MATANUSKA-SUSITNA BOROUGH

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FISH AND WILDLIFE COMMISSION

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Regular Meeting
12/15/2022

Page----Item:

Physical Location of Meeting: LLCR, DSJ Bldg, Palmer.
Remote Participation: See attached agenda.

Planning and Land Use Department - Planning Division

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MATANUSKA-SUSITNA BOROUGH INFORMATION MEMORANDUM **IM No. 23-002**

SUBJECT: AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY AMENDING MSB 17.55 TO ALLOW STRUCTURES TO BE BUILT WITHIN 75 FEET OF A WATERBODY.

AGENDA OF: December 20, 2022

ASSEMBLY ACTION:

MANAGER RECOMMENDATION: Refer to Planning Commission for 90 days.

APPROVED for MICHAEL BROWN, BOROUGH MANAGER:

Route To:	Department/Individual	Initials	Remarks
	Originator - Planning Director A. Strawn		
	Community Development Director		
	Public Works Director	12/8/22	
	Borough Attorney		
	Borough Clerk	12/13/22	

ATTACHMENT(S): Fiscal Note: YES ____ NO X
Shoreland Setbacks Analysis & Recommendation (1999) (23 pp)
Planning Commission Resolution 23-__ (pp)
Ordinance Serial No. 23-001 (6 pp)

SUMMARY STATEMENT:

This ordinance is at the request of Assembly Members Yundt and Tew.

A 75-foot waterbody setback was originally adopted in 1973 by assembly ordinance. The setback was briefly lowered to 45 feet in 1986 and again increased to 75 feet by voter initiative in 1987.

Over the years, hundreds of homes have been constructed in violation of the 75-foot waterbody setback ordinance. Most of the construction went undetected due to lack of any permitting requirement for development within the Borough. Additionally, when

violations are discovered, there is no easy or inexpensive remedy to the violation.

This ordinance allows structures to be built within 75 of a water body as long as long as they are built and designed in accordance with plans developed by a structural engineer. Nothing in this ordinance affects setbacks from property lines or public easements, including to-and-along easements.

RECOMMENDATION OF ADMINISTRATION:
Staff recommends the assembly refer this ordinance to the Planning Commission for review for 90 days.

Matanuska-Susitna Borough Shoreland Setbacks

Analysis and Recommendation

Prepared by:

Land Design North
510 L Street, Suite 101
Anchorage, Alaska 99501

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Introduction

Since 1973, the Matanuska Susitna Borough has been struggling with the designation and implementation of an appropriate waterbody setback distance from area lakes, streams, and wetlands to protect water quality and fish and wildlife habitat. From 1973 to the present, structural setbacks from waterbodies have ranged from 45 to 75 feet and have allowed accessory uses such as piers, marinas, boathouses and docks over the water. The setbacks to date have only regulated structure placement and have not regulated uses or activities within the setback zone. For example, there are currently no requirements to maintain natural vegetation or limit the amount of impervious surfaces.

The inherent challenge of the project is that people have varying goals and values relative to the use of water resources and lands. Over the years, arguments have been presented to maintain, increase, and decrease the setback distance. Arguments in favor of a lesser setback generally cite private property rights, undue hardships on developing land, increased views and access to waterbodies. Those in favor of greater setbacks cite improved water quality, enhanced fish and wildlife habitat, noise reduction, and improved aesthetic values.

In 1998, a Shorelands Steering Committee was formed to recommend goals and strategies to analyze and improve the management of shorelands and develop a Shorelands Management Plan. The results of their work can be found in Appendix A. In summary, the long-term goal of the Matanuska-Susitna Borough Shorelands Management Plan is to determine how inland lake basins, streams and wetlands function as ecosystems within the watershed and how to manage the many resources and values present in these systems in a sustainable manner. While this is an admirable goal, this long-term goal can be reached only through a comprehensive watershed study and the long-term investment of dollars, expertise and collaborative effort by government, universities and the private sector.

This report is intended to meet the more immediate need of resolving the shoreland setback issue and to establish effective performance standards for uses within the setback zone to minimize future requirements for mitigation or restoration of disturbed areas and degraded water quality. As the Mat-Su Borough continues to grow in population and becomes one of the most popular recreational destinations in Alaska, the threat of degradation to its waterbodies increases. An altered water system is not only difficult to restore, it is expensive and may never fully recover. This can mean declining property values, loss of recreational activities, loss of water-dependent businesses, and a decline in fish and wildlife populations. Simply put, no one wants to live, recreate or conduct business on a polluted waterbody.

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This purpose of this report is to review and incorporate by reference the work done to date on the Shoreland Management Plan and recommend a setback distance that will protect water quality in the Mat-Su Borough. This interim report also seeks to:

- Understand the intent and history of structural setback regulations in the Mat-Su Borough
- Define and understand the function of the relatively narrow strip of land (the riparian zone) surrounding a waterbody
- Review the role of setbacks as a management tool to enhance and protect water quality from residential, commercial and industrial development based on the literature review conducted by the Mat-Su Borough and supplemented by work done as part of the Big Lake, Lake Management Plan.
- Recommend a structural setback and performance standards

Finally, to help provide information of similar efforts in other jurisdictions, a literature review done by the Mat-Su Borough as part of the Shoreland Management Plan is provided in Appendix A. It briefly describes available literature on how other jurisdictions establish setbacks and manage shorelands, the use of buffer zones, the role of riparian vegetation, and the balancing of private property rights, public access and safety, and environmental issues. It should be noted that this review only provided a brief summary of the literature and did not analyze or document the different setbacks studied. For this reason, an analysis of setbacks done as part of the Big Lake, Lake Management Plan is being used for this report.

Setback History

An important aspect of evaluating regulations is to clearly understand their intent and historical context to determine if the existing regulation has been effective. Presented below is a brief synopsis of the Matanuska-Susitna Borough (MSB) setback ordinances and the Mat-Su Borough Coastal Management Program policy regarding setbacks to date.

- 1973. Borough adopts a 75-foot Setback (MSB ordinance 73-6). "Structures shall not be closer than 75 feet from the normal high water mark of a water course or body of water in a shoreland. The Commission may require a greater setback if it finds that a specific body of water possesses unique characteristics such as outstanding fish and aquatic life, shore cover, natural beauty or other ecological attribute. Boat houses may be located over the water provided they are not used for habitation and do not contain sanitary facilities." In subsequent years the ordinance was amended to legalize docks, piers and marinas over the water and require that they conform to state and federal regulations.

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- **1984.** The Mat-Su Borough Coastal Management Program (MSBCMP) goes into effect which, as outlined in Coastal Habitats Policy 2, upholds the 75 foot setback but eliminates all provisions to allow the Platting Board to reduce setback distances if certain conditions are met. Approved by the Coastal Policy Council (CPC) in **1983,** this policy raised issues of compliance with MSB ordinances and eliminated flexibility in the existing regulations.

- **1986.** Borough adopts a 45-foot setback (MSB ordinance **86-101).** "No structure or footing shall be located closer than 45 feet from the high water mark of a watercourse or body of water, except docks, piers, marinas, and boathouses may be located closer than 45 feet and over the water provided they are not used for habitation and do no contain sanitary facilities." "Exception: Does not apply to structures where construction was completed prior to January **1, 1987** if the present owner or owners of the property had no personal knowledge of any violation of the setback requirements prior to substantial completion of the structure."

- **1987.** The MSB submits revisions to the MSBCMP Coastal Habitats Policy 2 in order to create a more flexible policy. The Division of Governmental Coordination (DGC), staff to the CPC, determines that the proposed policy lacks enforceable language, and in cooperation with the **MSB** and the state, develops alternative policy language consistent with the Alaska Coastal Management Program. The revised policy is adopted by the CPC in March of **1988,** with provisions that the proposed uses and activities within *75* feet of the high water line "must be reviewed to ensure protection of water quality and fish and wildlife habitat." Additionally, water-dependent structures (including docks, piers, marinas, boathouses and floatplane hangars) are allowable within 75 feet provided "they are constructed and used in a way that minimizes adverse impacts to water quality and fish and wildlife habitat." Finally, the policy states that other uses and activities within **75** feet are also allowable if the proposed development "will have no sianificant adverse impacts on water quality and fish and wildlife habitat, and complies with other applicable federal, state, and local requirements."

- **1987.** Borough reinstates a 75-foot setback (MSB ordinance **87-59) .**The setback is changed to 75 feet with the provision that water dependent structures such as docks, piers and marinas are allowable within 75 feet if they conform to all applicable state and federal statutes and regulations, and so long as they "are not used for habitation and do not contain sanitary or petroleum fuel storage facilities."

- **1988.** Clarification and amendments (MSB ordinance **88-190).** The term "Shorelands" is defined, and the setback remains at 75 feet with the provision that "the Director of the Planning Department or the designee of the director shall upon application **by** a property owner, determine whether a property qualifies for an exception." There is also a subsection allowing the Planning Commission *to* increase the distance of a subsurface sewage disposal system from any body of water beyond the 100-foot zone "where necessary to protect waters within the Borough."

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Based on a review of above history, the two critical flaws in the current setback have been identified:

(1) The intended purpose of the waterbody setback appears to be to protect water quality and in turn fish and aquatic habitat; however, it is not clearly defined. It is recommended that the intent of the waterbody setback be clearly stated up front in future ordinances to facilitate enforcement and compliance. A property owner is more willing to comply with a regulation if they clearly understand its purpose and believe that the regulation is effective at achieving its purpose. To evaluate the effectiveness of a setback, it is critical to understand what is trying to be accomplished with the regulation. An example purpose statement might read as follows:

> "The intent of the waterbody setback is to preserve the integrity of the Borough's lakes, streams, rivers, and wetlands by maintaining and improving water quality, shore cover, fish and wildlife habitat, and aesthetic values."

(2) The setback only addresses the placement of structures. It does not address what can and cannot be done within the 75-foot setback area. The flaw with this approach is that locating buildings back from the waterbody may or may not meet the intent of the regulation. One of the greatest threats to water quality is Non Point Source (NPS) pollution. NPS pollution is defined as pollutants carried in runoff originating from various sources; precipitation moves over and through the ground and picks up pollutants from these sources and carries them into rivers, lakes, and groundwater. Some of the major sources and causes of NPS pollution adjacent to waterbodies are erosion and sedimentation (from cleared lots), septic systems, and runoff (carrying oils, chemicals, fertilizers and pesticides). A structure that is placed 75 feet back with vegetation cleared to the edge of the shoreline may increase the threat to water quality and in turn harm fish and wildlife habitat and the aesthetic qualities of the site by increasing the amount of NPS running into the waterbody. Whereas a structure setback of only 45 feet with vegetation retained between the structure and the shoreline may do more to protect water quality. The vegetation can slow runoff, trap sediment, and act as a natural filter to remove pollutants.

Another challenge with the history of setbacks in the Borough is the fluctuating distances and general lack of compliance by property owners. The low compliance is at least partially symptomatic of the lack of understanding of the ordinance's purpose. This has resulted in inconsistent development around waterbodies and in turn has made enforcement very difficult.

Function of BufferZones (Setbacks)

Literature associated with the protection of water quality defines buffer zones or setbacks as corridors of undisturbed natural vegetation or, where this is not present, grass or other erosion resistant vegetation, between a waterbody or wetland and an area of more intensive land use such as residential development. The use of natural buffer zones to protect water resources from pollution is attracting considerable attention within the United States and globally. Early research in this area stemmed from adverse impacts associated with timber and agriculture industries and has since evolved to consider the impacts of urban development including residential, commercial and industrial uses.

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To understand the impacts from development, it is important to understand the watershed concept. A watershed includes the entire land form drained by streams and rivers and is the ultimate water source for a lake. The visible area of a watershed is the surface on which rain and snow fall. The larger, invisible portion of the watershed lies beneath the surface where water seeps into the ground. A raindrop travels from a mountain top to a lake in three ways: (1) some is absorbed by the soil; (2) some collects on the ground in depressions; and (3) some flows overland. It is the overland flow or runoff that poses the greatest threat to water quality. With the overland flow, the raindrop forms rivulets, which in turn join to form streams, and the streams join to form rivers, and so on. Whatever that raindrop picks up from the land along its journey ends up in the water. The greater the amount and speed of runoff the greater the potential impacts. The primary benefits of a waterbody setback are:

- **Maintain and Protect Water Quality** – Improve the quality of water passing through the buffer zone by trapping suspended sediments and removal of toxic substances, nutrients and pathogens carried in the surface water runoff.

- **Anchor Shoreline and Stream Banks and Control Erosion** – The shallow water table in the riparian zone makes water available during the growing season, creating a healthy terrestrial plant habitat for both soil and woody-debris-rooted plants. These in turn reduce erosion by anchoring the soil and trapping suspended sediments.

- **Provide Flood Control** – During periods of high runoff riparian and upland wetlands store and convey flood water. This storage function has the dual effect of moderating peak flows during high runoff events and augmenting ground and surface water flows during low runoff periods.

- **Protect Fish and Wildlife Habitat** - Riparian zones typically support greater numbers and diversity of fish and wildlife. Many terrestrial and aquatic animals use this area for foraging and feeding, breeding and rearing their young, and taking protective cover during 1 or more life stage.

- **Promote Scenic, Recreational, and Quality of Life Values** – The setback serves as a physical buffer between human activities on land and on the water. Scenic, recreation and wildlife assets are enhanced by buffer zones and can increase property values. Setbacks around busy recreational lakes and rivers can also help to reduce noise impacts on surrounding land uses.

While most people can agree on the function of a buffer zone, research reveals that the width of setbacks varies greatly. It is generally accepted that the use of buffers is most effective when the setback criteria reflect:

- Site-specific characteristics of the development area (slope, topography, vegetation, vulnerability to soil erasion, surface and groundwater hydrology)

- Type of proposed disturbance or land use

- Existing land uses around streams and lakes within the watershed

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- Function of the buffer zone (sediment filtering, shading, shoreline stabilization by vegetation root systems, food and cover for fish and other wildlife)
- Resource aspects of greatest sensitivity and vulnerability to disturbance
- Flexibility in implementation

Unfortunately, this site-specific approach to defining setback distances requires significant resources to inventory all lands, develop a fair implementation process to avoid arbitrary and capricious decisions, and to enforce. For this reason, most governing bodies designate a set distance from a waterbody for structures and include minimum performance standards regulating the use of the buffer zone.

A number of studies have been conducted to understand the relationship of buffer strips of various distances to fish populations and aquatic habitat productivity in affected streams and the effects of development activities on lake water quality. Studies have also examined the effects of development activities which occur adjacent to or in proximity to lakes and streams to determine the actual effects of the disturbance and demonstrable reductions in impact with varying levels of separations (setbacks) between the development and the waterbody. Environmental parameters studied have included changes to:

- Stream flows
- Light intensity
- Water temperature
- Concentrations of suspended and settled sediments
- Presence of large woody debris
- Nutrient loads in surface runoff and groundwater
- Water-transported contaminants such as pesticides, herbicides, and fungicides

Below is a summary of some of the studies reviewed and the buffer widths that are recommended for the resource protection and the protection of fish and aquatic populations:

- **Stream Temperature:** For development or resource extraction activities which entail the removal of overstory vegetation along streams, buffer strips are one of the most effective means for maintaining water temperature in a range and seasonal pattern most beneficial to fish. Buffers greater than **100** feet have been found to provide as much shade as old growth undisturbed forest. Undisturbed buffer strips from **50 to 100 feet** in width were found to maintain water temperatures with a normal range under some circumstances, partially dependent on stream course orientation and the buffer placement.

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- Erosion and Sedimentation: In the Pacific Northwest, buffer strips **50 to 100** feet wide reduced stream sedimentation from adjacent patch-timber harvest activities; however, the sediment levels in the stream using the 50 to **100** foot buffer were **still** 50 percent greater than an undisturbed portion of the watershed. **A** more sensitive indicator of the effects of introduced sediments on streams is the measurement of changes to the permeability of streambed gravels. Streambed permeability has a more direct bearing on the success of survival for developing eggs and egg sac fry present in the gravels of the stream. Logging activities conducted with an adequate stream setback buffer have shown minimal changes to stream gravel permeability. Logging activities that did not incorporated setback buffers were found to decrease stream gravel permeability more than **50** percent for at least **6** years following logging.

- Large Woody Debris: Removal of nearly all riparian trees along streams can eliminate the source of large woody debris in second growth forests and old growth forests for a period of **40 to** 100 years after disturbance. Associated effects on fish habitat can include changes to riffle and pool frequency and loss of overhanging and undercut banks important to juvenile fish and changes in availability of critical overwintering habitat. For logging activities and similar clearing disturbances, studies have shown that buffer strips of ***50*** to **425** feet (British Columbia) and **15** to **130** feet (Southeast Alaska) produced more juvenile salmon in the summer and sheltered more juvenile salmon during the winter than areas without buffers.

- Water Quality: Buffer strips have been shown to improve or avoid declines in dissolved oxygen concentrations in streams primarily by keeping clearing debris and sediments out of streams and providing shade conditions that maintain natural water temperatures (cooler water contains higher levels of dissolved oxygen). Buffers of **20 to 130** feet have been shown to be effective in preventing logging slash from entering streams in the Pacific Northwest.

Cities and Boroughs throughout the United States and Canada use also setback criteria to protect development structures from the potential effects of flooding, stream bank migration, winter icing and to protect water quality and fish and wildlife habitat. Typically the setbacks are included as part of a more extensive zoning ordinance or Shoreland Protection Ordinance and detailed minimum development standards are used in conjunction with structural setbacks. Development standards typically regulate the type of uses, amount of impervious surfaces, and restrict tree cutting and the clearing of vegetation within the setback zones. Presented below is a summary of representative setbacks/buffer strips used by local governments including the key conditions that must be met as part of the setback.

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Location	Setback (from ordinary high water mark)
Municipality of Anchorage Title 21 - Stream Protection	• A minimum of 25 feet wide on either side of the stream • No vegetation may be cleared or disturbed, no grading or excavation may be done, and no structures, fill or paving may occur within 15 feet of the stream. • Within the stream protection setback, located between 15 and 25 feet from the stream, landscaping is permitted.
Anchorage Wetlands Management Plan 1995 Setbacks from Wetlands	• Minimum setback is 25 feet. • 100 feet from anadromous fish streams • 85 feet from certain headwaters and tributaries • 65 feet from all other water bodies. • Allows for customized setback as part of the permitting process • Requires undisturbed buffers between 15 and 25 feet depending on wetland types and interactions • Setbacks and buffers shall remain undisturbed to the maximum extent
Willow Sub-Basin Area Plan Logging Buffer (Undisturbed Vegetation) Strips	• Minimum 50-foot buffer, larger setbacks to be determined on a site-specific basis
Susitna Area Plan - Logging Buffer (Undisturbed Vegetation) Strips	• Minimum 100 feet from anadromous fish streams or other acceptable measures • 100 feet to ¼ mile (greater than 300 feet for visual quality, recreation, and wildlife habitats • 100 foot buffer for wetlands greater than 100 acres with a locatable stream outlet • 60 foot buffer for wetlands 40 to 100 acres with no locatable stream outlet
Hatcher Pass Management Plan - Logging Buffer (Undisturbed Vegetation) strips	• 200 foot buffers on specific streams • 100 feet on all other perennial streams to include all riparian vegetation (but not less than 50 feet)
Alaska Department of Fish and Game – Timber Harvest Activity Buffer (Undisturbed Vegetation) Strips	• 100 foot setback buffer from stream or lake shoreline, the upland edge of all stream/lake contiguous wetlands, all fish streams, and all lakes connected by surface drainage to fish streams
Pacific Northwest - Logging Buffer (Undisturbed Vegetation) Strips	• Recommended 50 to 100 feet
Southeast Alaska - Logging Buffer (Undisturbed Vegetation) Strips	• Recommended 15 to 130 feet
Department of Environmental Programs, Metropolitan Washington Council of Governments	• A minimum setback buffer of 20 feet is recommended • 100 to 300 feet for adequate removal of the smaller sized sediment particles found in urban runoff
Bellevue, Washington Shoreline Overlay District	• No clearing, grading, excavating, or fill within 25 feet • No commercial parking facilities within 25 feet, • 25 foot setback for structures except docks, piers, and boathouses • Requires plan indicating methods for preserving shoreline vegetation and control of erosion

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Location	*Setback (from ordinary high water mark)*
York, Virginia Watershed Overlay District	• 200 foot buffer strip from tributary streams and public water supply reservoirs, maintained in natural state or planted with erosion resistant vegetation
Lake Tahoe Shorezone Tolerance Districts	Explicit development standards are based on physical characteristics for 8 shorezone districts. Three districts are summarized: • Backshore (defined as the area of wave run-up or instability plus 10 feet – whichever is greater) - Allowable base land coverage in this zone is 1%. Naturally occurring vegetation shall not be removed or damaged unless otherwise authorized under a permit. • District 1 (generally the beach area that separates lakes from marshes and wetlands) – Access to the shoreline shall be restricted to planned footpaths which minimize the impact to the backshore. Vegetation shall not be manipulated or otherwise disturbed except when permitted. • Districts 2 and 3 – Permitted development may be conditioned upon installation and maintenance of vegetation to stabilize backshore areas and protect eroding areas from further destruction.
Ozaukee County, Wisconsin shoreland Protection	• 75 feet for all buildings except piers, marinas. boathouses • Boathouses must be set back 2 feet. • Tree cutting – No more than 30 percent of the length shall be clear cut to the depth of the strip. Cutting of the strip shall not create a clear cut opening in the strip greater than 30 feet wide for every 100 feet of shoreline. In the remaining 70% length of the strip, cutting shall leave sufficient cover to screen cars, dwellings, accessory structures (except boathouses) from the water.
Douglas County, Wisconsin	• Minimum protection Zone-75 feet • Moderate protection zone –100 feet • Maximum protection zone -125 feet
Minnesota Department of Natural Resources	• Recommends shoreline vegetative buffers of a minimum of 15 to 25 feet • 30 feet setbacks will accommodate the needs of most shoreline wildlife
Statewide Standards for Management of Shoreland Areas - Minnesota	• Setbacks based on density and lot size. Setbacks range from 75 to 265 feet. 40,000 square foot lot with single family home requires 150 foot setback • At least 10 feet for accessory structures. • Limited clearing of trees and shrubs and cutting and pruning, and trimming of trees to accommodate the placement of stairways and landings, picnic areas, access paths, beach and watercraft access areas, and permitted water-oriented accessory structures as well as providing a view to the water from the principal dwelling site in shore and bluff impact zones is allowed provided that: - The screening of structures, vehicles, or other facilities as viewed from the water, assuming summer leaf on conditions, is not substantially reduced. - Along rivers, existing shading of water surfaces is preserved. • Impervious surface coverage of lots must not exceed 25 % of the lot area.
Landscape Planning Environmental Applications William Marsh, 1991.	Buffers widths generally greater than 50 to 100 feet in urban areas have been shown to be extremely efficient in sediment removal (up to 90 percent or more) if they meet the following design criteria: • Continuous grass/turf cover • Gentle gradients, generally less than 10 percent • Shallow runoff depth, generally not exceeding the height of the grass. • In hilly terrain, buffers should be located on upland surfaces and integrated with depression storage and soil filtration measures

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Recommended Setback

Properly incorporated into planning, design, permitting, and construction criteria, setback buffers are an invaluable tool for minimizing future requirements for mitigation or restoration of disturbed areas. It is recommended that the Borough retain the 75-foot setback and regulate the activities within the setback using performance standards to ensure that the intent of the setback is met. A 75-foot setback is justified for the following reasons:

- A comprehensive scientific evaluation of effective shoreline setback distances in the Borough has not been completed. Due to the magnitude of such a project and limited resources, it is unlikely it will be completed in the near future. In addition, the literature reveals that the widths of setbacks vary significantly even when based on sound scientific research. Literature generally supports site-specific setbacks; however, this is an unrealistic approach with the Borough's limited resources.

