conditions. This chapter would use time series analysis methods for the two areas, using summer survey data from the annual Eastern Bering Sea Bottom Trawl Survey conducted by the National Marine Fisheries Service and BSFRF to 1) review the considerations for the district separation for *bairdi*, 2) explore methods of area management in other parts of the world and 3) re-assess the eastern Bering Sea Tanner crab district split approach and it's appropriateness in a changing climate.

4) Add size-structure population models to CEATTLE for exploration of temperature-based cod predation rates on *Chionoecetes*

Category: Informing Parameters (M)

This chapter would fulfil research priority #7, "Understanding the importance of groundfish (e.g., Pacific cod) predation and cannibalism as a function of crab abundance and environmental conditions." It is established that groundfish, particularly Pacific cod (*Gadus macrocephalus*) predate on *Chionoecetes* species, but there is much uncertainty surrounding the rates of predation and the impact on *Chionoecetes* populations as the climate warms and metabolic demands of groundfish change. CEATTLE, is a multi-species age-structured assessment model used for groundfish in the Bering Sea and Gulf of Alaska (Holsman *et al.,* 2015; Adams *et al*., 2022) and

stands for Climate-Enhanced, Age-based model with Temperature-specific Trophic Linkages and Energetics. While there are multiple groundfish stocks parameterized in the model, with methods for exploring predation, there is not yet a way to include stocks assessed using size-structure. The first part of this chapter would be to add a size-structure utility into CEATTLE for the Bering Sea to incorporate a generalized *Chionoecetes* model, whereas the second part would consider temperature-based mortality estimates for *Chionoecetes* by groundfish predators (cod) in an MSE-style exercise, as some evidence suggests that cod could be consuming more crab as the climate warms and species distributions change with increased crab and cod spatial overlap (Holt *et al*., 2021).

5) *Chionoecetes* Cannibalism

   Category: Informing Parameters (M)

   This chapter would also fulfil research priority #7, "Understanding the importance of groundfish (e.g., Pacific cod) predation and cannibalism as a function of crab abundance and environmental conditions." It is established that many crustaceans are cannibalistic, but the specific mechanism and rates of cannibalism are not well understood, especially in a changing climate. Laboratory studies suggest that intercohort predation is a more significant source of mortality compared to intracohort predation (Sainte-Marie and Lafrance 2002), and anecdotal accounts of collection efforts for juvenile *Chionoecetes* spp. support the notion that cannibalism occurs between different cohorts when molting. As the Bering Sea warms, there are uncertainties on possible changes in bioenergetics and spatial distribution of juvenile crab and whether this could impact rates of cannibalism contributing to recruitment bottlenecking. This two-part study would have a laboratory component, considering cannibalism rates between different size classes of mature and juvenile crab with temperature and density controls. These data, along with available bioenergetic based mortality and standard assessment data would then be used in a modeling exercise using the new size-structured functionality of CEATTLE in an MSE-style exploration of cannibalism assumptions. This could give insight to assumptions about natural mortality and how it may change with warming waters.

Budget Summary

These projects are expected to take an estimated three to four years for completion, with each project accounting for a portion of support from *bairdi* disaster relief research funds. Some project details are likely to change, but the general scope is expected to be similar to those outlined. It is estimated that the total scope of the budget will cover three years of PhD level work, with expenses estimated to be approximately $480,000 in total. The graduate student, Madison Heller-Shipley, is in the final quarter of her first year at the University of Washington in Dr. André Punt's lab. Ms. Heller-Shipley has been working with the BSFRF for nine years, conducted the MSE for the *bairdi* harvest strategy exploration, which updated the harvest strategy in 2020, and has the necessary expertise to pursue meaningful work supporting *bairdi* research priorities. She will coordinate with university, federal, state, and industry members for guidance and support, and pursue work that is of direct utility for the betterment of crab management in Alaska.

Table 1: Breakdown of total expense amounts. Further details of labor and cost structure will be provided separately.

Year	Chapter Priorities	Estimated Costs
2023	Chapter 1, Chapter 3	$20,000
2024	Chapter 1, Chapter 2, Chapter 3	$140,000
2025	Chapter 2, Chapter 4	$140,000
2026	Chapter 4 and Chapter 5	$140,000
2027	Wrapping up, defending	$40,000
TOTAL		$480,000