- Lacking scientific data gathered along the shorelands of the Mat-Su Borough, a change in the setback is politically unpopular and is a highly charged issue. Those in compliance with the 75-foot setback do not want to see a lesser setback and are concerned about view obstructions and other impacts to the waterbody environment. Regulating agencies and environmental groups would also resist a lesser setback because of adverse impacts and would like to see at least a 100-foot setback. A larger setback could result in more variances being required, increased non-compliance, and lengthy challenges.

- A process still exists to apply for a variance to reduce the setback if it presents the property owner with an undue hardship.

- Literature supports a setback of between 50 and 100 feet with the inclusion of minimum development standards. This indicates that ***75*** feet is a reasonable distance to offer at least some protection to natural resources under a variety of development scenarios.

Recommended Minimum Performance Standards

Effective performance standards or Best Management Practices are enforceable and can be consistently applied to all property owners. This will add increased protection to the Borough's waterbodies as they become more popular and more heavily populated, and it will help to bring **Mat-Su** Borough ordinances on shoreline development into compliance with the provision of the Mat-Su Borough Coastal Management Program (MSBCMP) that "proposed uses and activities within 75 feet of the high water line must be reviewed to ensure protection of water quality and fish and wildlife habitat."

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Regulation of activities within the 75-foot setback must focus on the following two concerns which can have a significant impact on water quality, fish and wildlife habitat, and the aesthetics of shorelands and waterbodies:

- **Loss of riparian vegetation:** Removal of existing vegetative cover in the riparian zone to provide shoreline access for boats, create lawn, or for other activities is likely to lead to erosion and sediment transport in runoff waters into the waterbody. Vegetation in this zone helps to filter sediment, nutrients, and pollutants out of surface runoff, while stabilizing banks, controlling erosion, and dissipating floodwaters. Additionally, many terrestrial and aquatic animals use this area for foraging, breeding and rearing their young, and taking protective cover.

- **Use of impervious surfaces:** An impervious, or nonporous surface is one that will not allow water infiltration such as blacktop, concrete and rooftops. Runoff water from these surfaces increases the rate at which pollutants and excess nutrients are carried the water. Impervious surfaces also interrupt natural drainage patterns and can cause shore degradation through concentration of runoff and erosion.

Uniform application and consistent enforcement of specific performance standards can effectively address the above concerns before development starts, at a point when such measures are both inexpensive to the property owner and easy to implement. Moreover, the following measures will also address visual impacts and can serve to buffer and reduce noise generated on the waterbodies.

1. Preserve a minimum 25-foot wide buffer of undisturbed native vegetation across a total of 30 percent of the parcel's shoreline. This zone is a permanent planting and should be left untouched, except for the removal of select or fallen trees. In the remaining 70 percent of the buffer zone, limited clearing of trees and shrubs and cutting and pruning of trees is permitted to accommodate the placement of stairways' and landings, picnic areas, access paths, beach and watercraft access areas, and permitted water-oriented accessory structures as well as providing a view to the water from the principal dwelling site is allowed provided that:

    - The screening of structures, vehicles, or other facilities as viewed from the water, assuming summer leaf on conditions, is not substantially reduced.
    - Along rivers, existing shading of water surfaces is preserved.

    These provisions shall not apply to the removal of dead, diseased or dying trees.

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2. In cases where the following land uses are present within the 75-foot buffer zone, an additional 15-foot wide vegetative buffer, the same length as the use, must be in place between the use and the shoreline to intercept runoff. Non-native vegetation can be used in this zone.

    - Driveway
    - Parking lot
    - Road
    - Car wash
    - Dog kennels
    - Boat Maintenance and Other Repair Activities

3. Any paved, impermeable, or roofed surfaces within the 75-foot buffer zone must have an infiltration bed of sufficient size to control the velocity and volume of runoff.

4. Impervious surface coverage of lots must not exceed 25 percent of the lot area.

5. Boathouses must be set back 2 feet from the water's edge, and are of a height and color so as not to detract from the natural beauty of the shoreline and shall not be used for human habitation.

6. Development shall be accompanied by a site plan indicating methods of preserving shoreline vegetation and for control of erosion during and following construction.

7. All structures, accessory buildings and ancillary facilities, other than those related to water use such as docks, piers, and boat houses shall be set back a minimum of 30 feet from the ordinary high water mark.

8. Parking shall not be permitted over water or within 30 feet of the shoreline.

In cases where a property owner seeks a variance from the 75-foot buffer, it is recommended that the above performance standards still apply.

Conclusion

Some regulation is necessary to preserve the value and enjoyment of the Borough's waterways, especially as they grow in popularity for residential and recreational use. A recommended 75-foot setback with minimum performance standards begins to address the protection of water quality and fish and wildlife habitat. In addition, the vegetated setback also serves an important function in the protection of values associated with quality of life to include noise reduction and aesthetics.

However, because water quality is intrinsically linked to the day to day activities of residents and users on and surrounding the waterbody, education is also critical to preserving the resource. Therefore, it is also recommended that in addition to the Matanuska-Susitna Borough's Property Owner's Guide to Shoreline Landscaping, a booklet containing Best Management Practices for waterfront property owners be developed promoting responsible development. Example Best Management Practices might include the following.

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- Protect bare soil surfaces. Vegetation is the best protection because it both absorbs and uses water. Seed and mulch exposed soil within the watershed as soon as possible after disturbance (gardens, construction sites, etc.).

- Use fertilizer sparingly. All fertilizers are carried in runoff and dissolve into the groundwater. Use non-phosphate varieties.

- Do not concentrate or channelize water flow unless absolutely necessary. On undisturbed slopes, water percolates through soil slowly. When all runoff is focused on one spot, such as a culvert or roof gutter, the natural protection of the ground surface is often not sufficient to prevent this extra flow from breaking through to bare soil. If runoff must be directed, protect the outflow area with an energy dissipator, such as rock or securely anchored brush, that will withstand storm flows.

- Prevent water from running off roads, driveways, roofs or lawns directly into lakes and streams. Direct surface runoffs into natural depressions, or flat, wooded areas, where the water can seep into the around slowly.

- Keep septic tanks maintained. Pump every 2-3 years for year-round homes: every 5-6 years for seasonal cottages. This expense is well worth every penny. Pumping is the key to keeping your septic system working. It *is* far less expensive to pump than to have a new leaching field installed.

- Avoid the use of phosphate containing detergents.

- Don't wash vehicles near the waterbodies.

- Use lawn clippings and leaves as mulch for shrubs and gardens. Pile these where they will not be washed into the waterbodies by heavy rains.

- Don't provide feed for wild ducks and geese. As pretty as these may be, large numbers of Canada Geese have become major problems and polluters (fecal coliform) of lakes elsewhere in the state.

- Place manure and composting piles as far as you can from the waterbodies or from drains or ditches which lead directly to lakes or streams.

- Limit human use or animal use of vulnerable areas. Trails can channel the flow.

- Establish temporary berms during construction to contain runoff overflow.

IM 23-002
OR 23-002

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IM 23-002
OR 23-002

DRAFT
October 28, 1998

MATANUSKA-SUSITNA BOROUGH
350 East Dahlia Avenue, Palmer, Alaska 99645-6488
Planning and Land Use Department, Code Compliance Division
(907)745-9853 FAX:(907) 745-9876 E-mail: ccb@msb.co.mat-su.ak.us

SHORELANDS MANAGEMENT STUDY
QUESTIONNAIRE

The Planning Department of the Matanuska-Susitna Borough has an FY99 **309** Enhancement Grant from the Alaska Coastal Management Program (ACMP) to study how people want the ***shorelands*** to be managed. As the communities of the Borough, especially their outdoor activities and amenities, continue to attract new residents, businesses, and visitors, how much value will people place on integrating the natural framework of creeks, rivers, lakes, and drainage basins with the life-styles and economic opportunities of the Borough?

The Planning Department is asking for help from a broad spectrum of interests. Whatever your background, the Borough is interested in your local knowledge, phrasing of problems, and ideas for managing the ***shorelands.*** How can the ***shorelands*** be integrated into a community that places great value on private market activities and community organizations, and has a strong dislike for government regulation?

1. What are **your current activities** and **uses** of the ***shorelands?***

- ❑ residence or second home
- ❑ camping or temporary residential use
- ❑ commercial or industrial business
- ❑ fishing or hunting
- ❑ guiding or tourism
- ❑ job or work
- ❑ walking, bicycling, **skiing,** or other non-motorized recreation
- ❑ boating, flying, snow machining, or other motorized recreation
- ❑ access to waterways
- ❑ sightseeing or traveling through Borough

What are your **other activities or uses?:**

2. Does anything **displease, disturb, or threaten** you about uses and activities on the ***shorelands?***

- ❑ Disruption from motorized vehicles, boats and airplanes
- ❑ Rudeness among residents, visitors, and neighbors
- ❑ Infringement of privacy and property rights
- ❑ Declining fishing and hunting opportunities
- ❑ Interference with private market
- ❑ Shrinking of job opportunities
- ❑ Fragmented habitat and wildlife systems
- ❑ Flood damage from bluff failure and changing stream patterns
- ❑ Declining environmental quality
- ❑ Crowded recreation and tourism destinations
- ❑ Limited public access to public lands and waters
- ❑ Loss of heritage and damage to artifacts

IM 23-002
OR 23-002

DRAFT
September 29, 1998

Can you identify other **problems** and **threats** regarding ***shorelands?:***
What do you **want to see happen** on the ***shorelines?***

- ❑ **A** linked and adequate system of habitat for small and large wildlife
- ❑ Positive protections of anadromous streams in development projects
- ❑ Encouragement of existing riparian vegetation and protection of natural systems in developing areas
- ❑ Protection of the native vegetation, soils, and waterways in large natural areas
- ❑ **An** overall system to avoid the dangers to life and property from flooding
- ❑ Identification of development opportunities and incentives that are consistent with ***shorelands***
- ❑ Integration of ***shorelands*** with fire safety
- ❑ Encouragement of commercial and industrial patterns that incorporate the values of ***shorelands***
- ❑ Identification of access and other needs of resource based industries
- ❑ Preservation of quality recreational and tourism opportunities
- ❑ Friendliness and cooperation among neighbors, visitors, and residents
- ❑ Identification and integration of heritage resources in ***shorelands*** activities and uses
- ❑ Public procedures that encourage partnerships and a cooperative spirit to protect and develop ***shorelands***

What else would you **like to happen** in the ***shorelands?***

4. What can be done to **better manage** the ***shorelands?***

- ❑ Maintain existing rules regarding the 75 feet setback
- ❑ Easier methods for the public to follow
- ❑ Graphic examples of riparian vegetation and improvements
- ❑ Funding for pilot projects that others may follow
- ❑ Mapping of potential development and significant preservation areas
- ❑ Improvements and vegetation in accord with a plan that will protect the ***shorelands***
- ❑ Discouragement of patterns that result in cumulative impacts
- ❑ Protection of valuable existing uses and activities from more intense development
- ❑ Significant incentives to encourage appropriate development in ***shorelands***
- ❑ Nurturing of partnerships and resource sharing arrangements among organizations
- ❑ Outreach and public information programs to encourage and motivate private businesses

What other **methods or tools** could be used to manage the ***shorelands?***

FURTHER COMMENTS:

If you are interested in providing additional information, specialized knowledge, or insight, or participating in the Advisory Committee or the other ***shorelands*** activities please indicate your **name, phone number, fax, e-mail,** and/or **mailing address:**

PLEASE FOLD AND MAIL
THIS SELF-ADDRESSED AND STAMPED QUESTIONNAIRE

IM 23-002
OR 23-002

DRAFT
October 28, 1998

MATANUSKA-SUSITNA BOROUGH
350 East Dahlia Avenue, Palmer, Alaska 99645-6488
Planning and Land Use Department, Code Compliance Division
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SHORELANDS MANAGEMENT STUDY
SHORELANDS STEERING COMMITTEE
(INTERIM)

AGENDA

(anticipation of public process and study)

INTRODUCTIONS

APPROVAL OF AGENDA

HANDY MEETING RULES
(consensus of people at meeting)

- One person speaks at a time
- Briefly Identify yourself, interests, and background
- Practice good listening skills
- Do not repeat comments of others
- Keep comments brief and on the subject
- Avoid being judgmental of others
- Share your background and information openly
- Defer to the meeting coordinator
- Seek consensus and avoid group voting and decision-making
- Place objectives of study and borough above special interests

PURPOSE OF PROJECT

Review of staff information and background
Background, input, and questions from others

IDENTIFICATION OF PEOPLE AND INTERESTS TO HELP WITH STUDY

(This is the focus and most important activity of the meeting-see attached memo
The remainder of the agenda is for your information and comment)

Interests
Groups
People

PUBLIC PROCESS AND INFORMATION

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DRAFT
October 28, 1998

Schedule
Questionnaires
Interim Steering Committee
Public Forum
Workshops
Announcements and newsletters

SHORELANDS MANAGEMENT STUDY
Background and literature review
Issues and problems
Goals and objectives
Management Policies and Strategies

IM 23-002
OR 23-002

CODE ORDINANCE

Sponsored by:
Introduced:
Public Hearing:
Action:

MATANUSKA-SUSITNA BOROUGH
ORDINANCE SERIAL NO. 23-002

AN ORDINANCE OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY AMENDING MSB 17.55 AND MSB 17.80 TO ALLOW BUILDINGS TO BE BUILT WITHIN 75 FEET OF A WATERBODY.

BE IT ENACTED:

Section 1. Classification. This ordinance is of a general and permanent nature and shall become a part of the Borough Code.

Section 2. Amendment of subsection. MSB 17.55.020 is hereby amended to read as follows:

(A) Except as provided in subsection**s (F) and (G)** [(B)] of this section, no [STRUCTURE OR FOOTING] **building greater than 480 square feet** shall be located closer than 75 feet from the ordinary high water mark of a body of water. [EXCEPT AS PROVIDED OTHERWISE,] [E]**E**aves may project three feet into the required setback area.

[(B) DOCKS, PIERS, MARINAS, AIRCRAFT HANGARS, AND BOATHOUSES MAY BE LOCATED CLOSER THAN 75 FEET AND OVER THE WATER, PROVIDED THEY ARE NOT USED FOR HABITATION AND DO NOT CONTAIN SANITARY OR PETROLEUM FUEL STORAGE FACILITIES. STRUCTURES PERMITTED OVER WATER UNDER THIS

SUBSECTION SHALL CONFORM TO ALL APPLICABLE STATE AND FEDERAL STATUTES AND REGULATIONS.

(1) BOATHOUSES OR AIRCRAFT HANGARS WHICH ARE EXEMPT FROM A MINIMUM SHORELINE SETBACK FOR STRUCTURES SHALL:

(A) BE BUILT OVER, IN, OR IMMEDIATELY ADJACENT TO A WATERBODY AND USED SOLELY FOR STORING BOATS AND BOATING ACCESSORIES;

(B) BE DESIGNED, CONSTRUCTED AND ORIENTED FOR PRIMARY ACCESS BY BOATS OR AIRCRAFT DIRECTLY TO A WATERBODY;

(C) NOT HAVE MORE THAN INCIDENTAL ACCESSORY ACCESS TO A STREET OR DRIVEWAY; AND

(D) NOT BE USABLE AS A GARAGE OR HABITABLE STRUCTURE WITHOUT SIGNIFICANT ALTERATION.

(C) IN THE CITY OF WASILLA, THIS SECTION DOES NOT APPLY TO STRUCTURES WHERE CONSTRUCTION WAS COMPLETED PRIOR TO NOVEMBER 16, 1982. ELSEWHERE IN THE BOROUGH, THIS SECTION DOES NOT APPLY TO STRUCTURES WHERE CONSTRUCTION WAS COMPLETED PRIOR TO JANUARY 1, 1987, IF THE PRESENT OWNER OR OWNERS OF THE PROPERTY HAD NO PERSONAL KNOWLEDGE OF ANY VIOLATION OF THE REQUIREMENTS

OF THIS SECTION PRIOR TO SUBSTANTIAL COMPLETION OF THE STRUCTURES. THE DIRECTOR OF THE PLANNING DEPARTMENT SHALL, UPON APPLICATION BY A PROPERTY OWNER, DETERMINE WHETHER A PROPERTY QUALIFIES FOR AN EXCEPTION UNDER THIS SUBSECTION.

(1) AN APPLICATION FOR A SHORELINE SETBACK EXCEPTION SHALL INCLUDE A FILING FEE AS ESTABLISHED BY RESOLUTION OF THE ASSEMBLY.]

[(D) IN THIS SECTION, A "STRUCTURE" IS ANY DWELLING OR HABITABLE BUILDING OR GARAGE.]

(E) No part of a subsurface sewage disposal system shall be closer than 100 feet from the ordinary high water mark of any body of water. [THE PLANNING COMMISSION SHALL REQUIRE THIS DISTANCE BE INCREASED WHERE NECESSARY TO PROTECT WATERS WITHIN THE BOROUGH.]

(F) Buildings that are in existence or have commenced construction within 75 feet of a waterbody prior to April 1, 2023 are granted pre-existing legal nonconforming status in accordance with MSB 17.80.020(A).

(G) New buildings greater than 480 square feet, or proposals to enlarge or alter existing buildings granted pre-existing legal nonconforming status under (F) of

this section, may be located within 75 feet of a waterbody provided:

(1) they are designed and constructed in accordance with plans sealed by a professional structural engineer licensed in the State of Alaska in accordance with Alaska Statute 08.48.

(a) the building shall be designed in a manner that ensures structural integrity, provides suitable soils for a stable foundation, and protects surface and subsurface water quality.

(2) prior to construction, the engineered plans and specifications shall be submitted to the planning department for an engineering review by a public works engineer as part of a mandatory land use permit, in accordance with MSB 17.02.

(3) the development is constructed in accordance with local, state, and federal laws.

Section 3. Amendment of subsection. MSB 17.55.010(E) is hereby amended to read as follows:

(E) If a condemnation by a governmental agency reduces the building line setback of a structure below 25 feet, but there remains at least ten feet setback, and the setback reduced by the condemnation met the

requirements of this section prior to the condemnation, the resulting setback shall be the setback requirements for the lot.

(1) structures that have a reduced building setback due to condemnation under this subsection are granted pre-existing legal nonconforming status in accordance with MSB 17.80.020(A).

Section 4. Amendment of subsection. MSB 17.80.020(B) is hereby amended as follows:

(B) The following structures require an administrative determination in order to be granted legal nonconforming status;

(1) structures granted a variance in accordance with Chapter 17.65;

[(2) STRUCTURES BUILT IN VIOLATION OF SHORELINE SETBACK ORDINANCES EXISTING AT THE TIME OF CONSTRUCTION, AND SUBSEQUENTLY GRANTED AN EXEMPTION FROM SHORELINE SETBACKS IN ACCORDANCE WITH MSB 17.55.020(C);]

(3) permanent structures built in violation of ordinances existing at the time of construction, and subsequently granted legal nonconforming status in accordance with MSB 17.80.070.

Section 5. Effective date. This ordinance shall take effect

upon adoption.

ADOPTED by the Matanuska-Susitna Borough Assembly this - day of -, 2022.

EDNA DeVRIES, Borough Mayor

ATTEST:

LONNIE R. McKECHNIE, CMC, Borough Clerk

(SEAL)

Alaska News

Alaska task force's final report calls for new rules

Updated: December 10, 2022
Published: December 9, 2022

Spawning chum salmon spawning swim in 1990 in Kitoi Bay near Kodiak. With Western Alaska chum and Chinook salmon runs collapsing, there are widespread complaints that too many salmon are being intercepted at sea by large trawl vessels. A task force created by Gov. Mike Dunleavy has recommended

multiple steps to address bycatch of salmon, halibut and crab. (Photo by David Csepp/NOAA Alaska Fisheries Science Center)

New controls on how fish are commercially harvested and more research to understand the effects of climate change in the ocean and in freshwater spawning grounds are some of the key recommendations of an Alaska task force examining ways to address bycatch, the term for capture of untargeted species in commercial seafood harvests.

Gov. Mike Dunleavy, who created the task force a year ago, released the group's final report late Thursday.

"I look forward to working with task force members and stakeholders to do everything we can to get more fish to return to Alaska's waters," Dunleavy said in a statement.

The collapse of salmon runs vital to western Alaska — and public complaints that too many salmon were being intercepted at sea before returning to spawning grounds — triggered the creation of the Alaska Bycatch Task Force. However, its work extended to bycatch of various crab species and halibut.

[Live event Dec. 12: Boom and bust in the Bering Sea — and the fate of crab and sockeye in a warming world]

Crab stocks, like salmon, have also collapsed. Population crashes spurred closures this year for two important harvests, the Bering Sea snow crab fishery and the Bristol Bay red king crab fishery.

To some degree, bycatch is unavoidable, the task force said.

“All fisheries have bycatch. Through our work we saw a need, and made recommendations for, continued work on incentives and methods to avoid and reduce bycatch. In regards to the long term, there is a need to find ways to better utilize unavoidable bycatch,” John Jensen, the task force chairman, said in an introductory statement in the final report.

One recommendation in the report is for the state to establish a “scientific-based” firm cap on chum salmon bycatch in the Bering Sea pollock fishery.

Such a cap has long been in place for chinook salmon, a species that is the subject of a U.S.-Canada treaty. However, the North Pacific Fishery Management Council, the panel that regulates commercial fishing in federal waters, has so far declined to set any cap on bycatch of any other salmon species.

Another recommendation is to expand the number of people observing the trawl fleet operating in the Gulf of Alaska. To better track bycatch of prohibited species, all vessels conducting bottom trawling in the Gulf should have certified fishery observers posted onboard, the report said. Trawling is a term for fishing with a large, wide net that a ship drags, often to harvest groundfish near the sea bottom.

Those observers are already required on all pollock trawlers operating in the Bering Sea, but only partial observer coverage is currently required for vessels operating in the smaller Gulf of Alaska harvests.

The North Pacific Fishery Management Council is scheduled to review the task force findings at its ongoing meeting in Anchorage. The council is meeting through early next week to set 2023 groundfish harvest levels and take other actions.

The council on Friday rejected a proposed emergency rule that would bar fishing for six months in an area measuring about 3,900 square nautical miles that is considered to be essential habitat for red king crab.

The rule was requested by Bering Sea crab harvesters, who say the ban would prevent crabs from being injured or killed by trawl gear that scrapes the seafloor.

Emergency action is justified, Jamie Goen, executive director of the Alaska Bering Sea Crabbers organization, said in a letter to the council. “Time is of the essence for protecting this stock,” she said.

Representatives of the trawling harvesters oppose the emergency rule, questioning its efficacy. In their written comments to the council, leaders of the At-Sea Processors Association and United Catcher Boats say there is exceedingly low red king bycatch by the trawl fleet, and that pushing trawl vessels out of the designated red king crab protected area would increase the risk of bycatch of salmon and other species.

Ultimately, council members decided that the rule sought by the crab harvesters was not supportable. “I agree most cerntaintly that this is an emergency. It just doesn’t merit the criteria of the emergency action,” member Andy Mezirow said before voting to with the rest of the council to reject the proposed rule.

Originally published by the Alaska Beacon, an independent, nonpartisan news organization that covers Alaska state government.

ALASKA BYCATCH REVIEW TASK FORCE

FINAL REPORT – NOVEMBER 2022

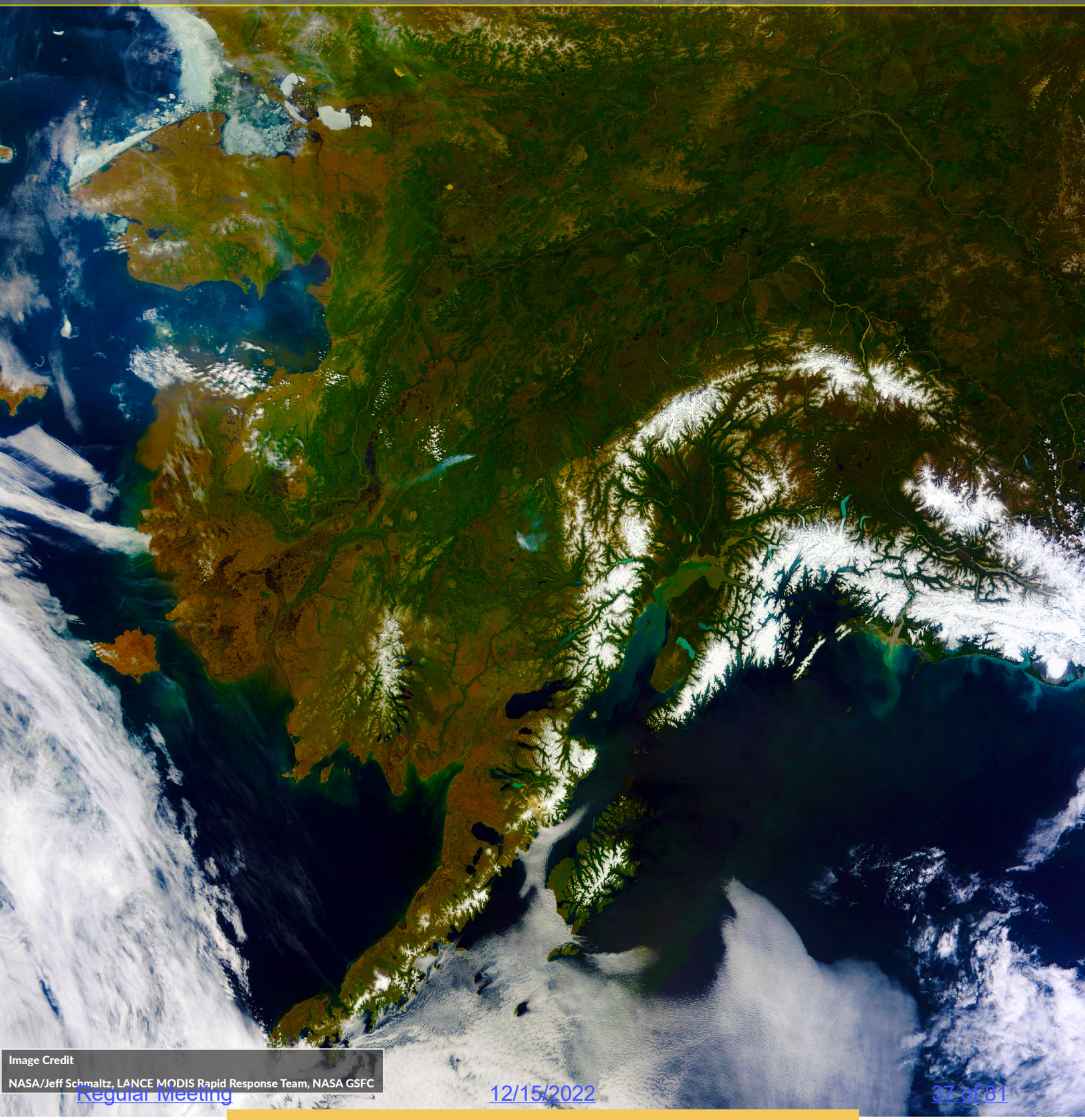

Image Credit

NASA/Jeff Schmaltz, LANCE MODIS Rapid Response Team, NASA GSFC

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APPENDIX — COMMITTEE REPORTS

Bairdi Crab

Photo courtesy of Cory Lescher

The members of the Task Force would like to extend special thanks to ADF&G staff for the time and hard work that went into supporting our process and publication of the final report.

1. MESSAGE FROM THE CHAIR

Healthy and sustainable Alaskan fisheries are important for everyone in our state. Last November, Governor Dunleavy took action to build on Alaska's record as a fisheries conservation leader by creating the Alaska Bycatch Review Task Force (ABRT). Bycatch is an important issue, and Governor Dunleavy created this Task Force to ensure a broad cross-section of Alaskans were involved in reviewing its impacts and making recommendations. As Chair of the ABRT, I am pleased to present the product of the Task Force work.

The Task Force developed four distinct committees to ensure that we examined bycatch from a range of angles, covering different areas and species of interest. Three separate subcommittees worked to review bycatch issues impacting Western Alaska salmon, Gulf of Alaska and Bering Sea crab, and Gulf of Alaska salmon and halibut. The fourth subcommittee was focused specifically on science, technology and innovation. The committee work centered around three areas of investigation: research, state engagement, and management.

Several themes surfaced during our work. One was the interconnections between research and need for that information to inform management recommendations. Second was the role the State has in advocating, coordinating and securing research funding and finally the importance of improved communication with Alaskans on the topic of bycatch.

All fisheries have bycatch. Through our work we saw a need, and made recommendations for, continued work on incentives and methods to avoid and reduce bycatch. In regards to the long term, there is a need to find ways to better utilize unavoidable bycatch. Our recommendations reflect the need to address this by taking incremental measures through regulatory processes to improve bycatch utilization with a particular focus on species that are otherwise marketable, but are caught with non-targeted gear, or discarded in a directed fishery as required by regulation.

As Task Force members, we are acutely aware that many Alaskans have strongly held views about bycatch in our fisheries. Although we understood it would be impossible to meet all expectations, our commitment was to work hard to understand all aspects of the challenge and make recommendations grounded in the best available science. Our hope throughout this process was that by advancing our work transparently, and with public participation at every stage, Alaskans will have confidence in our recommendations, and that our work will serve to strengthen fisheries conservation in our state. We hope you agree.

John E. Jensen
Chair

2. INTRODUCTION / Administrative Order

ADMINISTRATIVE ORDER No. 326

I, Mike Dunleavy, Governor of the State of Alaska, under the authority of Article III, Sections 1 and 24 of the Alaska Constitution, and in accordance with AS 44.19 .145(c), hereby order the establishment of the Alaska Bycatch Review Task Force (ABRT).

BACKGROUND AND PURPOSE

Bycatch is defined as fish which are harvested in a fishery but are not sold or kept. Simply put, bycatch occurs when fishermen unintentionally catch fish, or other marine species, they do not want, cannot sell, or are not allowed to keep.

The ABRT is hereby established for the purpose of exploring the issue of bycatch and providing recommendations to policy makers with the goal of improving the health and sustainability of Alaska's fisheries, and protecting Alaska's record as a leader of fisheries' conservation and sustainability.
More specifically, the ABRT shall:

- Study what impacts bycatch has on fisheries.
- Evaluate and recommend policies informed by a better understanding of the issue of bycatch of high-value Alaska fishery resources.
- Ensure state agencies are leveraging available resources to better understand the issue of bycatch.
- Utilize the best available science to inform policy makers and the public about these issues.

COMPOSITION

The Bycatch Review Task Force will consist of 13 voting members who are appointed by, and serve at the pleasure of the Governor, and two non-voting members requested by the Governor as detailed below. The Governor shall select a Chair and Vice Chair from the voting members.

Two voting members from the State of Alaska:

- The Commissioner of the Department of Fish and Game, or the Commissioner's designee.
- The Commissioner of the Department of Commerce, Community, and Economic Development, or the Commissioner's designee.

Eleven voting members, who are not state officials:

- One representative who serves on the North Pacific Fishery Management Council.
- One representative of an organization representing Community Development Quota (CDQ) entities in the state.
- One representative who is an active trawl fisherman or representative of the trawl sector in the state.
- One representative who actively harvests salmon or who represents salmon fishermen in the state.
- One representative who actively harvests crab or who represents crab fishermen in the state.
- One representative who is an active halibut fisherman or who represents halibut fishermen in the state.
- One representative who is an active fishing charter operator or who represents charter operators in the state.
- One representative of the general public.
- One representative of an organization that represents Alaska Natives in the state.
- One representative of an organization that represents personal use and sport fishermen in the state.
- One mayor from a coastal Alaskan community.

Two ex-officio non-voting members:
The Governor requests two non-voting ex-officio members, one who is a member of the Alaska State Senate appointed by the Senate President, and one who is a member of the Alaska House of Representatives, appointed by the Speaker of the House. Failure of the Legislature to appoint these members shall not prevent the Task Force from completing its duties and responsibilities as outlined herein.

2. INTRODUCTION / Administrative Order (continued)

ADMINISTRATIVE SUPPORT

The Alaska Bycatch Review Task Force is assigned to the Department of Fish and Game for administrative purposes.

GENERAL PROVISIONS

Consistent with law and available appropriations, each designated state agency shall use existing personnel and monetary resources to comply with this Order.

Task Force members receive no compensation or other remuneration from the State as members of the Task Force. However, members of the Task Force who are not state or federal employees are entitled to per diem and travel expenses in the same manner permitted for members of state boards and commissions under AS 39.20.180. Per diem and travel expenses for members of the Task Force who are a representative of a state or federal agency are the responsibility of that agency.

The Task Force may create advisory-only subcommittees.

The Task Force will meet monthly, at a minimum. Additional meetings may be called by the Chair. The Task Force and its subcommittees will use teleconferencing and other electronic means, to the extent practicable, in order to gain maximum public participation at minimum cost.

At times and locations to be determined by the Chair, the Task Force may convene public meetings to present information and receive comments.

Meetings of the ABRT and any subcommittee shall be conducted in accordance with AS 44.62.310 - 44.62.319 (Open Meetings Act).

Records of the ABRT and any subcommittee are subject to inspection and copying as public records under AS 40.25.110 - 40.25.220.

EFFECTIVE DATE AND DURATION

This Order takes effect immediately.

The ABRT will sunset on November 30, 2022.

3. ALASKA BYCATCH TASK FORCE MEMBERS

From left to right. Back row: Representative Bryce Edgmon, Ragnar Alstrom, Erik Velsko, Tommy Sheridan, John Jensen, Brian Gabriel, Governor Mike Dunleavy, Mike Flores, Commissioner Douglas Vincent-Lang. Front row: George Guy, Linda Kozak, Karma Ulvi, Stephanie Madsen, Duncan Fields, Raymond May. Not pictured: Senator Peter Micciche, Kevin Delaney, Director Jim Andersen

John Jensen: Chair — John is a life-long Alaskan, a retired commercial fisherman and owner of a company specializing in self-guided, recreational boating in Petersburg, Alaska. John's career in commercial fishing began in 1966 long-lining for halibut in the Gulf of Alaska, salmon in Southeast Alaska, and red king crab in the Bering Sea. Throughout the years he participated as a crewman, and as the vessel and permit owner in various individual fisheries – species and gear types. John has always been keenly interested in the management, regulation, and sustainability practices of all Alaska fisheries for all users. He was appointed to the Alaska Board of Fisheries (BOF) in 2001 and has been a member of the Board for twenty-one years. In 2018, he was appointed to the North Pacific Fisheries Management Council (NPFMC) and is now serving a second term. John is married, with two sons who are also invested in Alaska's commercial fishing industry; all reside in Southeast Alaska.

Tommy Sheridan: Vice-chair — Tommy is a fisheries consultant, researcher, and educator based out of Cordova, Alaska. He has lived, worked, studied, and taught in Alaska for the past two decades, with a focus on commercial fishery management and salmon hatchery operations. Tommy is an active public servant for several local, statewide, and international bodies, and was appointed as a United States Representative to the North Pacific Anadromous Fish Commission in 2020 where he continues to serve the commission as Alaska's Commissioner. He holds the public member seat on the Task Force.

Ragnar Alstrom: Ragnar was born at Alakanuk located on the Yukon River Delta and has lived in Alakanuk all his life. He is married and has three grandchildren. Ragnar has been the Executive Director of the Yukon Delta Fisheries Development Association, a Community Development Quota group, since 1999. He has participated in cod and halibut fisheries out of Unalaska/Dutch Harbor, holds a limited license crab permit for Norton Sound red king crab, and owns limited entry permits for salmon and herring. Ragnar has served on numerous councils, boards, commissions and panels at the local, regional, statewide and/or international level throughout his career. He holds the Community Development Quota representative seat on the Task Force.

Jim Andersen: Jim was raised in Cordova and fished with his family on the Copper River Flats and Prince William Sound until the Exxon Valdez oil spill. Mr. Andersen moved to Sitka and attended Sheldon Jackson College where he met his wife, and they settled in Juneau where Mr. Andersen has been administering the Commercial Fishing Revolving Loan Fund for the State of Alaska for almost 30 years. During this time Mr. Andersen has traveled throughout Alaska working with young Alaskans in moving from the deck to the wheelhouse for the first time, or assisting seasoned fishermen upgrading their operations, or expanding into new fisheries. Mr. Andersen is the delegate for the Commissioner of the Department of Commerce, Community, and Economic Development, Julie Sande.

3. ALASKA BYCATCH TASK FORCE MEMBERS (CONTINUED)

Kevin Delaney: Kevin Delaney is a fishery management consultant working under contract with Kenai River Sportfishing Association. Delaney retired in 2000 after 26 years with ADF&G where he last held the position of Director of the Division of Sportfish. Delaney worked as a Financial Advisor for the Union Bank of Switzerland for ten years following his retirement from ADF&G and has owned and operated Delaney Outdoors, a fishery management consulting company since 2009. Delaney has worked extensively with the BOF on fishery management plan development and was a member of the Alaska Sustainable Salmon Fish Policy Committee. He represents personal use and sport fishers on the Task Force.

Bryce Edgmon: Representative Edgmon has represented the 37th District since 2006 and served as speaker from 2019–2021. The district includes all or portions of the Aleutians West and East Borough, Lake and Peninsula Borough, Bristol Bay Borough, and the Yukon-Koyukuk Census Area. Bryce was born and raised in Dillingham, where he fished commercially for salmon and herring for more than twenty years and where he was a longtime chairman of the board for the Alaska Native village corporation, Choggiung Ltd.

Duncan Fields: Duncan grew up in Kodiak and has fished salmon and other species around Kodiak for over 60 years. He worked as an attorney for fishermen on the Exxon Valdez litigation and transitioned into working for the Old Harbor and Ouzinkie Native Corporations to advocate for their fishermen. Duncan developed the Community Quota Entity Program and was appointed to NPFMC advisory panel in 2000 and to the NPFMC in 2007. He was appointed to the Legislative Salmon task force in 2002, the Alaska Fisheries Marketing Board in 2003, and the Alaska Seafood Marketing Institute Board in 2004, 2016, and 2022. Duncan was awarded the Denali Award from the Alaska Federation of Natives in recognition of his service to Alaska's native community in 2004. Duncan's passion is to reestablish fisheries-related economic opportunities for residents of Alaska's coastal communities and to champion Alaska seafood. He holds the seat reserved for an organization representing Alaska Natives on the Task Force.

Mike Flores: Mike first came to Alaska over 30 years ago as a guide/pilot, met his wife Kathryn here in 1990, and together they have raised three boys. He worked for Mark Air until the company closed in November 1995 and then took the opportunity to begin guiding. Now, 25 years later, he and his wife own and operate a fleet of 10 charter boats with 25 employees. He served as the charter representative on the BOF's 2015 GOA Pollock Workgroup, has been on the NPFMC's Charter Halibut Management committee since 2014, and has been a board member for the Recreational Quota Entity that will oversee the charter halibut stamp once it's signed into law. He is currently preparing to serve a second term with the Alaska Big Game Commercial Services Board that oversees big game hunting guides in Alaska as well as air taxi operators and marine transporters. He represents charter operators on the Task Force.

Brian Gabriel: Brian Gabriel has lived on the Kenai Peninsula since 1968 when his family moved from Detroit, Michigan. He worked for 16 years in construction as an electrician before his employment at the Department of Transportation as a signal technician and later as the road foreman. He retired from the State of Alaska in July of 2021 after 24 years of service. Brian and his wife of 39 years, Lisa, have commercial setnetted in Cook Inlet since 1987. He has served on the Kenai City Council since 2010 and has served as Kenai City Mayor since 2016. He holds the seat reserved for a coastal community mayor on the Task Force.