Direct BSFRF Proposed Projects

BSFRF Growth Charters – Collection of Pre-molt Tanner Crab Nearing Terminal Molt

Category: Improving parameters (growth), and informing management

This project would address research priority #1 to improve the understanding of adult *bairdi* growth. The understanding of growth in Bering Sea *bairdi* and snow crabs is informed by a mix of information from the Bering Sea and Gulf of Alaska (Kodiak). Generally, Bering Sea measurements of growth per molt for *bairdi* are lacking across a broad range of sizes for both male and female *bairdi*. More specifically, samples are absent or low for growth increments that inform sizes for male and female *bairdi* through terminal molt sizes. The Bering Sea *bairdi* stock is managed as a single stock spanning two districts (East and West of 166 degrees W longitude). Body size (carapace width) of mature males is smaller in the west compared to the east, the two districts are managed for different sizes of mature male biomass but a uniform retention size. In recent seasons, fishing efforts have occurred near the East/West district boundary. Overall understanding of stock structure would improve with better data available for differential growth near terminal molt sizes especially across district boundaries. BSFRF has collaborated with NOAA and ADF&G to complete a number of Chionoecetes spp. growth collection charters (2012, 2015, 2016, 2017, and 2019). For this proposed work, two spring (early April) charters are planned which would be similar in scope and scale to prior *bairdi* growth charters. Fishing vessels (catcher trawlers) would be chartered to transit to *bairdi* grounds for sampling (Nephrops trawl) for retaining live pre-molt crab to monitor growth. Estimated project costs are $150,000 annually for a total of this proposed project of $300,000. These costs include daily charter rate, fuel, gear, vessel provisioning, and scientific party labor.

BSFRF Collaborative Movement and Tagging for East and West *Bairdi*

Category: Informing management

This project would address research priority #6 to improve the understanding of adult *bairdi* movement and overall stock structure. Successful tagging research for Bering Sea *bairdi* has been limited but some recent tagging near areas closed to fishing (Pribilof Islands “home plate”) has shown that *bairdi* movement and its timing is important for stock management. Seasonal movement of Tanner crab in and across both districts would be improved through specific and opportunistic tagging projects. Further, the overall understanding of movement near boundaries and closure areas needs further research as a function of temperature and related changes in the ecosystem. The proposed work would procure 150

satellite tags (Wildlife Computers, ~ $250,000) to be available for tagging mature *bairdi* crab. Initial tagging would likely begin during existing or currently planned research (NMFS summer surveys, growth charters, cost recovery, or other fishing). A second component of the *bairdi* movement and tagging work would be a specific charter(s) of vessels to sample specified grounds for tagging of mature male and female *bairdi*, likely near the East/West district boundary. This sampling would likely occur in coordination of other activities to connect, if possible, the current season understanding of distribution (summer survey and directed fishing distribution patterns) to better inform the general understanding of movement.

Total Proposed Project Budget

Year	**PhD Chapter Priorities**	**Estimated Costs**
2023	Chapter 1, Chapter 3	$20,000
2024	Chapter 1, Chapter 2, Chapter 3	$140,000
2025	Chapter 2, Chapter 4	$140,000
2026	Chapter 4 and Chapter 5	$140,000
2027	Wrapping up, defending	$40,000
SUBTOTAL		$480,000
Year	Direct BSFRF Growth Project	Estimated Costs
2024	Growth Charter Yr-1	$150,000
2025	Growth Charter Yr2	$150,000
SUBTOTAL		$300,000
Year	BSFRF *Bairdi* Tagging Projects	Estimated Costs
2023	Tag Purchase (WC, Inc. 150 tags)	$250,000
2024-2025	Tagging Charter (~22 total days)	$260,000
SUBTOTAL		$510,000
GRAND TOTAL	Proposed Project Total	$1,290,000

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CITY OF UNALASKA
P.O. BOX 610
UNALASKA, ALASKA 99685-0610
(907) 581-1251 FAX (907) 581-1417

March 6, 2023

Karla Bush, Extended Jurisdiction Manager
Alaska Department of Fish and Game
PO Box 115526
Juneau, Alaska 99811-5526

RE: Federal Fishery Disaster Relief ADFG Revised Allocation Spend Plan for Bering Sea Tanner Crab Fishery.

Karla:

The City of Unalaska has been the State of Alaska's largest crab processing community for over fifty years. Unalaska has been heavily impacted by the crash of many of our historic Bering Sea Crab stocks. The allocation reductions and off-season closures have had a terrible financial impact on the crab industry, harvesters, processors, CDQ, groups and crab-dependent communities of Southwest Alaska. The disaster allocation of $12.9 million will not make any sector whole. Therefore, Unalaska supports that the community's percentage stay at 4.75% off the top of the $12.97 million, which would be $616,462.03 allocated between the cities of Unalaska, Akutan, King Cove, and St. Paul. This small amount of funding would help offset losses incurred in fish, sales, and support sector tax revenues. I would also point out that Unalaska traditionally processes the largest amount of Bering Sea Tanner crab in Alaska well over 50% of the allocations since Unalaska has three processors in the community that process Bering Sea Tanner Crab.

Naturally, Unalaska would support the direct payments to the communities where Bering Sea Tanner Crab were landed option, but if that option is not available. Unalaska would support ADFG recommendation in the revised Spend Plan section for communities that ADFG would make funds available to communities for use managing, repairing, or maintaining infrastructure services or habitat that supports Tanner crab fishery in the region using project-based funding process, like what has been used in recent Alaska Fishery disasters.

We would like to thank the Alaska Department of Fish and Game for considering the City of Unalaska's comments on the Bering Sea Tanner Crab Revised Spend Plan as it pertains to communities' section of the plan.

Sincerely,

Vincent M. Tutiakoff Sr.

Vincent Tutiakoff Sr.
Mayor
City of Unalaska

CC: City Manager Chris Hladick,
Unalaska City Council Members,

BSFRF
Bering Sea Fisheries Research Foundation

BERING SEA FISHERIES RESEARCH FOUNDATION
23929 22ND DR SE BOTHELL, WA. 98021
FORGING COOPERATIVE RESEARCH PARTNERSHIPS IN THE BERING SEA

March 14, 2023

Ms. Karla Bush
Extended Jurisdiction Program Manager
Alaska Department of Fish and Game
P.O. Box 115526
Juneau, AK 99811

RE: Comments on 2019/20 Bering Sea Tanner Disaster Relief Spend Plan – Second Draft

Dear Karla,

We wanted to comment briefly on the spending plan details for research and we are pleased to see the research strategy and plans for funding some specific research projects/areas is continuing to develop. We agree with the updated research priorities (9) identified in the latest update and we have no further suggestions for reprioritizing this list at this time as they appear in the update and below.

1. Refined understanding of terminal molt and growth for Tanner crab stock components east and west of 166° W long., with an emphasis on growth increments at terminal molt.
2. Further evaluation of mature male biomass (MMB), exploitation rates, and potential management strategy evaluation work to examine the relationships between MMB, legal size, and industry preferred size on stock dynamics.
3. Evaluation of juvenile bottlenecks related to the recent apparent lack of recruitment to the legal-size class.
4. Examine the relationship between spatiotemporal changes in fishing-induced habitat disturbance and Tanner crab abundance and spatial distribution.
5. Further evaluation of spatial and temporal dynamics of the eastern/western stock components.
6. Movement/distribution shifts as a function of environmental factors (e.g., temperature).
7. Understanding the importance of groundfish (e.g., Pacific cod) predation and cannibalism as a function of crab abundance and environmental conditions.
8. The relationship between snow and Tanner crab stock status, including the dynamic of hybridization, with emphasis on Tanner crab status in response to the snow crab collapse.
9. Gear modifications to reduce incidental catch of female/small male crab.

We look forward to further opportunities to refine and specify details for projects for high priority bairdi research as part of the next steps in the BST spending plan review. Our plans are to coordinate with you and our research partners for further input by the end of this month.

Thank you for your time and consideration of our input.

Sincerely,

BERING SEA FISHERIES RESEARCH FOUNDATION
Scott Goodman
Executive Director

March 15, 2023

Alaska Department of Fish and Game
Attn: Karla Bush, Extended Jurisdiction Program Manager
P.O. Box 115526
Juneau, Alaska 99811-5526

Re: Comment on the Second Draft Spend Plan for the 2019/2020 Eastern Bering Sea Tanner Crab Fishery Disaster Declaration

Dear Ms. Bush:

The Alaska Bering Sea Crabbers (ABSC) is a trade association representing the majority of independent crab harvesters who commercially fish for king, snow (opilio), and Tanner (bairdi) crab with pot gear in the Bering Sea and Aleutian Islands Crab Rationalization Program. We appreciate the opportunity to comment on the second draft spend plan for the 2019/2020 Eastern Bering Sea Tanner crab fishery disaster declaration.

ABSC supports the recommendations outlined in the Alaska Department of Fish and Game's (ADFG) initial draft spend plan, except as noted below. We appreciate ADFG's work to move this package quickly and their considerations that base sharing arrangements largely on the Crab Rationalization Program structure. Below are comments specific to the second draft spend plan.

HARVESTERS

For all harvester categories, ABSC recommends that all eligible applicants are determined among the pool of applicants and then any leftover funds in a pool of money are re-distributed pro-rata among those eligible applicants within each harvester category. This is clearly stated for captains and crew in ADFG's second draft. We recommend it for each harvester category in cases where there are unclaimed funds. In addition, we ask for clarity during the application process for how spouses or family members of eligible deceased harvesters will be considered and what documents need to be provided. And we ask for clarity on how vessel and quota sales will be handled.