George Guy: George was educated in Anchorage and Fairbanks and received several certificates from the Alaska Institute of Military Science. George served in the Alaska Army National Guard from 1985–1994 and retired with an honorable discharge as Sargent E5. He is the General Manager of Kwethluk, Inc., serves on the Board of Directors for Calista Corporation, and was chair of the Kwethluk Community School. A member of the Organized Village of Kwethluk, George was the director of the Yukon-Kuskokwim Economic Development Council. He represents subsistence users on the Kuskokwim River on the Task Force.

3. ALASKA BYCATCH TASK FORCE MEMBERS (CONTINUED)

Linda Kozak: Linda has had a lifetime of fisheries involvement, beginning as a small child in the Bristol Bay setnet salmon fishery. She began working as a fisheries consultant for hook-and-line and pot gear harvesters in 1988 and has been actively engaged in fisheries policy issues since that time at the BOF, NPFMC, and International Pacific Halibut Commission. In the past 35 years Linda has served on various state and federal committees, as well as a panelist and/or presenter for federal management workshops. She serves as the halibut representative on the Task Force.

Stephanie Madsen: Stephanie has been involved in Alaska fisheries since arriving in Alaska over 45 years ago. She has lived in the fishery-dependent communities of Cordova, Kodiak, Unalaska/Dutch Harbor and now Juneau so Stephanie understands first-hand the importance of healthy, sustainable fisheries to thriving communities. Having served six years on the NPFMC, four of those as Chair, she was involved in establishing the Arctic Fishery Management Plan, the Aleutian Islands Fisheries Ecosystem Plan, and designing catch/share type programs in several fisheries. Madsen continues to serve the NPFMC as a member of the Ecosystem Committee. Stephanie is the Executive Director of the At-Sea Processors Association and represents the trawl sector on the Task Force.

Raymond May: Ray was born and raised on Kodiak Island. He grew up in Port Lions where he learned how to hunt as well as subsistence, personal use, and commercial fishing. Mr. May has lived in Kodiak since 1998 and is the operator and co-owner of the F/V Resilient, a 58-foot commercial fishing boat. He has fishing experience throughout the state and currently fishes commercially for crab, herring, salmon, and black cod. Ray has served on multiple industry boards and committees including his current role as a council member for the Native Village of Port Lions. He serves as the salmon fishery representative on the Task Force.

Peter Micciche: Senator Peter Micciche represents Senate District O on the Kenai Peninsula. Currently serving as the Senate President for the 32nd Legislature, he was elected to the Senate in 2013. Peter is an avid, lifelong sport fisherman and has been fishing commercially for salmon in the Cook Inlet for 30 years. He has also been a small business owner on the Kenai Peninsula since 1983. He is married to Erin and together they have 4 daughters, ranging in age from 8 to 27.

Karma Ulvi: Karma is the Chief of The Native Village of Eagle. Her tribe is the Han Athabascans, and they live on the U.S./Canadian Border where the Yukon River enters Alaska. Karma also serves on the Tanana Chiefs Conference Inter-Tribal Fish Commission and as the Eagle Fish and Game AC Chair. She enjoys hunting and fishing, spending time with the elders, and working for her tribe. She feels that people of the tribe are happiest when they are together in their culture and wanted to participate on the Task Force to try and find answers to why the salmon are in decline and not returning in abundance. She represents subsistence users on the Yukon River on the Task Force.

Erik Velsko: Erik was born and raised in Homer, Alaska. He has been a long-time participant in many fixed-gear state and federal fisheries and has spent extensive time as a licensed mate onboard several Bering Sea fishing vessels. Erik has a B.S. in Marine Transportation and a minor in law from the California Maritime Academy. He also holds a 1600 Ton Master Oceans license. Currently, he's involved in the Bristol Bay salmon gillnet, halibut and sablefish IFQ, state waters Tanner crab, and Pacific cod pot fisheries. Mr. Velsko served on the NPFMC's Advisory Panel from 2019–2021, is currently a member of the NPFMC's IFQ Committee, and is Vice President of the North Pacific Fisheries Association. He holds the seat for a crab fishery representative on the Task Force.

Douglas Vincent-Lang: Commissioner Vincent-Lang spent his 34-year public service career at ADF&G before accepting the position of commissioner in January 2019. He began his work as a fisheries research and management biologist for the Division of Sport Fish in 1981 and held the positions of regional management and research coordinator and assistant director for 28 years in the Division of Sport Fish. In 2012, he was named Director of the Division of Wildlife where he managed Alaska's wildlife under the sustained yield principles and public trust doctrine principles. He led legislative wildlife issues on the state, national and international levels. He holds a B.S. degree in biology/population dynamics from the University of Wisconsin, Green Bay and a M.S. degree in Biological Oceanography from the University of Alaska, Fairbanks. Vincent-Lang lives in Anchorage with his wife and has three children and is teaching his granddaughter to fish, hunt and enjoy Alaska's outdoors.

4. EXECUTIVE SUMMARY

The Alaska Bycatch Review Task Force was formed by Governor Dunleavy with Administrative Order (AO) #326 "to help better understand unintended bycatch of high value fishery resources in state and federal fisheries." The AO defined bycatch as "fish which are harvested in a fishery but are not sold or kept." Among the work requested by Governor Dunleavy, the ABRT shall:

1. Study what impact bycatch has on fisheries.
2. Evaluate and recommend policies informed by a better understanding of the issue of bycatch of high-value Alaska fishery resources.
3. Ensure state agencies are leveraging available resources to better understand the issue of bycatch.
4. Utilize the best available science to inform policy makers and the public about these issues.

BACKGROUND

Fifteen voting and two non-voting members were appointed from all areas of the state representing diverse interests. The voting members represent subsistence, Alaska Native interests, sport charter, personal use, communities, and the commercial sectors of halibut, salmon, crab, and trawl groundfish, as well as representatives from the Department of Fish Game and Department of Commerce, Community and Economic Development.

The work largely fell to four committees to become informed by a better understanding of the bycatch issue in order to prepare research, state engagement and management recommendations. The Science Committee was created to help the other committees organize their presentations and to be a resource for the committees and Task Force.

- Western Alaska Salmon Committee - Cochairs, George Guy and Stephanie Madsen
- Bering Sea and Gulf of Alaska Crab Committee - Chair Linda Kozak
- Gulf of Alaska Halibut and Salmon Committee - Chair Mayor Brian Gabriel
- Science, Technology and Innovation Committee - Chair Tommy Sheridan

Between full Task Force and committee meetings, there have been 43 meetings since the organizational meeting in January. Over 40 presentations have been given thus far from agencies, research organizations, and industry groups.

All presentations and other meeting information can be found on the Task Force website at:
https://www.adfg.alaska.gov/index.cfm?adfg=bycatchtaskforce.main

RECOMMENDATIONS

The recommendations from the Task Force on research, State engagement, and management are not prioritized or ranked in any specific order.

Bycatch research was an important topic. The Task Force provides three general and three specific recommendations for the state to utilize when developing research priorities. There were also specific species research recommendations. Noted several times was the strong connection between research needed to support many of the management recommendations.

State engagement opportunities were discussed, and six proposals were adopted by the Task Force. These included recommendations for outreach and providing ways for interaction with the public on bycatch issues. It was agreed that the establishment of this Task Force was a good beginning to address bycatch policy, but more work is needed and the recommendations for a permanent bycatch advisory entity and the development of a state bycatch policy are important next steps.

Management was the last area the committees addressed. A total of 17 management recommendations were unanimously adopted by the Task Force addressing bycatch in the fixed and trawl gear groups for the Bering Sea and Gulf of Alaska. These include a review of open and closed areas, observers and electronic monitoring, rationalization as a tool, and prohibited species caps. Recommendations made by the Task Force are responsive to issues raised by presentations, managers and stakeholders and it is recognized that while many of the recommendations are already underway or being considered, it was important to offer support to those actions.

The issues surrounding prohibited, regulatory and economic bycatch discards have been discussed for many years and will continue to remain an important topic. Balancing impacts to Alaska fisheries while ensuring the sustained yield of those resources and optimizing economic, social, and cultural values presents an extremely difficult challenge.

While bycatch can and should be reduced, it cannot be completely eliminated without significant economic consequences. The goal then, is continuous work to reduce bycatch and this can only be achieved through research, implementation of effective management measures, and public engagement.

5. TASK FORCE RECOMMENDATIONS

5.1. RESEARCH RECOMMENDATIONS

Research is the key to continued understanding of the impacts of bycatch and improvements in reducing bycatch. Generous funding is the key to support new and continuing research projects.

These recommendations identify specific research to better understand the issue of bycatch and determine if and how to better leverage available resources. It addresses two tasks identified in Administrative Order (AO) 326 which are to:

"Study what impacts bycatch has on fisheries"
"Ensure state agencies are leveraging available resources to better understand the issue of bycatch"

5.1.1. General Research Recommendations

The ABRT discussions highlighted the difficulty in identifying research that is strictly bycatch focused. Most agreed that there were clear research needs to reduce bycatch, but there is also a need to improve our understanding of the target species in order to identify impacts to those species from bycatch. Gaps were identified that need to be addressed for managers to more fully understand and assess what impacts bycatch may have on some fisheries.

The recommendations from the Task Force on research, State engagement, and management are not prioritized or ranked in any specific order.

GENERAL TASK FORCE RECOMMENDATIONS FOR PROCESS IN DEVELOPING RESEARCH PRIORITIES

- *Develop state bycatch research priorities, utilizing input from communities, Alaska Native tribes, industry, and the public, to share with funding entities that would help identify and acquire research funds.*
- *Implement strategies to encourage and facilitate industry/agency cooperative research to reduce bycatch and associated mortality.*
- *Create methods for collaboration with Alaska Native tribes, organizations, and other research entities to better track proposed or funded bycatch research, along with developing opportunities for cooperative projects and combined reporting of findings.*

The Task Force recommends the State develop an inclusive process for identifying bycatch research, broadly share those research needs and seek partnerships to fund the necessary research.

Juvenile Red King Crab — Photo courtesy of Cory Lescher

It was notable that three research recommendations crossed species and management areas. All three areas are important to improve bycatch avoidance:

Gear Modifications/Improved Technology
One of the areas that was bycatch focused and extended across areas and species was the need for gear research. Research such as salmon excluder work, pot modifications and use of technology in identifying "hot spots" was discussed. This area requires collaboration with industry and would benefit from agency support. Regulatory action may be appropriate when gear modifications prove to be effective in reducing bycatch.

Update Assumed Discard Mortality Rates
Assumed discard mortality rate studies, which inform stock assessments and other management measures, are outdated and may not reflect current industry technology and handling practices.

Shifting Distribution Patterns
Data is necessary for determining the shifts in patterns with the changing climate. Both salmon and crab have experienced shifting distribution patterns and it is critical to understand these patterns, both temporally and spatially, to ensure the best information is being used when developing bycatch mitigation measures.

The following recommendations targeted to specifically address the research needs for bycatch of salmon, halibut, and crab were adopted by the ABRT. These are important projects which would help inform managers and stakeholders as they consider measures to address bycatch.

5.1. RESEARCH RECOMMENDATIONS

5.1.2. Salmon Recommendations

Much of the salmon research identified was similar for both the Bering Sea/Aleutian Island and the Gulf of Alaska. Listed below is the research identified for Western Alaska salmon and research which is unique for the Gulf of Alaska.

Western Alaska Salmon

Research Goals

- Research to improve our ability to determine the stock of origin of chum and Chinook salmon taken as bycatch.
- Research to reduce bycatch through improved understanding of distribution and migration of Western Alaska chum and Chinook salmon stocks migration patterns to better predict and therefore avoid bycatch "hot spots" in the BSAI region.

Research that helps us understand the relative importance of particular mechanisms for driving abundance of Western Alaska Chinook and chum.

a) Improved information on marine migration patterns and its relation to fishery locations and timing.

i. The projects AFSC mentioned that Sabrina Garcia (Chinook salmon) and Wes Larson (chum salmon) are leading in the Bering Sea: Model ocean distribution and migration of AK Chum and Chinook salmon stocks in the Bering Sea to predict distribution and hotspots.

ii. A tagging project of immature chum salmon in the North Pacific Ocean to help us understand their destination, timing, and maturity.

iii. A synthesis of marine migration information from fishery-dependent data sources, marine surveys, and tagging studies, and how these patterns have changed with a changing climate.

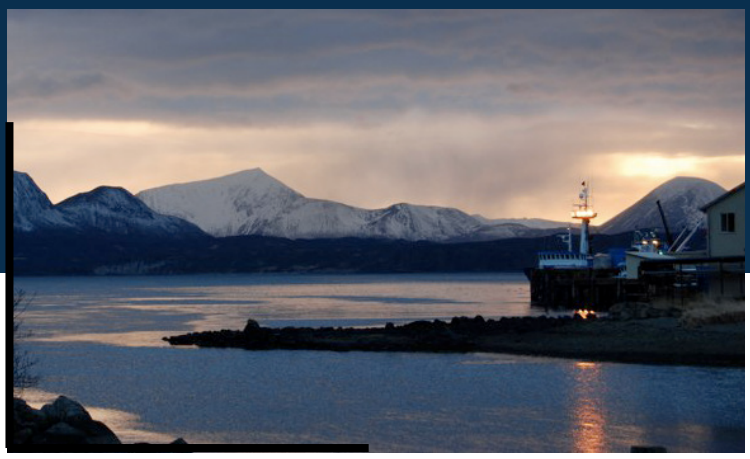
b) Improved information on the characteristics of fishery catches.

i. There are still improvements that can be made in the ability to assess age, and specifically stock-specific age of Chinook and chum salmon caught in any marine fisheries.

c) Improved information to help understand fishery impacts

i. Improved Adult Equivelant (AEQ) modeling through 'stock specific' chinook and chum salmon bycatch. Particularly for western Alaska chum salmon, AEQ analyses are limited by:

- age classification data gaps in adult chum abundance across all of the western Alaska stock group. Studies that improve the ability to estimate abundance of all chum salmon in the western Alaska stock reporting group. Continued genetics work is needed.
- the ability to break up that reporting group. This might be remedied by using technologies that go beyond genetic assignment alone (use of pathogens, stable isotopes, etc.).



5.1. RESEARCH RECOMMENDATIONS

5.1.2. Salmon Recommendations (continued)

Western Alaska Salmon

Research that can provide an additional (non-adult) abundance estimate

This will be really powerful for helping triangulate which life stages are most important for determining good or poor productivity. The committee recommends that research should span the life-cycle of the salmon species.

a) Understand critical survival periods for western Alaska salmon through integrated ecosystem assessment surveys including expansion of the northern Bering Sea pelagic trawl survey into the near shore waters north of the Yukon River including Norton Sound.

- **i.** Similar research is being planned in the southern Bering Sea to have a more comprehensive assessment of Western Alaska Chinook and chum. **NOTE**: Neither of these projects are funded beyond 2023.
- **ii.** Ecosystem indicators: summer sea temperature, phytoplankton/zoo plankton community structure; salmon and pelagic fish catch per unit effort, distribution, energy density for fitness, size, stomach contents. These indicators are being utilized to understand climate impact on the northern Bering Sea ecosystem, fish fitness and survival. The recent information from the northern Bering Sea pelagic trawl survey suggests that the marine heat wave within the NBS during 2016 to 2019 negatively affected juvenile Chum salmon fitness (shift to low quality prey, increased metabolic rates due to higher SST), likely leading to high winter mortality. The data suggest that Chinook salmon abundance is impacted by factors affecting them in freshwater and early marine residence.

b) Studies that help understand how ocean/climate conditions impact future runs

- **i.** Marine pelagic trawl surveys in the northern and southern Bering Sea can help us address this (see above).
- **ii.** NOAA and ADF&G are collaborating on using International Year of the Salmon (IYS) catches and samples to examine immature AYK chum salmon in the North Pacific Ocean during winter. (This is not yet funded.)
- **iii.** Immature salmon surveys (like the IYS surveys) in the Bering Sea and North Pacific Ocean. There is currently no funding support for charter vessel to conduct the survey, collecting and processing samples or paying for gear and supplies.

c) Studies that help us understand the role of diet, health, and disease on the survival and spawning success of Western AK Chinook and chum

- **i.** Understanding vectors of Ichthyophonus infection for Yukon Chinook salmon, and whether it is causing significant en route mortality during the spawning migration
- **ii.** Understanding diet, nutrition, and condition of Western AK Chinook and chum stocks at juvenile (marine pelagic trawl surveys in the northern and southern Bering Sea – see above), immature (IYS surveys, industry catches, etc.), and adult life stages (returning samples from lower river test fisheries- pilot work started for Yukon Chinook, but only funded through 2022).

5.1. RESEARCH RECOMMENDATIONS

5.1.2. Salmon Recommendations (continued)

Gulf of Alaska Chinook Salmon

Conduct annual genetic and spatial assessment of Gulf of Alaska (GOA) Chinook salmon. This recommendation is intended to include, in addition to the genetic assessment that is currently taking place, that efforts should be made to produce estimates of both the spatial and temporal bycatch of Alaska stocks of Chinook salmon, as well as characterizations of the age, sex and size of the bycatch of Chinook salmon identified as stocks of Alaska origin. If further progress can be made towards identifications of stock of origin of Alaska Chinook salmon taken as bycatch, that too should be pursued.

ADF&G Priorities

a) Studies that help us understand the relative role of marine interceptions and bycatch.

i. Improved information on marine migration patterns and its relation to fishery locations and timing. Extend the distribution and timing projects using bycatch data in the Bering Sea to include the western GOA.

ii. Improved demographic information that will enable assessment of stock specific impacts.

- Collect samples to improve demographic information such as stock, age, sex, size and maturity for Chinook and chum salmon caught in any marine fisheries.
- Improved information to help understand fishery impacts through AEQ or similar analyses.

b) Research that can provide an additional (non-adult) abundance estimate. This is useful for helping triangulate which life stages are most important for determining productivity.

i. Juvenile salmon surveys: a survey occurs annually in the eastern GOA to monitor Southeast Alaska salmon stocks (Southeast Coastal Monitoring project).

- ADF&G will pilot a juvenile salmon survey in the western Gulf of Alaska in 2023. This will align with surveys in the northern and southern Bering Sea and Southeast Alaska to give a comprehensive assessment of Alaska Chinook and chum salmon early in the marine life stages.

Note: neither the GOA nor the Bering Sea projects are funded beyond 2023

c) Studies that help us understand how ocean/climate conditions impact future runs.

i. Marine pelagic trawl surveys in the Bering Sea and Gulf of Alaska (including western/central Alaska and SEAK surveys).

ii. Immature salmon surveys (like the IYS surveys) in the Bering Sea, Gulf of Alaska, and North Pacific Ocean.

5.1. RESEARCH RECOMMENDATIONS

5.1.3. Crab Recommendations

Following are bycatch research recommendations specific to crab in all regions of the state, with projects listed to address the issue.

Areas of Research

Address observed and unobserved mortality caused by gear interactions

a) Study the impacts of repeated capture/discarding of females, sublegal, and legal males.

b) Assumed discard mortality rates should be studied and updated for all gear groups.

c) Address data gaps regarding uncertainties in the directed crab fishery and unobserved state pot Cod fishery.

d) Research habitat disturbance utilizing tools such as the fishing effects model to study effects of bottom contact gear on mating and molting crab.

Continued research on critical crab habitat to better inform on open and closed areas for commercial fishing activity

a) Conduct tagging studies and other research to determine seasonal crab movement and distribution.

b) Work to improve understanding of preferred habitat at various life stages, including mating and molting time and areas.

c) Examine Vessel Minotoring System (VMS) use in developing Essential Fish Habitat models and ways to improve this data.

Photo courtesy of Cory Lescher

5.1. RESEARCH RECOMMENDATIONS

5.1.3. Halibut Recommendations

Top Priority: Investigate better ways to estimate total removals and discard mortality.

Other issues identified by the Gulf of Alaska Halibut and Salmon Committee:

a) Study the impacts of repeated capture/discarding of females, sublegal, and legal males.

b) Impacts of fish gear types on halibut habitat.

c) Increase tagging studies to better understand movement between areas.

d) Investigate halibut diet and growth rate to better understand changes in length at age.

e) Studies on size limit and trade-offs (ongoing at IPHC and report due in October 2022).

f) Determine relative fecundity of halibut based on size and age, and estimate impact on halibut stock.

Photo courtesy of Cory Lescher

5.2. STATE ENGAGEMENT RECOMMENDATIONS

Utilize the best available science to inform policy makers and the public about these issues.

The ABRT identified improvements to the current methods the state uses to communicate bycatch-related information to the public. Many members of the public expressed frustration in accessing information on bycatch. Improved communication on bycatch information and development of a bycatch policy would improve the public understanding and increase public participation. The recommendations suggest some opportunities for improvement.

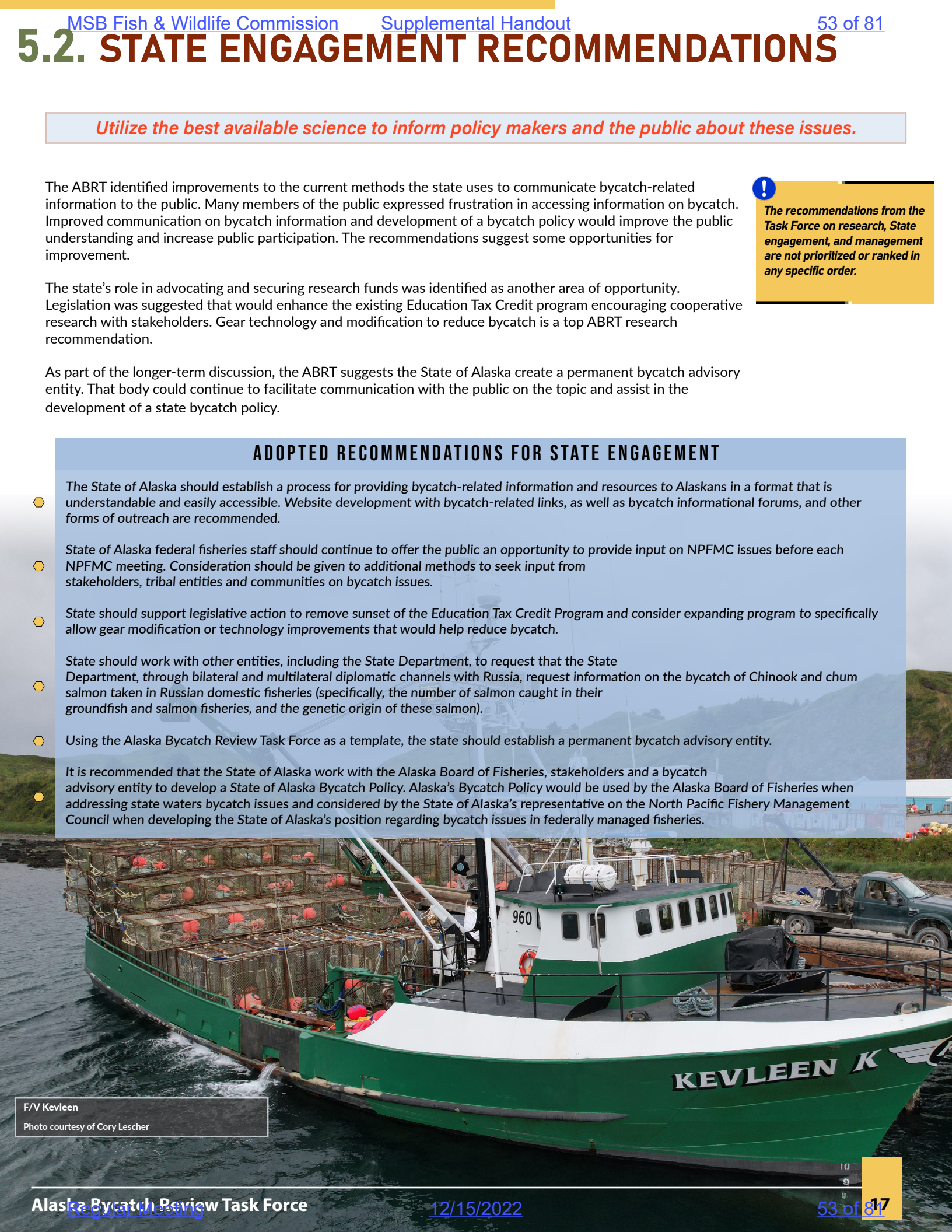
The state's role in advocating and securing research funds was identified as another area of opportunity. Legislation was suggested that would enhance the existing Education Tax Credit program encouraging cooperative research with stakeholders. Gear technology and modification to reduce bycatch is a top ABRT research recommendation.

As part of the longer-term discussion, the ABRT suggests the State of Alaska create a permanent bycatch advisory entity. That body could continue to facilitate communication with the public on the topic and assist in the development of a state bycatch policy.

The recommendations from the Task Force on research, State engagement, and management are not prioritized or ranked in any specific order.

ADOPTED RECOMMENDATIONS FOR STATE ENGAGEMENT

- *The State of Alaska should establish a process for providing bycatch-related information and resources to Alaskans in a format that is understandable and easily accessible. Website development with bycatch-related links, as well as bycatch informational forums, and other forms of outreach are recommended.*
- *State of Alaska federal fisheries staff should continue to offer the public an opportunity to provide input on NPFMC issues before each NPFMC meeting. Consideration should be given to additional methods to seek input from stakeholders, tribal entities and communities on bycatch issues.*
- *State should support legislative action to remove sunset of the Education Tax Credit Program and consider expanding program to specifically allow gear modification or technology improvements that would help reduce bycatch.*
- *State should work with other entities, including the State Department, to request that the State Department, through bilateral and multilateral diplomatic channels with Russia, request information on the bycatch of Chinook and chum salmon taken in Russian domestic fisheries (specifically, the number of salmon caught in their groundfish and salmon fisheries, and the genetic origin of these salmon).*
- *Using the Alaska Bycatch Review Task Force as a template, the state should establish a permanent bycatch advisory entity.*
- *It is recommended that the State of Alaska work with the Alaska Board of Fisheries, stakeholders and a bycatch advisory entity to develop a State of Alaska Bycatch Policy. Alaska's Bycatch Policy would be used by the Alaska Board of Fisheries when addressing state waters bycatch issues and considered by the State of Alaska's representative on the North Pacific Fishery Management Council when developing the State of Alaska's position regarding bycatch issues in federally managed fisheries.*



F/V Kevleen
Photo courtesy of Cory Lescher

5.3 TASK FORCE RECOMMENDATIONS / MANAGEMENT RECOMMENDATIONS

Evaluate and recommend policies informed by a better understanding of the issue of bycatch in high-value Alaska fishery resources.

Management recommendations were developed at the committee level after many meetings, dozens of informational presentations and public comment. The ABRT had additional discussion, made some revisions and came to consensus on all but one. During the discussion it was noted several times the connection between the need for research to inform management actions for both State and Federal fisheries.

The recommendations from the Task Force on research, State engagement, and management are not prioritized or ranked in any specific order.

Focusing on the bycatch management of salmon, halibut, and crab, the Task Force was able to address a variety of issues, some of which are currently be addressed by managers and some that are not. Issues addressed included recommendations for prohibited species caps, open and closed areas, rationalization, and observers/electronic monitoring.

Bycatch utilization was discussed as meeting several goals to reduce bycatch. The ABRT recognized steps would be incremental and not without hurdles but the members felt strongly that it should continue be examined.

Improved Utilization

The State of Alaska should support taking incremental measures through the regulatory process to improve bycatch utilization with a particular focus on species that are otherwise marketable but are caught with non-targeted gear, or discards in a directed fishery that are required by regulation.

Rationale: The ABRT is recommending that a priority be given to addressing a need to increase the utilization of bycatch, both for high-value species and for other species as well. Incrementally increasing retention of fish that are otherwise marketable, but are caught incidentally or are prohibited species, would decrease wastage and provide protein for the world. This would also encourage individual harvesters to avoid bycatch and be more responsive to concerns that edible food not be discarded. There is a recognition that regulatory and logistical issues would need to be addressed in the development of a retention program. Program development could include a revenue stream to fund research, innovation, and fishery monitoring activity.

5.3.1. GULF OF ALASKA FIXED GEAR

- *Following gear modification research, consider regulations for the directed crab fishery and pot cod fishery to reduce incidental take and discard mortality.*
- *Address the lack of monitoring in the directed Tanner crab and state waters pot cod fisheries.*

5.3.2. GULF OF ALASKA TRAWL GEAR

- *Recommend the State of Alaska initiate review of the open and closed areas in the GOA for pelagic and non-pelagic trawl gear and consider closing new/additional areas to reduce the bycatch of halibut, salmon, and Tanner crab.*
- *To better quantify removal of prohibited species, it is recommended that trawl catcher vessels in the Gulf of Alaska be required to have 100% observer coverage when engaged in non-pelagic trawling. It is further recommended that the State of Alaska work to obtain funding, either through specific appropriations and/or grants for the additional coverage.*
- *It is recommended that a regulatory requirement be approved for the Gulf of Alaska pelagic trawl fleet, including any tenders of pelagic trawl caught fish, to have 100% electronic monitoring. It is further recommended that the State of Alaska work with National Marine Fisheries Service, our federal delegation, and others to work to acquire funding to install electronic monitoring equipment on all GOA catchers and tenders.*
- *It is recommended the State of Alaska propose that the NPFMC consider development of an abundance-based management program for halibut bycatch in the GOA as a way to address bycatch during fluctuations of halibut biomass.*
- *It is recommended that the State of Alaska investigate the value of requiring full retention of Tanner crab in all GOA trawl fisheries for a period of time to adequately assess removals.*
- *As a means of reducing and managing bycatch and associated mortality of high-value species within the Gulf of Alaska, it is recommended that rationalization-type management tools be considered.*

5.3. TASK FORCE RECOMMENDATIONS / MANAGEMENT RECOMMENDATIONS (continued)

5.3.3. Bering Sea Fixed Gear

- Evaluate the observer coverage and monitoring for the directed crab and pot cod fisheries.
- Evaluate possible seasonal closures in hot spot areas for pot gear both inside and outside of state managed waters.
- Examine the impact of retaining all legal crab in the directed crab fishery and counting toward IFQ.
- Recommend a rationalization program for the 60' and greater pot cod vessels as a way to manage bycatch and examine prohibited species caps as part of a rationalization program.

5.3.4. Bering Sea Trawl Gear

- The State should work to achieve real time genetic reporting that provides the composition of Western Alaska salmon in the bycatch. This can then be used in management of the pollock fishery to avoid areas and times when Western Alaska salmon are on the grounds in the Bering Sea.
- The State should work to establish a scientific-based chum salmon cap to reduce bycatch of Western Alaska salmon in the pollock fishery in the Bering Sea.
- Review effectiveness of fixed open and closed areas for trawling and continue to examine methods to develop flexible spatial management.
- A review is recommended for the Bering Sea trawl area prohibited species caps (PSC) in relation to crab to be supported by the State of Alaska. This review would examine the impacts to the resource and trawl sector if trawl crab PSC were to be applied across the entire Bering Sea area, instead of only the current sub-areas.

5.3.5. Issue that did not achieve consensus

- It is recommended that BSAI pelagic trawl pollock gear be considered for re-definition as bottom trawl gear (non-pelagic) and that all bottom trawl gear closures apply.

RATIONALE FOR

Open and Closed areas to trawl fishing are utilized to reduce bycatch and limit bottom contact. There are many areas closed to non-pelagic (bottom) trawl gear but open to pelagic (midwater) trawl gear in the BSAI. The distinctions in trawl gear types were primarily predicated on the idea or assumption that pelagic trawl gear was in fact floated in the midwater column and not in contact with the bottom. Previous Council work through EFH studies has highlighted that the pelagic trawl fleet in the Bering Sea is in contact with the bottom with their gear a significant portion of the time. A revision of the pelagic trawl gear definition may need to be entertained since the pelagic gear definition no longer fits the reality of how the fishery is executed on the grounds. Furthermore, bottom trawl gear is required to employ the use of raised sweeps and other bottom-contact limiting devices while pelagic trawl does not require any of these features. There is concern that a pelagic net could in fact, be more detrimental when on the bottom because it does not have the same restrictions as non-pelagic trawl gear.

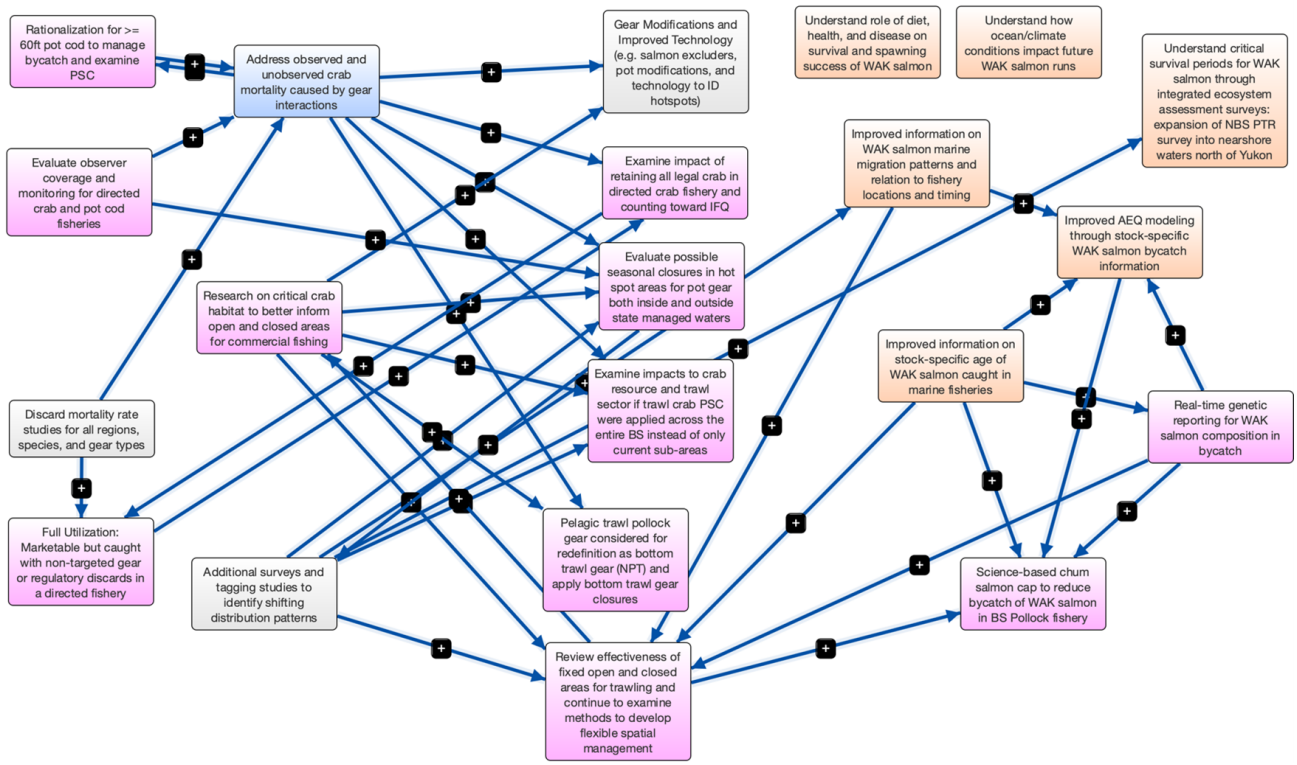
RATIONALE AGAINST

There are extensive closures throughout the BSAI to protect critical habitat (EFH) for a wide variety of species including crab and groundfish. The Council regularly undertakes an exhaustive look at the potential impact of all gear, including pelagic trawl gear on its impact on EFH. The Council is currently in the process of undertaking an EFH review now and the preliminary results continue to show that fishing gear, including pelagic trawl gear, has a temporary and minimal impact on habitat. The EFH review process is the best venue for examining fishery interactions on fish and crab populations and habitat.

Revising gear definitions should be informed by strong scientific information. Changing gear definitions without that information could result in changes in fishing operations that increase bycatch for other species, increase fishing time, or have other unknown effects on EFH. Vessels using pelagic gear are currently reviewing the types of pelagic trawl gear that is being used. Different vessel and gear configurations can have different fishing effects. That information is a critical first step in understanding the potential impact of pelagic trawl gear and should be completed before initiating a regulatory process.

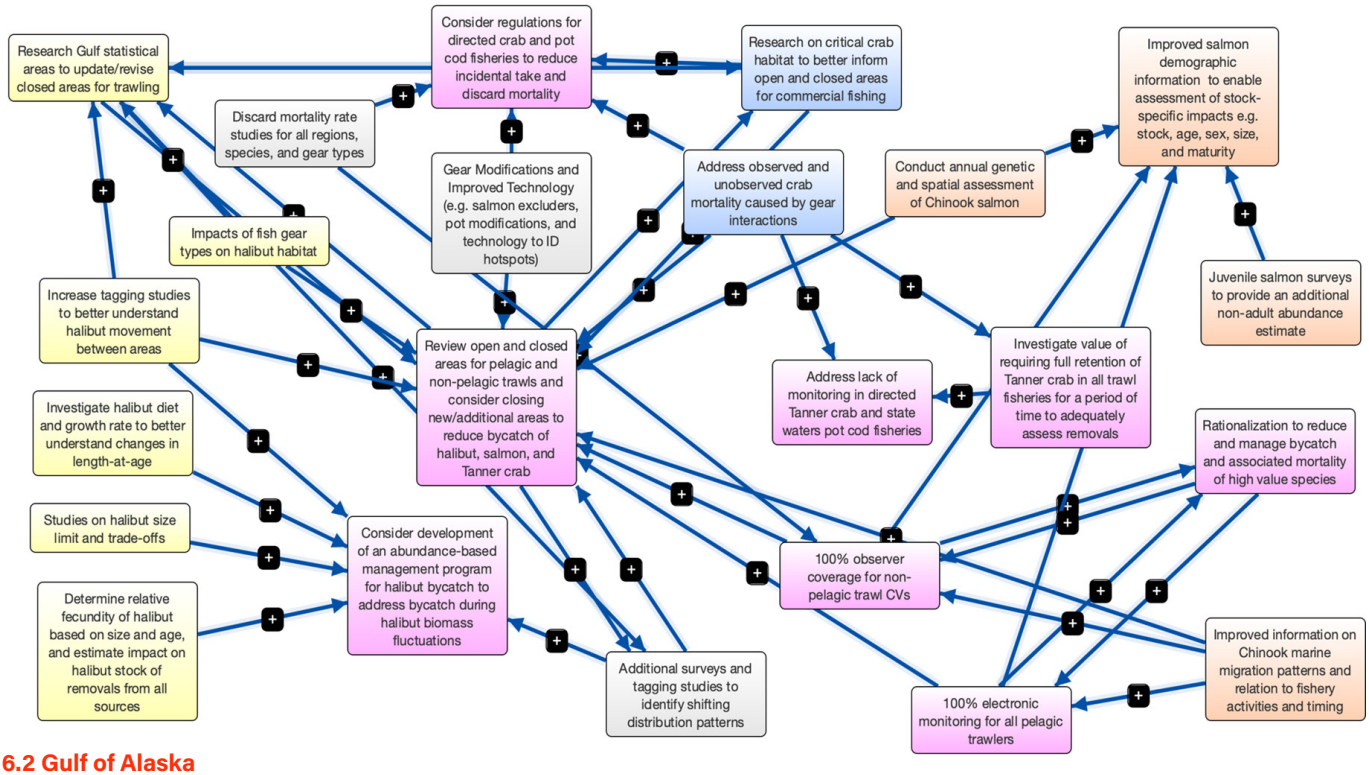
6. CONNECTIONS BETWEEN RESEARCH AND MANAGEMENT

The Task Force noted several times during their discussions that when addressing management recommendations, research was always part of the discussion. Management decisions should be based on the best available science, so it is important to identify and fill those gaps in science needed to underpin management actions. The following diagrams were developed to illustrate the connections between research and management recommendations.



6.1. Bering Sea

Figure 1: Bering Sea Aleutian Islands Research and Management Linkages for Management Decision Making. Arrows indicate directionality of influence.



6.2 Gulf of Alaska

Figure 2: Gulf of Alaska Research and Management Linkages for Management Decision Making. Arrows indicate directionality of influence.

7.1.1. SCIENCE, TECHNOLOGY, & INNOVATION COMMITTEE

Members

Tommy Sheridan, Chair / Ragnar Alstrom / Linda Kozak / Stephanie Madsen / Senator Peter Micciche

Meeting Dates | Information

This Committee met five times and public participation ranged from 20-40 individuals, with public comment provided at each meeting.
http://www.adfg.alaska.gov/index.cfm?adfg=bycatchtaskforce.committees#meetings_abrt

April, 2022
The Committee did not meet in April due to scheduling conflicts.

May 27, 2022
The Committee convened an organizational meeting.

June, 2022
The Committee did not meet in June due to committee members' attendance of the North Pacific Fishery Management Council meeting covering salmon bycatch.

July 7, 2022
The Committee received a presentation on the Basin-Scale Events to Coastal Impacts (BECI) Project titled "An Ocean Intelligence System for a Changing World."