Quota share (QS) holders – ADFG requested comments on whether to establish a minimum holding of QS units, such as 25,000 units, to qualify for a direct payment or a minimum direct payment amount, such as $300, to reduce administrative costs and burden and to promote greater efficiency in the process to distribute funds. While ABSC respects ADFG's desire to reduce administrative costs and increase efficiency, we do not support a minimum threshold. If someone would only be getting a dollar or $100 in disaster funds, they likely would not apply in the first place. If they do apply, then that amount must be meaningful to them and they should have access to it.

Vessels - To provide further clarity for the harvester vessel share on total landings from the 2017/18 and 2018/19 combined seasons, our understanding is that those should be for IFQ landings only and should not include community development quota (CDQ) landings. Vessels (and captains and crew) with CDQ landings would get a share of the disaster funds provided to CDQ entities.

Vessel versus Captains/Crew split – ABSC agrees with the 70/30 split as proposed in the draft spend plan with 70% to vessels and 30% to captains/crew "based on the proportion of fishery revenues paid to captains and crew. After deducting lease fees, for the 2018 Tanner crab fishery as reported in the January 2022 economic status report." This represents the industry average for those sharing arrangements. ABSC notes that we heard from several harvesters that a 60/40 split is more representative for their bairdi operations. For vessels where that is the case, it was noted that if 70/30 is selected, those vessels where 60/40 is more reflective could pass on part of their disaster payout (i.e., the extra 10%) to their captains/crew.

RESEARCH

ABSC continues to support 2% for bairdi research given other sources for crab research funding with no other government relief and funding options for harmed harvesters other than loans. However, we understand the need for and fully support further research to help avoid future fishery disasters. ABSC supports the second draft spend plan recommended approach to use a non-competitive bid process for research funds. ABSC continues to recommend as much research funds as possible be provided to the Bering Sea Fisheries Research Foundation (BSFRF) to lead and coordinate Tanner crab research with agency and academic partners. BSFRF is best suited to receive the research funds and coordinate collaborative research in a timely manner, following the Tanner research priorities outlined in the spend plan. In addition, providing the research funds through BSFRF further mitigates economic impacts on harvesters and processors that fund that research organization.

ABSC appreciates the list of potential research projects provided in the second draft spend plan and appreciates that ADFG will coordinate with BSFRF and agency scientists on the final list of research priorities. ABSC supports the list of research as prioritized and adds that we'd like to see consideration of pot surveys for Bering Sea crab stocks.

CONSIDERATIONS FOR THE UPCOMING KING AND SNOW CRAB DISASTER SPEND PLAN

ABSC recognizes that the 2019/20 Bering Sea bairdi fishery disaster spend plan will likely create a roadmap for the upcoming, larger 2021/22 and 2022/23 Bristol Bay red king crab and Bering Sea snow crab fishery disaster spend plan. During internal discussions with harvesters, we see additional considerations that may need to be addressed for the king/snow crab spend plan. In the interest of efficiency to process the 2019/20 bairdi spend plan as fast as possible to provide some much-needed financial relief for crabbers and because it will not be a large sum of money when it gets to the individual level, we are not recommending these changes be made for the bairdi spend plan.

We expect that the king/snow crab spend plan will use the latest fishery and economic data specific to those fisheries, including quota lease fees and vessel versus captains/crew sharing. In addition, we think there should be further work around sharing among captains and crew. For example, if vessel A had 80% of the fishery landings and vessel B had 20%. The captains and crew from vessel A should get 80% of the captain/crew pool of funds. Further, within the captain/crew funds, we'd like to see further work around how to share that in a way that reflects true participation. For example, if a crew member only fished 1 trip versus a crew that fished 2 seasons, paying those crew based on their crew settlements would be more reflective of actual participation than the point or "shares" system used for the bairdi spend plan. Finally, in future fishery disaster spend plans, some consideration should be given to any overages in the fishery and how those are handled in the calculations.

Thank you for your work on the bairdi spend plan and for considering our comments.

Sincerely,

Jamie Goen
Executive Director
Alaska Bering Sea Crabbers

W170°

N57°

Central Bering Sea Fishermen's Association

P.O. Box 288 | Saint Paul Island, Alaska 99660 | Phone: 907.546.2597 | Fax: 907.546.2450 | cbsfa.com

March 13, 2023

Alaska Department of Fish & Game
Attn: Karla Bush
P.O. Box 115526
Juneau, Alaska 99811-5526

Re: Second Draft of Spend Plan for Bering Sea Tanner Crab 2019-20 Fishery Disaster

Dear Ms. Bush,

The Central Bering Sea Fishermen's Association (CBSFA) would like to express thanks to the Alaska Department of Fish and Game (ADFG) for the second draft of the proposed Spend Plan to address the Bering Sea Tanner Crab 2019-20 (Tanner crab) fishery disaster determination. This draft is particularly responsive to public comments from the crab industry and crab-dependent communities, and if distribution occurs according to the plan, CBSFA and communities such as Saint Paul will benefit directly.