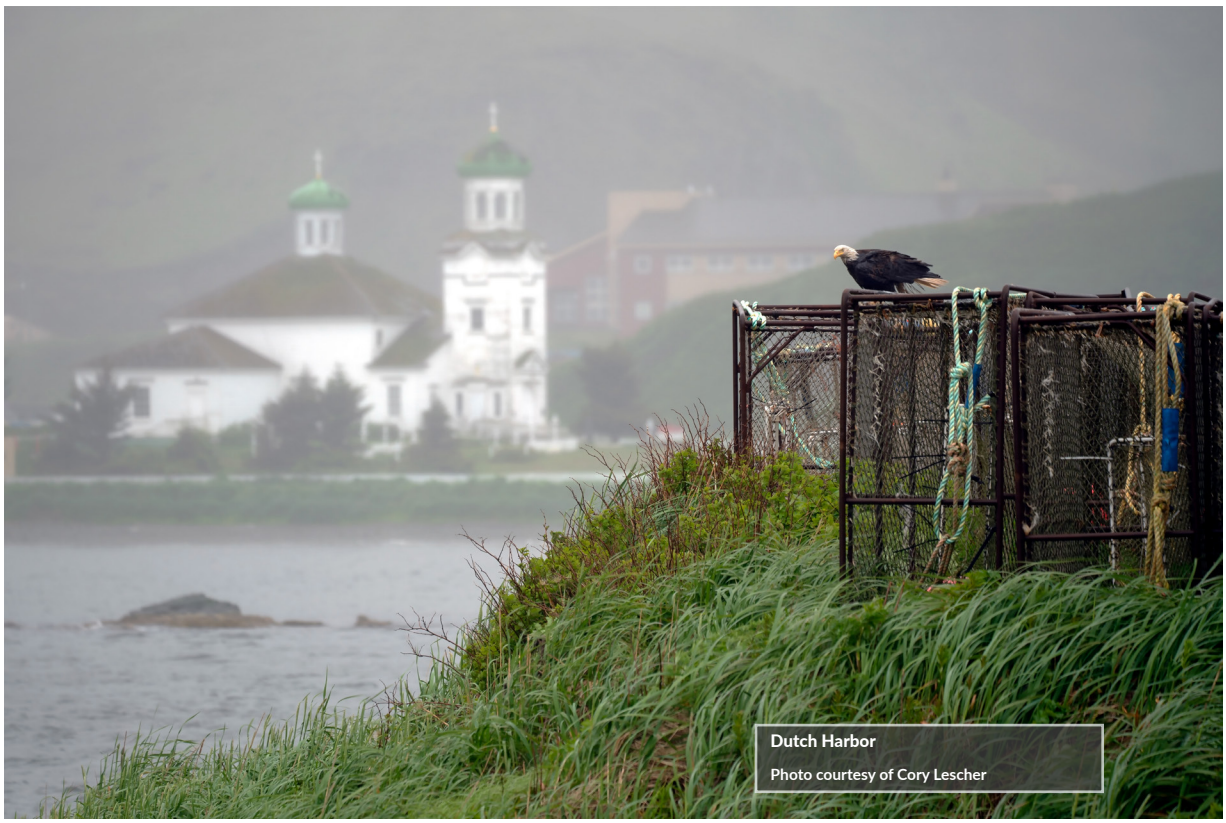
July 28, 2022
The Committee received a presentation on the University of Alaska Fairbanks (UAF) Alaska Blue Economy Center (ABEC).

August 5, 2022
The Committee received presentations on the University of Alaska Fairbanks (UAF) Pollock Conservation Cooperative Research Center (PCCRC) and the Alaska Ocean Cluster (AOC).

The Committee did not meet again in August due to scheduling conflicts, thereby concluding the committee's "information gathering and review" phase.

September 1, 2022
The Committee received and reviewed research recommendations provided by the ABRT Western Alaska Salmon Committee, ABRT Bering Sea and Gulf of Alaska Crab Committee, and Gulf of Alaska Halibut and Salmon Committee.

The Committee has since been engaged with receipt and collation of Committee and Task Force materials for presentation to the public, and inclusion in the ABRT's final Report.



Dutch Harbor
Photo courtesy of Cory Lescher

7.1.1. SCIENCE, TECHNOLOGY, & INNOVATION COMMITTEE

Presentations: Agencies/Organizations

Basin-Scale Events to Coastal Impacts (BECI) Project — Mark Saunders, International Year of the Salmon (IYS) Director

Mark Saunders with International Year of the Salmon (IYS) presented on "Basin-Scale Events to Coastal Impacts: An Ocean Intelligence System for a Changing World." Mr. Saunders provided results from IYS research on the high seas. Research objectives for IYS were to close the gap of understanding regarding what happens to salmon in the open ocean, develop collaborations across agencies and nations, and create large scale models to understand the whole ecosystem and help get the information needed for management. Results provided are from a collaborative study among the members of North Pacific Anadromous Fish Commission (NPAFC), which includes representation by Canada, United States, Russia, Japan, and South Korea. BECI is a project proposed by NPAFC and the North Pacific Marine Science Organization (PICES) to continue and grow IYS efforts into the future, which was endorsed by the United Nations Decade of Ocean Science and Sustainable Development (UNDOS) in 2021. Through BECI, the NPAFC and PICES are convening a consortium of intergovernmental organizations, NGOs, academics, Indigenous, and private sector partners to design, test, and implement BECI. This ocean intelligence system will help inform decisions on fisheries management, fisheries compliance, food security, and much more. More information on BECI can be found at its website: https://beci.info/

Basin-Scale Events to Coastal Impacts: An Ocean Intelligence System for a Changing World presentation link:
http://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/070722_abrt_sti_presentation_basinscaleevents.pdf

University of Alaska Fairbanks (UAF) Alaska Blue Economy Center (ABEC) — Justin Sternberg, ABEC Director

ABEC was founded in 2019 at the Direction of University of Alaska Fairbanks (UAF) Chancellor Daniel M. White and was established by four founding units of the University, including the UAF College of Fisheries and Ocean Sciences (CFOS) and Alaska Center for Energy and Power (ACEP). The mission of ABEC is to be a resource to the State of Alaska for training and funding in marine and coastal industries. ABEC is working with internal and external partners to further engage researchers and students with industry and innovative technology, and to support experiential learning for students to promote entrepreneurship and innovation. ABEC is proposing an innovation fund established by the State of Alaska to work with stakeholders and industry to identify priorities in desirable research and development, such as bycatch reduction implementation. Director Sternberg discussed the successful model provided by UAF's partnership with the Bureau of Ocean Energy Management (BOEM) through the Coastal Marine Institute, and noted that recent funding increases for ACEP and CFOS has coincided with an increased desire for further research into fisheries. More information on ABEC can be found at its website: https://uaf.edu/cfos/research/alaska-blue-economy-ctr/index.php

Alaska Blue Economy Center presentation link:
http://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/072822_abrt_abec.pdf

UAF Pollock Conservation Cooperative Research Center (PCCRC) — Dr. Keith Criddle, PCCRC Director

The Committee received a presentation from PCCRC Director Dr. Keith Criddle, who also serves as the Ted Stevens distinguished Professor of Marine Policy at UAF's Juneau Center for Fisheries and Ocean Science. The PCCRC was established in February 2000 to improve knowledge about the North Pacific Ocean and Bering Sea through research and education, focusing on the commercial fisheries of the Bering Sea and Aleutian Islands. Dr. Criddle provided an overview of how research grants, primarily through graduate student support, contributed to closing critical information gaps in these areas of interest. PCCRC research priorities are informed through collaboration with the North Pacific Fishery Management Council (NPFMC), North Pacific Research Board (NPRB), and wherever relevant information gaps exist. A wide scope of research was discussed, including: pollock biology and resource utilization, industry research designed to mitigate bycatch and prohibited species catch (PSC) through gear modification, herring genetics stock structure and management, and evaluation current and alternative management strategies for western Alaska salmon.
More information regarding PCCRC can be found at its website: https://www.pccrc.org/

PCCRC–A Model of University-Industry Cooperative Research presentation link:
http://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/pccrc_model_ui_coop_research.pdf

7.1.1. SCIENCE, TECHNOLOGY, & INNOVATION COMMITTEE

Alaska Ocean Cluster — Garrett Evridge, AOC Managing Director

The Committee received a presentation on The Alaska Ocean Cluster (AOC), a startup accelerator focused on technological innovations that benefit Alaska's maritime industries, coastal communities, and ocean ecosystems. The presentation provided an overview of projects and future goals. According to Mr. Evridge, there is a large focus on startups and utilizing new ocean and fisheries technologies. The AOC is currently working with twelve startups with emphasis on ocean sustainability and profitability. Mr. Evridge provided three examples of current project collaboration: bycatch lights to improve salmon excluder nets and reduce PSC in trawl nets; ice forecasting to improve accuracy of predicting ice edge formation; and use of drones to scout for pollock in the Bering Sea. More information regarding AOC can be found at its website: https://www.alaskaoceancluster.com/

Alaska Ocean Cluster presentation link:
http://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/aoc_sti_committee_presentation.pdf

COMMITTEE RECOMMENDATIONS

The Alaska Bycatch Review Task Force's Science, Technology, and Innovation Committee was not charged with making specific recommendations (research, state engagement, management) to the Task Force. Instead, this Committee has been, and will be involved with receiving, collating, and editing (as necessary) the ABRT species committees' and Task Force's recommendations for inclusion in the Task Force's final Report.

7.1.2. WESTERN ALASKAN SALMON COMMITTEE

Members

George Guy, Co-chair / Stephanie Madsen, Co-chair / Karma Ulvi / Ragnar Alstrom / Representative Bryce Edgmon

The committee wants to first acknowledge the dire crisis of salmon returns in Western Alaska and the devastating impacts that has on residents of the Kuskokwim and Yukon rivers.

Meeting Dates | Information

The committee met ten times and public participation ranged from 20–30 individuals, with public comment provided at each meeting.
https://www.adfg.alaska.gov/index.cfm?adfg=bycatchtaskforce.committees#meetings_wasc

April 14, 2022
Organizational Meeting and ADF&G presentation on Western Alaska Chinook and Chum Salmon Stock Status

April 29, 2022
NOAA Fisheries Alaska Region Presentation on Regulatory Structure Overview of Salmon Bycatch measures for the Bering Sea Pollock Fishery

May 12, 2022
Incentive Plan Agreements (IPA) presentation by Catcher/Processor fleet, Inshore and Mothership Catcher Vessels

May 26, 2022
Presentation on Salmon excluder research by Alaska Fisheries Science Center (AFSC) and the North Pacific Fisheries Research Foundation

June, 2022
Committee did not meet in June due to subsistence fishing activities and the North Pacific Fishery Management Council June meeting covering salmon bycatch.

July 8, 2022
Presentation by the North Pacific Fishery Management Council staff which covered all salmon reports received and NPFMC action.

July 29, 2022
Presentation by ADF&G Salmon and Ocean Ecology Program (SOEP) and AFSC on Western Alaska salmon research being conducted and future plans.

August 12, 2022
Discussion of Draft Research Recommendations

August 26, 2022
Revised and Finalized Research Recommendations

September 16, 2022
Discussion of Draft State Engagement Recommendations and Management Recommendations

September 19, 2022
Revise and Finalized State Engagement and Management Recommendations

7.1.2. WESTERN ALASKAN SALMON COMMITTEE

Presentations: Agencies/Organizations

ADF&G Salmon Ocean Ecology Program Western Alaska Chinook and Chum Salmon Stock Status — Dr. Katie Howard

Chronic poor abundance has affected Chinook salmon, statewide, for more than a decade. 2021 was a record low abundance for Western Alaska chum salmon. In 2020 and 2021 there was widespread poor chum salmon abundance in Alaska with the exception of the South Alaska Peninsula which had high run abundance. Salmon are returning smaller and younger throughout Alaska; in the Kuskokwim Chinook salmon were historically age 5 & 6 and now are predominantly age 4 & 5, Norton Sound chum and coho salmon and Yukon River chum salmon are also at a record low size. Salmon Ocean Ecology Group is focused on marine surveys with the goal of long-term monitoring, identification of survival bottlenecks that affect future run sizes to improve our ability to forecast into the future. Survival of Yukon River Chinook salmon and fall chum salmon starting in 2016 was driven by poor early life survival likely due to the marine heat waves. In the Bering Sea this has resulted in more southern-origin salmon stocks moving north into the Bering Sea. Food availability has changed resulting in more fish with empty stomachs, and an increase in the number of salmon returning as 'jacks'.

Western Alaska Chinook and Chum Salmon Status presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/westak_chinook_chum_status_howard.pdf

Presentation by National Marine Fisheries Service Alaska Region- Regulatory Structure Overview of the Salmon Bycatch measures for the BSAI Alaska Pollock Fleet — Alicia Miller, AK Region. Ms. Miller, Catch Share Branch Chief

NMFS provided an overview of the regulatory structure currently in place for the pollock fleet in the Bering Sea for both Chinook and chum salmon. A history of NPFMC actions was also provided. Actions to minimize Chinook salmon started in 1995, were modified in 2000, 2005, and 2008. Chum salmon were also addressed in 2008. The current program has been in place since 2011 which established a hard cap, performance standard, and required the industry develop incentive plans (IPA) to minimize Chinook salmon. In 2017, chum salmon was added to required incentive plans and a low Chinook salmon abundance was identified by a three-river index threshold and added to the program. Regulations were designed to support data collection efforts i.e. genetics and verifying compliance. Salmon are required to be retained and counted by Federal observers to establish a "chain of custody". Cameras and dedicated holding bins are some examples of how to achieve this goal. All pollock fisheries are observed: catcher vessels 100% coverage, catcher processors 200% coverage, and shoreplants are also at 100% coverage. Quality of data collection in this program is high.

More information on regulatory amendments can be found in the Council's summary publication:
https://www.npfmc.org/wp-content/PDFdocuments/fmp/BSAI/BSAIGFAmActionSumm.pdf

Regulatory Structure Overview of Salmon Bycatch measures for the Bering Sea Pollock Fishery presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/salmon_bycatch_measures_miller.pdf

Salmon Excluder Research in Alaska Pollock Fisheries — Noelle Yocum, Engineering and Conservation Division, NMFS

Ms. Yocum leads the NOAA Alaska Fisheries Science Center Conservation Engineering Group. Part of this group's work is to develop bycatch reduction devices. Ms. Yocum spoke to how the excluders work in the pollock fisheries and noted that the various excluders have been developed over the last couple of decades and fine-tuned with testing, use, and input from industry. Additional information was provided on the current design being tested. The group is also working to assess salmon vision to understand possible benefits of using lights to help promote escapement. Salmon did not respond to light in the way the researcher hoped, but they did partially respond to some light. Noelle noted that light is not a silver bullet, but more research could make it a useful tool in excluder use.

Salmon Excluder Research in Alaska Pollock Fisheries presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/052622_yochum_ak_bycatch_task_force.pdf

7.1.2. WESTERN ALASKAN SALMON COMMITTEE

Presentations: Agencies/Organizations

Overview Presentation-NPFMC Salmon reports, June 2022 meeting NPFMC Staff — Dr. Diana Stram

Dr. Stram provided an overview of the all the salmon reports received by the NPFMC at the June meeting. Presentations given to the council were listed, and the topics briefly discussed. She provided a quick recap of genetic trends in bycatch and how the industry and council use that to determine rolling hot spot closures to specifically avoid Western Alaska salmon. Trends in both time and space have been indeterminate and difficult to use in making management decisions. Amendment 91 was put in place in 2011, and bycatch limits have never been close to being reached. An overview was given of the impact on Chinook bycatch to the salmon population by stock. A historical review of regulatory actions regarding bycatch was provided. The action/motion the NPFMC took in June was discussed.

Link to NPFMC site for additional materials:
https://meetings.npfmc.org/Meeting/Details/2934

NPFMC Salmon Reports from June 2022 Council meeting presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/npfmc_salmon_reports_june2022_meeting.pdf

Salmon Research Highlights in the Northern Bering Sea, AFSC — Dr. Jim Murphy

Research on the influence of temperature on the energy density of chum salmon shows that both colder and warmer temperatures have a negative impact on the energy density, but warm temperatures have a bigger negative impact. The energy density of juvenile chum salmon measured in 2021 was the highest of the time series, so conditions appear to be improving. The work is well coordinated with ADF&G SOEP program.

Salmon Research Highlights in the Northern Bering Sea presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/072922_abrt_was_committee_salmon_nberingsea.pdf

Salmon Excluder Research in Alaska Pollock Fisheries — Noelle Yocum, Engineering and Conservation Division, NMFS

Ms. Yocum leads the NOAA Alaska Fisheries Science Center Conservation Engineering Group. Part of this group's work is to develop bycatch reduction devices. Ms. Yocum spoke to how the excluders work in the pollock fisheries. Noted that the various excluders have been developed over the last couple of decades and fine-tuned with testing, use and input from industry. Additional information was provided on the current design being tested. The group is also working to assess salmon vision to understand possible benefit of using lights to help promote escapement. Salmon did not respond to light in the way the researcher hoped, but they did partially respond to some light. Ms. Yocum noted that light is not a silver bullet but more research could make it a useful tool in excluder use.

Salmon Excluder Research in Alaska Pollock Fisheries presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/052622_yochum_ak_bycatch_task_force.pdf

Yukon-Kuskokwim Delta
Photo courtesy of Tim Bowman

7.1.2. WESTERN ALASKAN SALMON COMMITTEE

Presentations: Industry/Public

Inshore Salmon Savings Incentive Plan (SSIP) Inshore Cooperatives — John Gruver, United Catcher Boats

Mr. Gruver presented the SSIP and described how the Chinook Salmon are distributed to individual vessels so that each vessel starts with a salmon limit, at the performance standard level, that is proportional to the amount of their pollock allocation. Salmon credits that can be used in future years are earned by good performance below the vessel's salmon allocation. The fleet also participates in a salmon hotspot reporting program (rolling hotspots) that is updated weekly. Few chum salmon are caught during the A season, so avoidance is focused on Chinook salmon. In the B season, rolling hotspots apply to both Chinook and chum salmon with a priority to avoid Chinook salmon. Chinook bycatch increases late in the B season (October), so most vessels try to catch all their pollock before the end of September.

Inshore Pollock Sector Incentive Plan Agreement presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/inshore_coop_salmon_incentive_plan.pdf

Mothership Salmon Savings Incentive Plan (MSSIP) Mothership Fleet Cooperative — James Mize

Mr. Mize presented on the MSSIP. Mothership operations are characterized by catcher vessels organized in fleets that deliver their catch, still in the nets, to mothership processing vessels which have 100% observer coverage and video monitoring of all catch. Real-time salmon bycatch information is shared amongst the fleet and group decisions are made on fishing locations, allowing the entire fleet to be highly responsive to salmon avoidance. In addition to other incentives and penalties, a set of Best Management Practices, including mandatory use of salmon excluders, rapid communication protocols, and adjustment of fishing operations in response to on-the-grounds conditions, comprise the core components of the plan to reduce bycatch in all levels of abundance of both pollock and salmon.

Catcher Processor Chinook and Chum Salmon Bycatch Reduction Incentive Plan Agreement (CPIPA) Austin Estabrooks, At-sea Processors Association

Mr. Estabrooks explained that Incentive Plan Agreements create rewards for avoiding salmon and penalties for failure to avoid salmon at the vessel level under all conditions of pollock and Chinook abundance in all years. The primary mechanism for avoiding bycatch is through a rolling hot spot closure of areas with known high bycatch. Catcher Processor vessels have strong incentives to avoid being closed out of areas because factories require a constant flow of fish and moving fishing grounds is costly. IPAs must be approved by NMFS and must include incentives that cause operators to change the behavior of fishing vessels to prioritize Chinook avoidance. A preview of the most recent 2021 chum salmon genetics was provided. It was noted that lower proportions of WAK chum salmon than the long-term average were present in the bycatch from 2019–2021. Efforts towards real-time genetic sampling – shipside salmon stock identification using mitochondrial DNA sequencing are underway through PCCRC funded research. Species distribution modeling for Chinook is also underway through another Pollock Conservation Cooperative Research Center project. Similar species distribution modeling efforts are underway for chum salmon through an AYK-SSI grant proposal.

Catcher/Processor Chinook and Chum Salmon Bycatch Reduction Incentive Plan and Agreement presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/offshore_coop_salmon_incentive_plan.pdf

North Pacific Fisheries Research Foundation — Brent Paine, President

Mr. Paine presented an overview of the industry efforts to develop and test salmon excluder devices including a video produced by the Nature Conservancy that spoke to how the pollock fishery impacts salmon bycatch and the work done to avoid or exclude salmon from gear. Brent noted that the salmon excluder was developed using Experimental Fishing Permits (EFP) over twelve years with the goal to make this device the most effective as possible. The Foundation was also involved in developing camera systems to monitor the excluder to adjust and assess the use and placement. Mr. Paine noted the Incentive Plan Agreements (see presentation above) contain a provision requiring vessels to use excluders.

Reducing Salmon Bycatch in the Pollock Fishery presentation link:
https://www.adfg.alaska.gov/static/fishing/multimedia/bycatchtaskforce/reducing_salmon_bycatch_in_the_pollock_fishery.mp4

7.1.2. WESTERN ALASKAN SALMON COMMITTEE

Western Alaska Salmon Committee Recommendations

All recommendations were achieved by consensus.

STATE ENGAGEMENT	RATIONALE
State of Alaska should establish a method to communicate bycatch information (numbers and fisheries) in both State and Federal fisheries for easy access to the public. This could be a page on the ADF&G website with links to NMFS Alaska Region and NPFMC or other communication tools.	The first three points address the need for increased communication to, and participation from, all stakeholders. They suggest different approaches that reflect the specific comments received from the public during our meetings.
State should provide the public assistance in understanding the BOF and NPFMC process with flyers or training so public can effectively participate. It was noted that the NPFMC has held training and has materials that could be modeled.	The third bullet addressed the need to explore all possible funding sources to conduct research to reduce bycatch. The Education Tax Credit Program is an established program that if extended and slightly modified, could help with industry efforts to use technology and gear research to reduce bycatch.
State of Alaska Federal Fisheries staff should continue to offer the public an opportunity to provide input on NPFMC issues before each NPFMC meeting. Consideration should be given to additional methods to seek input from stakeholders, tribal entities, and communities on bycatch issues. Suggestions from committee include: Advisory Councils or Federal Regional Advisory Councils.	The fourth bullet is needed to continue expressing the importance of understanding the other mortality sources of Western Alaska salmon.
State should support legislative action to remove the sunset of the Education Tax Credit Program and consider expanding program to specifically allow gear modification or technology improvements that would help reduce bycatch.	The final bullet is addressing the long term need to keep up the work the ABRTF has started. It is important to provide a platform for the public to stay abreast of the latest information and action on bycatch reduction efforts.
State should work with other entities, including the State Department, to request that the State Department, through bilateral and multilateral diplomatic channels with Russia, request information on the bycatch of Chinook salmon and chum salmon taken in Russian domestic fisheries (specifically, the number of salmon caught in their groundfish and salmon fisheries, and the genetic origin of these salmon).	
State should establish a permanent bycatch advisory body using the ABRTF as a template.	

7.1.2. WESTERN ALASKAN SALMON COMMITTEE

Western Alaska Salmon Committee Recommendations

MANAGEMENT	RATIONALE
The State should work to achieve real time genetic reporting that provides the composition of Western Alaska salmon in the bycatch. This can then be used in management of the pollock fishery to avoid areas and times when Western Alaska salmon are on the grounds in the Bering Sea.	The two specific management recommendations reinforce the role science has to help inform management actions.
The State should work to establish a scientific-based chum salmon cap to reduce bycatch of Western Alaska salmon in the pollock fishery in the Bering Sea.	

The committee received a thorough report on the presentations and action the North Pacific Fishery Management Council took in June. The NPFMC is the regulatory body responsible for managing the groundfish fisheries. It is our understanding that the Council has requested, and will be reviewing, the chum salmon data to determine if a cap could be a tool that would provide incentives to reduce chum salmon bycatch. Additionally, they continue to monitor the genetics of the Western Alaska salmon composition in the bycatch that would indicate the need for further requirements in the Incentive Plan Agreements required by the pollock fishery. The Council's call for the formation of a Salmon Bycatch Committee will provide the public additional opportunities to directly address their work.

The committee did not develop additional management measures since work is underway that includes most of the comments received from the public comment.

It is important to note that Western Alaska and communities along the Yukon River believe that if there is no fishing on the Yukon or Kuskokwim Rivers, there should be no pollock fishing in the Bering Sea. One public member called for a moratorium on trawling for an unspecified time. The committee did not forward these recommendations due to the lack of analysis identifying impacts of the suggested measures **but encourage the State to retain focus on salmon bycatch in the pollock fishery and make it the number one priority to monitor to determine when action is necessary.**

7.1.3. BERING SEA AND GULF OF ALASKA CRAB COMMITTEE

Members

Linda Kozak, Chair / Kevin Delaney / Stephanie Madsen / Erik Velsko

Meeting Dates | Information

The committee met eight times and public participation ranged from 20-30 individuals, with public comment provided at each meeting.
https://www.adfg.alaska.gov/index.cfm?adfg=bycatchtaskforce.committees#meetings_bsai

April 4, 2022
Gulf of Alaska Tanner crab presentations from ADF&G and industry.

April 26, 2022
Presentation on trawl gear modification research and requests for additional Tanner crab bycatch information.

May 31, 2022
ADF&G presentation on Tanner crab bycatch and groundfish catch in the Central Gulf of Alaska, along with Gulf of Alaska trawl and fixed gear recommendations.

June 17, 2022
Comprehensive overview by ADF&G of the Bering crab fishery and Bering Sea fixed gear recommendations, along with summary discussion of Gulf of Alaska Tanner crab recommendations.

July 26, 2022
North Pacific Fishery Management Council overview, with presentation on fishing effects model. Trawl and fixed gear sector recommendations.

August 9, 2022
Finalize Gulf of Alaska and Bering Sea crab research recommendations

August 30, 2022
Address Gulf of Alaska management recommendations.

September 6, 2022
Finalize Gulf of Alaska Tanner and Bering Sea crab management recommendations, as well as state engagement proposals.

Presentations: Agencies and organizations for the Gulf of Alaska

ADF&G Gulf of Alaska Tanner Crab Update — Nat Nichols and Mark Stichert

ADF&G staff provided an overview of the Tanner crab fishery in the Gulf of Alaska by area, along with information about how the fishery is conducted and the size of vessels. The fisheries developed in the late 1960's and has had a cyclical history. The 2022 fishery was discussed with information about GHL, harvest, vessels, and ex-vessel value. Annual survey information was included with a closer look at the 2018 cohort. Graphs were presented showing where the Tanner crab abundance is in the Kodiak area, along with bottom trawl and Pacific cod pot activity in those areas.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/adfg_tanner_update_stockstatus.pdf

Effects of Raised Trawl Sweeps on Unobserved Crab Mortality and Pelagic Trawl Seafloor — Dr. Craig Rose

Dr. Craig Rose, an independent researcher, provided information on unobserved crab mortality and his presentation included a description of raised trawl sweeps to reduce seafloor effects of trawling in the Bering Sea trawl fisheries, with extension to the Gulf of Alaska, along with pelagic trawl seafloor contact estimates. Dr. Rose provided a supplement document titled, "Cooperative Research to Reduce the Effects of Being Sea Flatfish Trawling on Seafloor Habitat Crabs".

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/impact_of_trawl_sweep_on_crab_bycatch.pdf
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/reduce_effects_trawling_rose.pdf

Tanner Crab Bycatch and Groundfish Catch in Central Gulf of Alaska — Alaska Department of Fish & Game

Specific information was provided by ADF&G on the Gulf of Alaska Tanner crab bycatch in statistical areas 525630 and 525702, with trawl and pot cod groundfish catch in the Gulf of Alaska. These are both areas of high Tanner crab abundance. The groundfish catch was for 2006–2021 and was broken out by the pelagic trawl, non-pelagic trawl, hook & line, and pot fisheries, with specific information on these two areas. A table was provided with estimates of Tanner crab bycatch from 2006–2021 in non-pelagic trawl and pot cod fisheries; there are no Tanner crab bycatch limits in Gulf of Alaska groundfish fisheries. An overview of the crab protection areas around Kodiak was also provided in the presentation.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/053122_abrt_crab_tanner_bycatch_groundfish_catch.pdf

7.1.3. BERING SEA AND GULF OF ALASKA CRAB COMMITTEE

Presentations: Agencies and organizations for the Bering Sea

ADF&G Comprehensive Bering Sea Crab Overview — Benjamin Daly and Mark Stichert

A review of the Bering Sea area was provided by Kodiak regional staff. This detailed report included the directed crab fishery and habitat, management framework, bottom trawl survey, assessment process, current status of stocks, BSAI crab observer program, assumed discard mortality rates, and Bering Sea bycatch research priorities. Information on retained catch in the directed fishery from 1990–2021 for all species of crab was presented, along with specific biological and habitat information for red king crab, Tanner crab, opilio crab, and their distribution. The dual federal and state management framework was described, along with the management process conducted by scientists and managers each year. The NOAA survey grid for the 375 standardized stations was presented and the steps taken in the stock assessment process. Current status of stocks was presented, with trends shown in abundance and recruitment estimates. A review of the crab observer program was discussed and how it began in 1988 and has evolved into what it is today with the primary functions of catch accounting, biological data collection, and research/monitoring. The directed fishery assumed discard mortality rates were presented for each crab species, as well as those in the groundfish fisheries. Some bycatch research priorities for the department were provided.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/061722_adfg_comp_bsai_crab_overview.pdf

Seascape-scale modeling of Benthic Habitat Disturbance from Commercial Fishing Activities (Fishing Effects Model)
Dr. Brad Harris, T. Scott Smeltz, Felipe Restrepo, John Olson and Suresh Sethi

This presentation represents the combined work of Alaska Pacific University, NOAA Fisheries, and Cornell University. The model work was completed to support essential fish habitat (EFH) studies and the North Pacific Fishery Management Council's five-year EFH review. Modeling habitat disturbance and long-term effects was based on information from 2003–2016 with five substrate types, 27 substrate-specific habitat features and various gear types. They modeled the minimal/temporary and cumulative impacts to show habitat disturbance from all gears combined.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/072622_abrt_crab_seascape_modelling.pdf

North Pacific Fishery Management Council Review — Dr. Diana Stram and Sam Cunningham

Staff from the NPFMC provided a review of the closed areas of the Bering Sea for crab protection, including Zone 1 for Bristol Bay red king crab and Tanner crab, Zone 2 for Tanner crab and the C. Opilio (snow) Crab Bycatch Limitation Zone (COBLZ). Prohibited species caps for crab in the Bering Sea for each of the three species were also identified, along with recent Council measures to address crab discard mortality by the directed and non-directed groundfish fisheries. Information on the snow crab rebuilding plan was also presented. Information was provided regarding upcoming Council requests for information and decision points.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/072622_abrt_crab_npfmc_review.pdf

Presentations: Industry and the Public

Gulf of Alaska Tanner Crab Trawl Recommendations on Presentations/Information — Chris Woodley

Groundfish Forum has catcher/processor trawl vessels which fish in the Bering Sea and Gulf of Alaska. They provided information on the types of presentations that should be considered when looking at crab bycatch for both of these regions. Recommendations included a review of current bycatch regulations and estimates of crab bycatch in the fixed and trawl gear groundfish fisheries, as well as the directed Tanner crab fishery. They also recommended that the modified trawl sweep information be provided and what is known about unobserved mortality. Another recommendation was to look at impacts of bycatch on crab stocks and how stock assessment authors take uncertainty into account.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/040422__abrt_public_comment_chris_woodley.pdf

7.1.3. BERING SEA AND GULF OF ALASKA CRAB COMMITTEE

Presentations: Industry and the Public (continued)

Gulf of Alaska Tanner Crab Fixed Gear Recommendations on Presentations/Information
Alaska Marine Conservation Council

Theresa Peterson with AMCC provide a community perspective on the Kodiak Tanner crab fishery and how important it is to the small boat fleet. She also provided historical information on efforts to mitigate impacts of the federal groundfish fisheries on Tanner crab, beginning in 2004. AMCC had a list of suggested data requests for review, along with some proposed management measures.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/040422__abrt_public_comment_theresa_peterson.pdf

Gulf of Alaska Tanner Crab Trawl Gear Recommendations

Alaska Whitefish Trawlers and the Groundfish Forum teamed up to present an economic overview of the importance of the seafood industry to Kodiak, with specific species landing information for 2015–2019. They presented the history of trawl closures and regulations in the Gulf of Alaska beginning in 1993, with specific information regarding current protection zones. They gave some specific recommendations regarding research and management.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/053122_goa_trawl_perspectives.pdf

Gulf of Alaska Fixed Gear Recommendations

The Kodiak Crab Alliance and Alaska Marine Conservation Council presented a document regarding their management recommendations for Tanner crab bycatch in the trawl fleet in the Gulf of Alaska, along with rationale for their proposals.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/053122_goa_fixedgear_perspectives.pdf

Bering Sea Crab Fixed Gear Recommendations

Alaska Bering Sea Crabbers presented information about their membership and activities in the regulatory process. They spoke about the status of stocks and the importance of protecting crab habitat, females, and molting/mating crab. Several suggestions were made for the directed fishery and trawl gear measures to reduce bycatch and handling mortality. Some issues involved a need for gear modification research, as well as technology improvements to enable hot spot reporting. Suggestions were also given for studies on unobserved mortality and several management recommendations for the trawl fleet. Some can be voluntary measures, while others would require regulatory action.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/061722_bering_crab_priorities_recommendations.pdf

Bering Sea Crab Trawl Sector Recommendations

Groundfish Forum provided an overview of their 18 trawl catcher/processors operating in the Bering Sea, fishing for flatfish, Atka mackerel, rockfish, and Pacific cod. They provided a background on their trawl bycatch reduction measures and some lesson learned, with recommendations for future trawl management measures to reduce bycatch. Comparisons were provided with trawl bycatch of crab in the Bering Sea and that of the pot cod and directed crab fishery. Recommendations were given for future bycatch reductions for the directed fishery, pot cod fishery and the trawl sector of the Bering Sea.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/072622_abrt_crab_flatfishtrawl_rec.pdf

7.1.3. BERING SEA AND GULF OF ALASKA CRAB COMMITTEE

Committee Recommendations

The recommendations that were achieved by consensus are shown below, along with those issues that were not agreed upon. Following the listing of the issues are rationale for the unanimous recommendations and pro and con statements on those issues where agreement was not reached by the committee.

STATE ENGAGEMENT

Recommendation for State Bycatch Engagement

Establish a way to better communicate bycatch information to the public, including website development, outreach and possible forums.

State Engagement Issues for Full Task Force Review

- Create a bycatch policy advisor position in the governor's office or as a part of ADF&G.
- Use the Task Force as a template to create a permanent bycatch advisory body.
- Develop a State of Alaska bycatch policy

RATIONALE

The committee discussed the need for a process to help Alaskans have easy and understandable access to bycatch information regarding research, pending actions, links available to other resources or agencies addressing bycatch, and a mechanism to provide input on bycatch policies.

MANAGEMENT

RECOMMENDATIONS FOR GULF OF ALASKA TANNER CRAB BYCATCH MANAGEMENT

1) Consider Gulf of Alaska trawl rationalization as a tool to manage bycatch.

Rationale: Trawl rationalization has been considered for many years and one of the objectives is to provide a way to better manage bycatch. By slowing the fishery and eliminating the race for fish, harvesters would be able to stop fishing in an area where crab are being taken incidentally, as well as relay information to others in their cooperative or fleet. Gear modification research to avoid/ reduce bycatch and associated mortality could also be better achieved with the fleet working together, rather than a strictly competitive process.

2) Following gear modification research, consider regulations for the directed crab fishery and pot cod fishery to reduce incidental take and discard mortality.

Rationale: Although individual harvesters will experiment with various gear modifications, such as large mesh gear and tunnel configuration, others do not, and may continue to have higher levels of bycatch and mortality. If a gear is proven to be effective in reducing crab bycatch, regulatory action should be considered for the fleet.

3) Address lack of monitoring in the directed Tanner crab and state waters pot cod fisheries.

Rationale: It is a challenge to place observers on small vessels in the GOA directed Tanner crab fishery and state waters pot cod fisheries, but the committee supports efforts to look for ways to monitor these fleets in order to determine accurate bycatch amounts.

4) Review and consider revising open and closed areas for bottom trawl in the Gulf of Alaska.

Rationale: The efficacy of open and closed areas to bottom trawl fishing may warrant increased scrutiny as the bycatch discussion continues. There are currently areas closed to bottom trawling that do not have high abundances of crab (Marmot Bay closure area), and there are areas open to bottom trawling (stat areas 525702 and 525630) that have historic and current high levels of abundance of tanner crab. It is suggested that a review of these areas is warranted.

7.1.3. BERING SEA AND GULF OF ALASKA CRAB COMMITTEE

5) Require 100% observer coverage on all Gulf of Alaska non-pelagic trawl catcher vessels.

Rationale: There are no prohibited species caps for Tanner crab in the Gulf of Alaska. Since the GOA trawl fleet historically has fished both non-pelagic and pelagic trawl during the same trip it is very difficult to determine coverage rates based on midwater or bottom trawl activity. The committee is inclined to recommend 100% coverage in order to gather some baseline data, and also to ensure that the "observer effect" is not impacting data. Requiring 100% coverage would also help establish catch rates/quantities and bycatch rates/quantities especially if a GOA trawl rationalization package is considered in the future.

RECOMMENDATIONS FOR BERING SEA CRAB BYCATCH MANAGEMENT

1) Recommend a rationalization program for the > 60' pot cod vessels as a way to manage bycatch and examine prohibited species caps as part of a rationalization program.

Rationale: A rationalization program would slow the pace of the fishery and allow for harvesters to avoid impacts to marine mammals and reduce bycatch. Advantages would be the ability to move gear from areas with high bycatch without lost opportunity, allow for stand-downs due to condition of crab (molting), test gear innovations aimed at reducing bycatch, and share information to coordinate efforts to avoid known areas with high bycatch.

2) Evaluate observer coverage and monitoring for the directed crab and pot cod fisheries.

Rationale: Observer coverage/monitoring, particularly in the state water's pot cod fishery has raised questions about the levels of interaction and bycatch of crab in the Bering Sea. An evaluation of the coverage for this fishery, as well as the directed crab fishery may be warranted.

3) Review effectiveness of fixed open and closed areas for trawling and continue to examine methods to develop flexible spatial management.

Rationale: This recommendation is similar to the Gulf of Alaska recommendation #4. There may be a need to consider the efficacy of open/closed areas and adjust closure areas to coincide with survey data, stock assessments, and seasonal movement of crab. Flexible spatial management may provide benefits for reducing crab bycatch in the non-pelagic trawl fisheries, as well as pelagic gear, as pelagic gear is not restricted in the amount of time bottom contact occurs.

4) Examine impacts of counting prohibited species caps for the entire Bering Sea area.

Rationale: As the Council wrestles with open/closed areas for fishing activity it would only make sense to not restrict PSC accrual to static boxes. All crab caught over the entire range of the stock should be counted toward the PSC caps, or at the very least a comparison of how much crab is caught inside and outside these static boxes. Changing oceans conditions may have shifted fish and shellfish stocks in recent years, and there is potential that PSC accounting may not be accurately depicting the impacts to crab stocks.

5) Evaluate possible seasonal closures in hot spot areas to pot gear both inside and outside of state managed waters.

Rationale: This committee recommendation suggests that movement of crab during ecosystem changes should be evaluated and if areas are determined to have high cab abundance, seasonal closures in specific areas may be warranted.

7.1.3. BERING SEA AND GULF OF ALASKA CRAB COMMITTEE

BERING SEA CRAB MANAGEMENT ISSUES WITHOUT CONSENSUS

1) Consider revising the pelagic gear definition to limit bottom contact.

Rationale for:
Open and Closed areas to trawl fishing are utilized to reduce bycatch and limit bottom contact. There are many areas closed to non-pelagic (bottom) trawl gear but open to pelagic (midwater) trawl gear in the BSAI. The distinctions in trawl gear types were primarily predicated on the idea or assumption that pelagic trawl gear was in fact floated in the midwater column and not in contact with the bottom. Previous Council work through EFH studies has highlighted that the pelagic trawl fleet in the Bering Sea is in contact with the bottom with their gear a significant portion of the time. A revision of the pelagic trawl gear definition may need to be entertained since the pelagic gear definition no longer fits the reality of how the fishery is executed on the grounds. Furthermore, bottom trawl gear is required to employ the use of raised sweeps and other bottom-contact limiting devices while pelagic trawl does not require any of these features. There is concern that a pelagic net could in fact, be more detrimental when on the bottom because it doesn't have the same restrictions as non-pelagic trawl gear.

Rationale against:
There are extensive closures throughout the BSAI to protect critical habitat (EFH) for a wide variety of species including crab and groundfish. The Council regularly undertakes an exhaustive look at the potential impact of all gear, including pelagic trawl gear on its impact on EFH. The Council is currently in the process of undertaking an EFH review now and the preliminary results continue to show that fishing gear, including pelagic trawl gear, has a temporary and minimal impact on habitat. The EFH review process is the best venue for examining the fishery interactions on fish and crab populations and habitat.

Revising gear definitions should be informed by strong scientific information. Changing gear definitions without that information could result in changes in fishing operations that increase bycatch for other species, increase fishing time, or have other unknown effects on EFH. Vessels using pelagic gear are currently reviewing the types of pelagic trawl gear that is being used. Different vessel and gear configurations can have different fishing effects. That information is a critical first step in understanding the potential impact of pelagic trawl gear and should be completed before initiating a regulatory process.

2) Examine the impact of retaining all legal crab and counting toward IFQ.

Rationale for:
High grading is the sorting of legal-sized crab for the most valuable (typically the largest and / or cleanest crab) and discarding the remaining legal crab to ensure that only the highest - priced portion of the catch is landed and counted against the IFQ. While this practice maximizes revenue, it is wasteful and potentially harmful to crab stocks. This is inconsistent with intent of rationalization program and assumption that individual catch allowances and removal of race for fish would have positive effects in terms of reduction of bycatch/wastage and sustainability of fisheries has not panned out. In some cases it has increased dramatically in the last 10 years (especially in the snow crab fishery). Furthermore, approximately 95% of snow crab discards are legal sized males according to the NPFMC and ADF&G. Counting all crab toward IFQ will increase incentives for captains to minimize bycatch of females and sub - legal males and will create incentives for captains to retain all legal crab.

Rationale against:
Some legal crabs are not retained due to market/processor requirements. Size and shell condition are two areas which are market-driven. Crab released by the directed crab fishery is assumed to have a mortality rate of 20%, but it is an established fact this number is used as an ultra-conservative estimate of mortality based on studies conducted in the 1990's. A research priority recommended for the directed crab fishery is to conduct studies on actual handling mortality under a variety of conditions for each of the crab species. Efforts are also being made to create market opportunities for smaller crab, as well as crab with poor shell condition. No other rationalized fishery is required to retain all product and it would be unrealistic to expect the directed crab fishery to retain crab that cannot be sold into the market.