CBSFA is the Community Development Quota (CDQ) group for Saint Paul Island. Due in part to Saint Paul's proximity to the Bering Sea's crab resources, CBSFA is allocated significant percentages of the total Bering Sea crab resources, including Bering Sea tanner crab, that are set aside for the CDQ Program, and has made additional investments in several species of crab harvesting and processing quota.

In addition, Saint Paul Island has been one of Alaska's primary crab processing locations since the 1990's. Although Saint Paul Island's reliance on Tanner crab is limited, Saint Paul has been a participant in this fishery. The cumulative impact of the recent crab fishery closures – tanner crab in 2019-20, Bristol Bay red king crab in 2021 and 2022, and the Bering Sea snow crab fishery in 2022-23 – has been devastating to our unique Unangan community.

We observe and applaud the two major changes proposed in this spend plan in response to public comments:

First, regarding communities, ADFG is proposing direct payment to affected communities such as Saint Paul. Cautioning that it is not certain this will be allowed by NOAA, the agency states that if direct payment is not permitted, they will make funds available to communities for use in managing, repairing or maintaining infrastructure.

CBSFA appreciates this commitment to coastal communities. As the crab industry and dependent communities seek to rebuild and restore iconic crab fisheries, distributions supported by the State of Alaska will enable the maintenance of critical community infrastructure. Communities affected by a fishery disaster must be able to "keep the lights on" and replace lost municipal revenues that are normally used to provide essential municipal services, or else they will wither away, lose population, and be further impaired in their ability to use disaster funds to respond to the fishery disaster -- either through infrastructure investments or other projects.

Second, ADFG is proposing a non-competitive process for use of the 10% allocated to crab research. The specific funded research projects will be identified in the final spend plan, in cooperation with the Bering Sea Fisheries Research Foundation (BSFRF), on whose Board CBSFA has a seat. This is a good way to get research funds into the water faster and with less overhead, and on projects identified by the industry and BSFRF as key to rebuilding. A couple of new research priorities have been added and the order of prioritization was set — all a result of public comment.

Understanding the causes of the declines of various crab species, including Tanner crab, will be critical to implement responsive fisheries management policies.

In summary, CBSFA agrees with the proposed allocation of funds from the tanner crab disaster. However, we agree with the City of Saint Paul comments concerning the 2021-22 and 2022-23 snow crab and BBRKC fisheries, for which fishery disaster determinations were announced on December 16, 2022. The City will be proposing a different formula for those monies that is reflective of its near total dependence. Unlike other crab dependent communities which have more diversified economies and mixed fisheries portfolios, Saint Paul Island is greatly dependent on the snow crab fishery. The relative dependence of crab dependent communities on the snow and BBRKC fisheries will therefore be an important consideration for Saint Paul in future spend plans.

CBSFA appreciates ADFG's work in the development of the Tanner Crab Spend Plan as well as its broader efforts in support of crab dependent communities and other fishery stakeholders affected by recent fishery disasters.

Sincerely,

Phillip Lestenkof, President
Central Bering Sea Fishermen's Association

CITY OF SAINT PAUL
ALASKA

March 15, 2023

Alaska Department of Fish & Game
Attn: Karla Bush
P.O. Box 115526
Juneau, Alaska 99811-5526

Re: Second Draft of Spend Plan for Bering Sea Tanner Crab 2019-20 Fishery Disaster

Dear Ms. Bush,

On behalf of the City of Saint Paul (City), I wanted to thank the Alaska Department of Fish and Game (ADF&G) for the second draft of the proposed Spend Plan to address the Bering Sea Tanner Crab 2019-20 (Tanner crab) fishery disaster determination. This draft contains improvements that are particularly important to communities such Saint Paul.

The City agrees with the proposed categories and allocations, including the 4.75% to be allocated to communities on a pro-rata basis based on the location of the crab landings and average pounds processed in each. The City considers this to be a fair distribution of the disaster funds. The City is also supportive of the 10% allocation being proposed for various listed research themes. Understanding the causes of the declines of various crab species including the Tanner crab, will be critical to implement better fisheries management policies.

Most importantly, though, the City supports the ADF&G proposal that direct payments be provided to communities that meet eligibility criteria. Communities affected by a fishery disaster must be able to "keep the lights on" and replace lost municipal revenues that are normally used to provide essential municipal services, or else they will wither away, lose population, and be further impaired in their ability to use disaster funds to respond to the fishery disaster -- either through infrastructure investments or other projects.

Determinations of commercial fishery failures and criteria for uses of disaster relief are made pursuant to the provisions of MSA Section 312(a).[1] In addition, the National Marine Fisheries Service (NMFS) issued a policy on December 20, 202, providing further guidance on criteria and uses of disaster funds (see attached). It must be noted that neither the MSA Statute, nor the relevant

[1] 16 U.S.C. 1861a**,** states in the relevant section that: (2) Upon the determination under paragraph (1) that there is a commercial fishery failure, the Secretary is authorized to make sums available to be used by the affected State, fishing community, or by the Secretary in cooperation with the affected State or fishing community for assessing the economic and social effects of the commercial fishery failure, or any activity that the Secretary determines is appropriate to restore the fishery or prevent a similar failure in the future and to assist a fishing community affected by such failure **[emphasis added]**. Before making funds available for an activity authorized under this section, the Secretary shall make a determination that such activity will not expand the size or scope of the commercial fishery failure in that fishery or into other fisheries or other geographic regions.

NMFS regulations or policy guidance contain limitations on direct payments to communities.[2] In addition to being unfair, inequitable, and legally questionable, such limitations would be counterproductive to the spirit and objectives of Section 312(a) regarding assistance communities affected by fishery disasters.

Regardless, Congress provided additional clarity on the matter in the Consolidated Appropriations Act of 2023, which amended various provisions of Section 312 and spelled out eligible uses for the use of disaster funds.[3] These provisions unequivocally allow direct assistance to a fishing community.

As has been noted in earlier submissions, Saint Paul Island's economy is largely dependent on the activities of the Bering Sea's commercial crab fisheries. The City derives fishery landing taxes and other fees associated with these activities. Revenues from fisheries taxes in turn constitute approximately 60% of the City's general fund revenues, which support essential municipal operations and services.

Although Saint Paul Island's reliance on Tanner crab is limited, Saint Paul has been a participant in this fishery. However, concerning the 2021-22 and 2022-23 snow crab and BBRKC fisheries, for which fishery disaster determinations were announced on December 16, 2022, the City will be proposing a different formula that is reflective of its near total dependence. Unlike other crab dependent communities which have more diversified economies and mixed fisheries portfolios, Saint Paul Island is almost entirely dependent on the snow crab fishery. The relative dependence of crab dependent communities on the snow and BBRKC fisheries will therefore be an important consideration for the City in weighing in on future spend plans.

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[2] Representatives for the City and the Central Bering Sea Fishermen's Association (CBSFA) held meetings with NMFS representatives in DC and Juneau on November 10, 2022, who confirmed that there were no such limitations on direct payments to communities in NMFS policies and regulations. The limitation appears to come from the Office of Management and Budget (OMB). The City reached out to OMB on December 9 and 14, 2022, but was sent back to NMFS for guidance and never got a substantive response from OMB.

[3] https://www.congress.gov/117/bills/hr2617/BILLS-117hr2617enr.pdf

HR 2617 or the Consolidated Appropriations Act of 2023 states in the relevant section that:

''(F) DISBURSAL OF FUNDS.—
''(i) AVAILABILITY.—Funds shall be made available to grantees not later than 90 days after the date the Secretary receives a complete spend plan.
''(ii) METHOD.—The Secretary may provide an allocation of funds under this subsection in the form of a grant, direct payment, cooperative agreement, loan, or contract. '
'(iii) ELIGIBLE USES.— ''(I) IN GENERAL.—Funds allocated for fishery resources disasters under this subsection shall restore the fishery affected by such a disaster, prevent a similar disaster in the future, or assist the affected fishing community, and shall prioritize the following uses, which are not in order of priority: ''(aa) Habitat conservation and restoration and other activities, including scientific research, that reduce adverse impacts to the fishery or improve understanding of the affected species or its ecosystem. ''(bb) The collection of fishery information and other activities that improve management of the affected fishery. ''(cc) In a commercial fishery, capacity reduction and other activities that improve management of fishing effort, including funds to offset budgetary costs to refinance a Federal fishing capacity reduction loan or to repay the principal of a Federal fishing capacity reduction loan. ''(dd) Developing, repairing, or improving fishery-related public infrastructure. ''(ee) Direct assistance to a person, fishing community (including assistance for lost fisheries resource levies) **[emphasis added]** or a business to alleviate economic loss incurred as a direct result of a fishery resource disaster, particularly when affected by a circumstance described in paragraph (5)(D) or by negative impacts to subsistence or Indian Tribe ceremonial fishing opportunity.

To conclude, the City appreciates ADF&G's work in the development of the Tanner Crab Spend Plan as well as its broader efforts in support of crab dependent communities and other fishery stakeholders affected by recent fishery disasters.

The City remains available for any questions or feedback regarding its comments.

Sincerely,

Phillip A. Zavadil, City Manager

Cc. Saint Paul City Council
Phillip Lestenkof, President, Central Bering Sea Fishermen's Association

Bush, Karla L (DFG)

From: Tacho Camacho Castillo
Sent: Wednesday, March 15, 2023 7:35 AM
To: DFG, ComFisheriesDisasters (DFG sponsored)
Subject: Crew and Vessel sharing

The going rate back in 2019 was 60-40 . Vessels got 60 percent of the profit of catch and 40 percent went to the crew . I feel like that would be fair .

- Miguel Camacho Castillo
Sent from my iPhone

Bush, Karla L (DFG)

From: Mikal Mathisen
Sent: Wednesday, March 8, 2023 8:52 AM
To: DFG, ComFisheriesDisasters (DFG sponsored)
Subject: Harvester share of tanner crab relief fund

I am in agreement on giving QS holders 31% of the harvester share. We have generally paid a 30% lease rate on tanner crab, but 35% is not uncommon.

I am in disagreement on the vessel/crew split of the remaining harvester fund. I have over 30 years in the Bering Sea crab industry as a captain or crew member and the standard vessel/crew split is 60% to the boat and 40% to the captain/crew. The existing draft plan is shorting the captains and crew by 10%.

Thank you

Mikal Mathisen

March 16, 2023

Ms. Karla Bush
ADF&G
PO Box 115526
Juneau, Alaska 99811-5526

Re: 2019/2020 Bering Sea Tanner Crab Disaster Spend Plan

Dear Karla,

I am an initial recipient of Processor Quota Shares ("PQS") under the BSAI Crab program. Since that first season, I have also leased and managed IPQ from other PQS holders; including small PQS holders as well as some of the largest crab PQS and CDQ entities. As an Active Participant each and every year of this program, I want to thank you for the opportunity to comment on the proposed Bering Sea Tanner Crab Spend Plan.

I respectfully request that the State of Alaska modify the proposed method for making direct payments to the processing sector. The BSAI crab industry is facing several species-based crises at the same time, and I think that it is vitally important to recognize those entities that continue to take on the associated risks and challenges for the industry; in other words, the in-season "Active Participants". For the reasons outlined below, I believe the "Active Participants" in the processing sector are the in-season IPQ holders.

Overview

(Some of this information has also been provided by Peter Pan Seafood Company in their comments).

There were 14 PQS holders for the 2019/2020 WBT fishery and only 3 or 4 processing facilities. Given the low fishery abundance levels, the industry has responded by consolidating both harvesting and processing operations to try to maintain operating margins. This is true across all BSAI crab program fisheries; as illustrated by the Council's current consideration of proposals to remove the few remaining processing facility use caps.

Widespread leasing of both IFQ and IPQ is also a symptom of the current crises; as are the several crab disaster declarations. These events are absolutely linked and should be reflected in the Spend Plan by allocating disaster monies to the entities that are recent/current Active Participants who continue to take on the entire processing sectors operating and market risks; which are the IPQ holders rather than the (passive) owners of the underlying PQS.

IFQ holders are already recognized in the draft Spend Plan; IPQ holders should receive similar consideration.

Regarding the harvest sector, the Spend Plan acknowledges the need to allocate funds to the harvest sector recent/current Active Participants by allocating 69% of harvester funds to vessel owners and captains/crew who actively fished and landed IFQ during either the 2017/2018 or 2018/2019 season(s). This is appropriate, as these are the individuals and entities that continue to take on the financial risks on behalf of that sector. A similar approach should be used for allocating to active IPQ holders.

How to Identify Eligible IPQ Holders: Two Steps

Prior to each season, NMFS/RAM issues IPQ to all of the eligible applicants. The industry then consolidates the IPQ (and IFQ) through the RAM eFish website:

(https://alaskafisheries.noaa.gov/webapps/efish/login)

The post-season eFish data may be the best basis for initially identifying the "Active Participants" for a given Crab Year, but I would also recommend that the state establish some sort of public appeal process for entities that may have a unique contractual arrangement not reflected in the eFish data.

Making Direct Payments to IPQ Holders does not necessarily disadvantage PQS holders

Much of the crab program PQS is held by the major processors: Trident, Unisea/RAS (Nissui) and Westward/Alyeska (Maruha). In those instances, their PQS holdings are the basis for their annual IPQ allocations; which are then (for the most part) used in their plants. Therefore, allocating disaster funds to IPQ holders should not disadvantage the major PQS holders; and the inclusion of the above-described appeal process would provide stakeholders the opportunity to document unique agreements that fall outside of the eFish database.

Conclusion

I respectfully ask that the State of Alaska consider carefully what entities are continuing to take the financial and market risks necessary to sustain these fisheries during their multi-year rebuilding periods, and award those "Active Participants" appropriately.

Steven Minor

March 13, 2023

Ms. Karla Bush
ADF&G
PO Box 115526
Juneau, Alaska 99811-5526

Re: 2019/2020 Bering Sea Tanner Crab Disaster Spend Plan

Dear Karla,

As it relates to the various BSAI crab program disaster funding Spend Plans, we respectfully request that the State of Alaska reconsider and modify the proposed method for making direct payments to the processing sector. For all of the reasons outlined below, we believe that the IPQ holder, not the PQS holder, should be the recipient of the direct payment(s).

Overview

There were 14 PQS holders for the 2019/2020 WBT fishery and only 3 or 4 processing facilities. Given the low fishery abundance levels, the industry has responded by consolidating both harvesting and processing operations to try to maintain operating margins. This is true across all BSAI crab program fisheries; as illustrated by the Council's current consideration of proposals to remove the few remaining processing facility use caps.

Widespread leasing of both IFQ and IPQ is also a symptom of the current crises; as are the several crab disaster declarations. These events are absolutely linked and should be reflected in the Spend Plan by allocating disaster monies to the entities that are recent/current Active Participants who continue to take on the entire processing sectors operating and market risks; which are the IPQ holders rather than the (passive) owners of the underlying PQS.

IFQ holders are already recognized in the draft Spend Plan; IPQ holders should receive similar consideration.

Regarding the harvest sector, the Spend Plan acknowledges the need to allocate funds to the harvest sector recent/current Active Participants by allocating 69% of harvester funds to vessel owners and captains/crew who actively fished and landed IFQ during either the 2017/2018 or 2018/2019 season(s). This is appropriate, as these are the individuals and entities that continue to take on the financial risks on behalf of that sector.

A similar approach should be used for allocating to active IPQ holders.

The Processing Sector Data

To illustrate the logic of using the same approach to "recency" that is proposed for the harvest sector portion of the Spend Plan, NMFS RAM records document the high level of IPQ leasing throughout the relevant crab program fisheries:

Fishery/Crab Year	PQS Entities	IPQ Issuees
WBT 2017/2018	15	12
WBT 2018/2019	14	10
WBT 2019/2020	CLOSED	CLOSED
WBT 2020/2021	13	11
WBT 2021/2022	18	9
WBT 2022/2023	18	8
EBT 2017/2018	15	CLOSED
EBT 2018/2019	15	CLOSED
EBT 2019/2020	15	CLOSED
EBT 2020/2021	15	CLOSED
EBT 2021/2022	18	CLOSED
EBT 2022/2023	18	8
BBR 2017/2018	13	10
BBR 2018/2019	13	9
BBR 2019/2020	13	8
BBR 2020/2021	13	12
BBR 2021/2022	CLOSED	CLOSED
BBR 2022/2023	CLOSED	CLOSED
BSS 2017/2018	15	11
BSS 2018/2019	15	10
BSS 2019/2020	15	10
BSS 2020/2021	14	10
BSS 2021/2022	17	9
BSS 2022/2023	CLOSED	CLOSED

Making Direct Payments to IPQ Holders does not necessarily disadvantage PQS holders

Much of the crab program PQS is held by the major processors: Trident, Unisea/RAS (Nissui) and Westward/Alyeska (Maruha). In those instances, their PQS holdings are the basis for their annual IPQ allocations; which are then (for the most part) used in their plants.

Example: Peter Pan Seafood Company LLC

On January 1, 2021, Peter Pan Seafoods came under new US ownership, which includes a significant Alaska component. As part of the sale and transfer of ownership, all of the BSAI crab program PQS held by the "old" Peter Pan group (Maruha) was leased to the "new" Peter Pan (with an option to purchase that could not be exercised until the current Crab Year).

As a result, the "new" Peter Pan has "leased" 100% of the relevant IPQ each year; taking all of the financial and market risks while guaranteeing Maruha a risk-free fixed lease fee. We do not think that this is an atypical approach to IPQ leases; it therefore illustrates the basis for our request that the IPQ holder be recognized as the appropriate recipient of crab disaster funds.

Conclusion

We believe that the Spend Plan developed for the 2019/2020 Bering Sea Tanner Crab Disaster will become a template for the Opilio/Snow crab and Red King crab disaster funds as well. We ask that the State of Alaska consider carefully what entities are continuing to take the financial and market risks necessary to sustain these fisheries during their multi-year rebuilding periods, and award them appropriately.

Sincerely,

Rodger May
President
Peter Pan Seafood Company