7.1.4. GULF OF ALASKA HALIBUT AND SALMON COMMITTEE

Members

Brian Gabriel, Chair / Kevin Delaney / Mike Flores / Duncan Fields / Linda Kozak / Raymond May

Meeting Dates | Information

The committee met eight times and public participation ranged from 15–25 individuals, with public comment provided at each meeting.
https://www.adfg.alaska.gov/index.cfm?adfg=bycatchtaskforce.committees#meetings_bsai

April 14, 2022
Focus was on Gulf of Alaska Chinook salmon bycatch. ADF&G presentations were received on GOA Chinook salmon status and trends, along with GOA Chinook salmon bycatch in the groundfish trawl fisheries.

May 3, 2022
Focus of meeting was on halibut. Presentations were from the Dr. Ian Stewart of the International Pacific Halibut Commission and John Gauvin with Jennifer Ferdinand on deck sorting on trawlers.

May 24, 2022
A presentation was made by Julie Bonney with Alaska Groundfish Data Bank with an overview of the Gulf of Alaska trawl fleet and a history of trawl rationalization efforts.

July 28, 2022
Dr. Ian Stewart and Allan Hicks presented information on sources of discard mortality estimates in the directed and recreational halibut fisheries, as well as a discussion on the research being conducted on size limit retention regulations for the commercial fishery.

August 10, 2022
Recommendations for research and management measures were presented by the Alaska Charter Association, Alaska Groundfish Data Bank, Alaska Whitefish Trawlers Association, Groundfish Forum, and Fishing Vessel Owners Association.

August 23, 2022
Research recommendations were discussed and approved by committee.

August 31, 2022
Committee approved research recommendations and discussed management recommendations for Gulf of Alaska Chinook salmon and halibut.

September 7, 2022
Following a presentation by Oceana, the committee finalized management recommendations for Gulf of Alaska salmon and halibut, as well as state engagement issues.

Gulf of Alaska Halibut and Salmon Committee presentations

Information on Gulf of Alaska Chinook Salmon Status and Trends — ADF&G

The presentation provided information on Chinook salmon production trends for the period 1966–2021, with regional information for all areas of Alaska. These trends are showing Chinook stocks are declining in all areas of the state. Harvest information for commercial, sport and subsistence from 1985–2021 was presented both statewide and regionally.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/041422_goa_salmonhalibut_chinookinfo.pdf

GOA Chinook Salmon Bycatch in Groundfish Trawl Fisheries — ADF&G

Information was provided for the bycatch of Chinook salmon in the groundfish trawl fisheries, along with prohibited species caps for the period 2015–2021. Trawl bycatch by area and target species was provided, along with a brief regulatory overview of bycatch management. Genetic composition information was included in the presentation.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/041422_goa_salmonhalibut_chinookbycatch.pdf

Pacific Halibut Bycatch Update Flyer April 20, 2020 — North Pacific Fishery Management Council

This presentation included a history of major halibut bycatch actions from 1973–2020 for both the Bering Sea and Gulf of Alaska. An overview of halibut bycatch mortality was given and a description of the various users who discard halibut.

Presentation link:
https://www.npfmc.org/wp-content/PDFdocuments/bycatch/bycatchflyer420.pdf

7.1.4. GULF OF ALASKA HALIBUT AND SALMON COMMITTEE

Gulf of Alaska Halibut and Salmon Committee presentations (continued)

Summary of the 2021 Data and Stock Assessment Results — International Pacific Halibut Commission

Dr. Ian Stewart and Dr. Allan Hicks gave a summary of the 2021 data with information from the most recent IPHC meeting. Estimated mortality for all users was presented which included subsistence, research, sport, directed commercial, and non-directed discard (PSC). A historical view of discard mortality from 1960–2020 was presented, both for coastwide and for IPHC Areas 2C and 3A. Information was also provided regarding the fishery independent setline survey, conducted by the IPHC each year, with 1,890 stations along with stock distribution information.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/iphc_2021_summary_data_stockassess.pdf

Halibut Deck Sorting: A Tool for Amendment 80 to Reduce Halibut Mortality in Bering Sea and Gulf of Alaska flatfish fisheries — John Gauvin (Alaska Seafood Cooperative) and Jennifer Ferdinand (Alaska Fisheries Science Center)

A way to reduce halibut mortality in the trawl fisheries by the Amendment 80 fleet is to sort halibut out of trawl catch on deck. This effort was a collaboration with industry and National Marine Fisheries Service through an Exempted Fishing Permit (EFP), followed by implementation of regulations in 2020 which allow for deck sorting. This process is now widely used by all Amendment 80 vessels in the Bering Sea and Gulf of Alaska, while utilizing two NMFS-trained fishery observers.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/050322_halibut_deck_sorting.pdf

Gulf of Alaska Shoreside Trawl Fleet and History of Trawl Fishery Rationalization Efforts — Alaska Groundfish Data Bank

This presentation was provided by Julie Bonney and showed the history of efforts to rationalize the Gulf of Alaska catcher vessel trawl fleet. Benefits of cooperative management include individual vessel accountability and the potential for less bycatch and regulatory discards, while providing more predictability and stability for the fleet and increasing safety at sea. One of the benefits of having a rationalization program, with individual accountability, is the ability to increase monitoring of the fleet by moving the fishery from the partial coverage category to the full coverage category. Attempts to rationalize the GOA trawl fleet have occurred from 2003–2006 and 2012–2016, and each time the process was stopped when a new governor for the State of Alaska took office.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/gos_trawl_rationalization_bonney.pdf

Discard Mortality in the Directed Pacific Halibut Fisheries — International Pacific Halibut Commission staff

This presentation provided a review of discard mortality assumptions for 2017–2021 for the commercial and recreational fisheries, with a discussion about the under 32" (U32) minimum size requirement in the commercial fishery and considerations associated with modifying or eliminating this regulation. Some mortality assumptions were also presented.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/072822_goa_salmonhalibut_discard_mortality.pdf

Management Recommendations — Alaska Charter Association

The Alaska Charter Association provided information regarding existing trawl area closures in Alaska, with trawl footprint estimates. Graphs included EEZ closures in Alaska, with specific Kodiak, Cook Inlet and Southeast closure maps. The proposal was to include spatial management in the trawl fishery to reduce bycatch and to request that an essential fish habitat (EFH) review be conducted.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/081022_goa_aca_presentation.pdf

Management Recommendations —Alaska Groundfish Data Bank, Alaska Whitefish Trawlers and Groundfish Form

The organizations representing the trawl fleet in the Gulf of Alaska presented a complete list of recommendations for research, state engagement and management measures for salmon and halibut in the Gulf of Alaska.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/081022_goa_groundfish_data_bank.pdf

7.1.4. GULF OF ALASKA HALIBUT AND SALMON COMMITTEE

Gulf of Alaska Halibut and Salmon Committee presentations (continued)

Management Recommendations — Fishing Vessel Owners Association

The FVOA provided a recommendation to amend the partial observer program to find cost savings from the existing system, as well as amend the tendering exemption loophole.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/081022_goa_fvoa_recommendations.pdf

Gulf of Alaska Trawl Vessel Discards — Oceana

Information was provided by Oceana regarding the discard of directed and non-directed trawl discards based on an average of 2015–2019. Maps with areas closed to bottom trawling and trawl activity were presented. Oceana also presented policy recommendations for Gulf of Alaska trawl fleets.

Presentation link:
https://www.adfg.alaska.gov/static/fishing/PDFs/bycatchtaskforce/090722_goa_salmonhalibut_oceana_comments.pdf

Committee Recommendations

The committee addressed the issues of state engagement and management. Some motions were approved unanimously, while others were not agreed upon.

STATE ENGAGEMENT

Two motions were approved unanimously

1) Recommend the State of Alaska create a process for providing bycatch-related information and resources for Alaskan in a way (or format) that is understandable and easily accessible.

2) Request the State of Alaska establish a permanent advisory committee.

The following motion failed with two members absent

Appoint a bycatch policy advisor to the governor. Failed with two members absent

Rationale

The committee agrees with other Task Force committees that the State of Alaska can and should create ways to give Alaskans a way to access bycatch information and establishing a permanent website, along with outreach would help to provide accurate and unbiased information about bycatch research and management.

It is also important to allow for more Alaskans to have a voice in bycatch management and by establishing a permanent bycatch advisory committee, it will help provide a conduit for the public to engage. As new issues and information are identified, this body could provide an important bridge between Alaskans and the state. The advisory committee could work with ADF&G, the governor's office or through the Alaska Board of Fisheries process in ensuring that all regions of the state can engage directly with the state in setting bycatch policy. The lack of a state process for the public to participate was raised as an issue of concern by members of the public. The issue of a bycatch policy advisor was not agreed upon by the committee. Some felt that a fisheries advisor could fill this role, while others felt the bycatch advisory committee idea made more sense.

7.1.4. GULF OF ALASKA HALIBUT AND SALMON COMMITTEE

MANAGEMENT

Four motions were approved unanimously

Recommendation of consideration of rationalization-type management tools as a means of possibly reducing and managing salmon and halibut bycatch.

Rationale
While the idea of rationalization is not agreed upon by the various fishing industry groups in Alaska, it is agreed that this can be a tool to slow down a fishery and with a cooperative-style management, bycatch can be managed more effectively. A rationalization program may also provide the trawl fleet the ability to better address ways to reduce bycatch, such as adjusting trawl speeds and gear modifications.

The Committee recommends a regulatory requirement that the Gulf of Alaska pelagic trawl fleet, including any tenders of pelagic trawl caught fish, have 100% electronic monitoring. The committee further recommends that the State of Alaska work with National Marine Fisheries Service, our federal delegation and others to work to acquire funding to install electronic monitoring equipment on all GOA catchers and tenders.

Rationale
While a following motion was made for the non-pelagic trawl observer coverage, Chinook bycatch may best be quantified by requiring 100% electronic monitoring (EM) on pelagic trawl catcher vessels, as well as tenders that receive fish from pelagic trawl vessels. The information obtained from this would help to provide more accurate data on Chinook bycatch for the development of a trawl catcher vessel rationalization program. The motion also speaks to the need to acquire funding for installation of EM equipment on trawl catcher vessels in the Gulf of Alaska.

For a period of three years, the committee recommends 100% observer coverage be required on non-pelagic trawl vessels in the Gulf of Alaska. The intent is for this to apply to catcher vessels as catcher/processors are already 100-200% observed.

Rationale
The Bering Sea and Gulf of Alaska Crab Committee also made the recommendation for 100% observer coverage for the non-pelagic (bottom) trawl catcher vessel fleet in the Gulf of Alaska. Baseline data is needed, particularly when a rationalization program is being considered. Historically, this fleet has only been partially observed and issues with the "observer effect" impacting data have been raised in the federal regulatory process many times. The suggestion for a period of three years is to provide a complete accurate accounting of bycatch for halibut and salmon in the Gulf of Alaska.

Recommend the State of Alaska consider support of the development of an abundance-based management program for halibut bycatch in the Gulf of Alaska.

Rationale
Abundance based management addresses halibut prohibited species caps, which are adjusted up or down based on status of stocks and assessments. This management measure was recently passed for the Bering Sea trawl fleet after years of extensive analysis and discussion. It appears to be an effective way to address halibut bycatch and a recommendation is to model that management tool for the Gulf of Alaska.

The following motion was tabled and sent to the full Task Force for discussion

Committee recommends that the state review spatial trawl patterns and halibut bycatch intensity as a basis to consider areas that should be considered to spatially reduce halibut bycatch.

7.2. SUMMARY OF FULL TASK FORCE AND COMMITTEE MEETINGS

A total of 45 meetings were held with the full Task Force or committees from January through November 15, 2022. Public comment was received at 43 of the meetings. All presentations and written public comment were posted under each specific meeting tab, both for the full Task Force and the committees.

Full Task Force Meetings

Date	Description of Meeting
1/28/2022	Introductions, review AO No. 326, establish committees, draft work plan recommendations.
2/11/2022	Review draft work plan and approve committee memberships, presentation from NOAA Fisheries with overview of groundfish fisheries and bycatch, presentation from NPFMC on bycatch management, presentation from ADF&G with bycatch overview in state managed fisheries.
3/9/2022	Approve draft work plan, presentation on genetic stock identification of salmon bycatch in groundfish fisheries.
4/19/2022	Committee reports, address future meeting schedule.
5/17/2022	Committee reports, presentation from Sea State on bycatch avoidance programs, presentation from SeaShare on bycatch in the hunger-relief effort.
6/21/2022	Committee reports, presentation from National Marine Fisheries Service on the partial observer program in the Gulf of Alaska.
7/19/2022	Committee reports, revisit and approve work plan and meeting schedule, discuss committee report template and final report template.
8/16/2022	Committee reports, approve committee and final report templates.
9/20/2022	Receive final committee research recommendations.
10/12/2022	In person meeting – final committee reports on state engagement and management, discuss research recommendations.
10/18/2022	Approve research recommendations, partially approve state engagement recommendations.
11/1/2022	Following public comment on management options, finalize recommendations for eight management issues and one outstanding state engagement issue.
11/7/2022	Continue addressing unfinished management issues from the previous meeting and discuss final report.
11/15/2022	Review draft final report.

Science, Technology, and Innovation

Date	Description of Meeting
5/27/2022	Organizational meeting.
7/7/2022	Presentation from North Pacific Marine Science Organization (PICES), the North Pacific Anadromous Fish Commission (NPAFC) and partners on Basin-Scale Events to Coastal Impacts (BECI) titled "An Ocean Intelligence System for a Changing World".
7/28/2022	Presentation by the University of Alaska Fairbanks on the Alaska Blue Economy Center (ABEC).
8/5/2022	Presentation from the University of Alaska Fairbanks on the Pollock Conservation Cooperative Research Center (PCCRC) and the Alaska Ocean Cluster.
9/1/2022	Review and compile species committee research recommendations

7.2. SUMMARY OF FULL TASK FORCE AND COMMITTEE MEETINGS

Western Alaska Salmon Committee

Date	Description of Meeting
4/14/2022	Committee organizational overview, presentation by ADF&G on Western Alaska Chinook and chum salmon stock status
4/29/2022	Presentation by NMFS Alaska Region on regulatory structure overview of salmon bycatch measures in the BSAI Alaska pollock fishery, discussion of future presentations
5/12/2022	Presentation by At-Sea Processors Association on catcher/processor Chinook and chum salmon bycatch reduction incentive plan and agreement, presentation on inshore pollock sector incentive plan agreement
5/26/2022	Presentation by NOAA on salmon excluder research in Alaska pollock fisheries, video on reducing salmon bycatch in the pollock fishery
7/8/2022	Presentation from NPFMC on June 2022 salmon reports
7/29/2022	Presentation by Alaska Fisheries Science Center on salmon research in the Northern Bering Sea
8/12/2022	Address possible research recommendations
8/26/2022	Finalize research recommendations, discuss state engagement and management recommendations
9/16/2022	Discuss state engagement and management recommendations
9/19/2022	Finalize state engagement and management recommendations to forward to full Task Force

Bering Sea and Gulf of Alaska Crab Committee Committee

Date	Description of Meeting
4/4/2022	Presentation by ADF&G on GOA Tanner crab stock status and management in the Kodiak, Chignik and South Peninsula districts, presentation by Alaska Marine Conservation Council on GOA Tanner crab management recommendations and committee presentations, presentation by Groundfish Forum on recommended GOA committee presentations.
4/26/2022	Presentation by Dr. Craig Rose on cooperative research to reduce the effects of Bering Sea flatfish trawling on seafloor habitat and crabs.
5/31/2022	Presentation by Alaska Whitefish Trawlers and Groundfish Forum on GOA bycatch research and management recommendations, presentation by Kodiak Crab Alliance and Alaska Marine Conservation Council on proposed management measures for GOA Tanner crab bycatch.
6/17/2022	Presentation by ADF&G on comprehensive BSAI crab overview, presentation by Alaska Bering Sea Crabbers on industry priorities and recommendations for BSAI crab bycatch research and management.
7/26/2022	Presentation by NPFMC on Bering Sea/Aleutian Islands crab bycatch overview and Council action, presentation by Alaska Pacific University with NOAA Fisheries and Cornell University on seascape-scale modeling of benthic habitat disturbance from commercial fishing activities, presentation by Groundfish Forum management recommendations, presentation by Alaska Bering Sea Crabbers on management recommendations.
8/9/2022	Review and discuss Gulf of Alaska Tanner crab and Bering Sea crab research recommendations.
8/30/3022	Finalize research recommendations, finalize Gulf of Alaska Tanner crab bycatch management recommendations.
9/6/2022	Finalize Bering Sea crab bycatch recommendations, finalize state engagement recommendations.

7.2. SUMMARY OF FULL TASK FORCE AND COMMITTEE MEETINGS

Gulf of Alaska Halibut and Salmon Committee

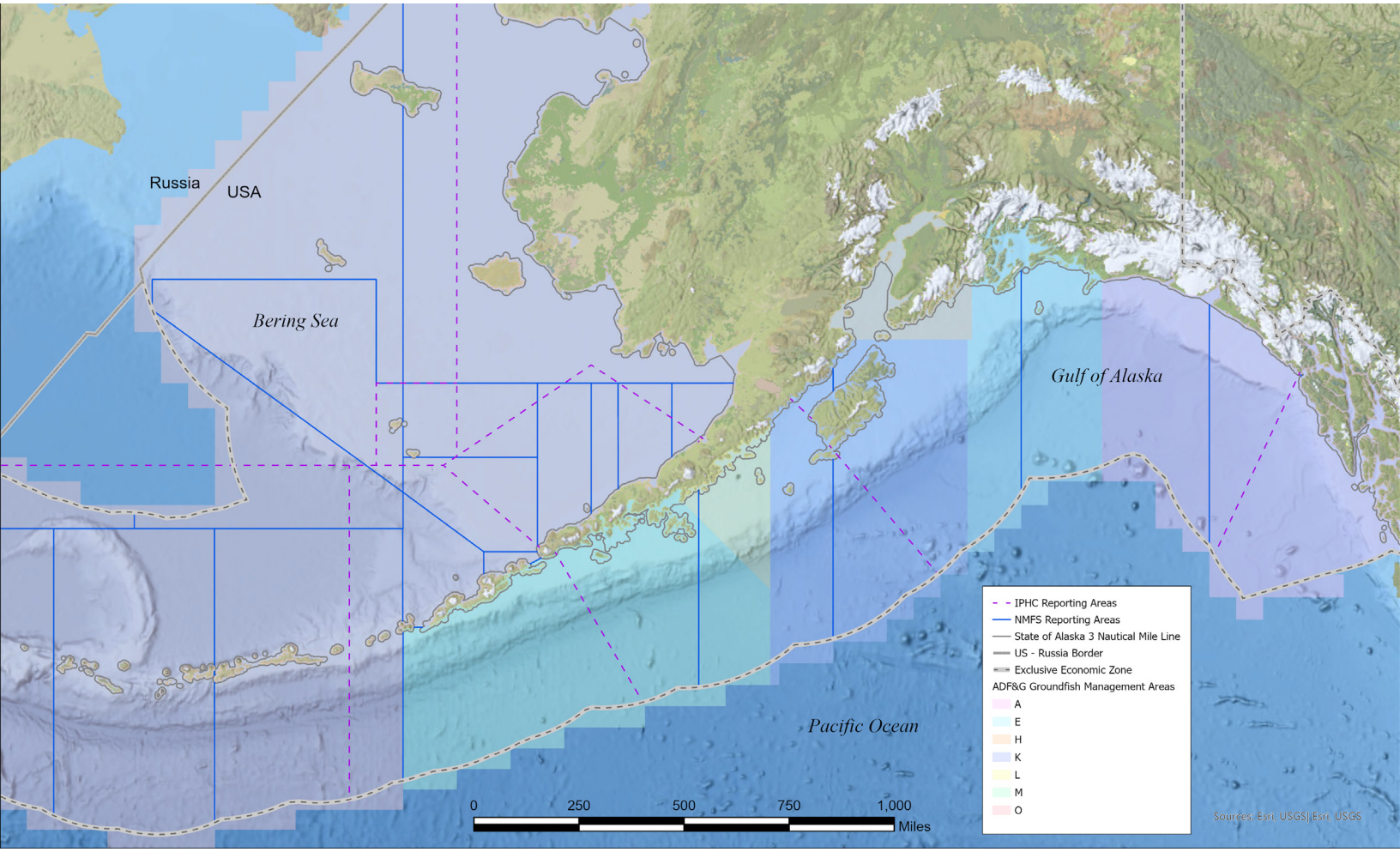
Date	Description of Meeting
4/14/2022	Presentation by ADF&G on Gulf of Alaska (GOA) Chinook salmon bycatch in groundfish trawl vessels, presentation by ADF&G on GOA Chinook salmon status and trends.
5/3/2022	Presentation on NPFMC GOA halibut bycatch 2020 update, presentation by International Pacific Halibut Commission (IPHC) on a summary of the 2021 data and stock assessment results, presentation by Alaska Seafood Cooperative and Alaska Fisheries Science Center on halibut deck sorting: a tool for Amendment 80 to reduce halibut mortality in the Bering Sea and Gulf of Alaska flatfish fisheries.
5/24/2022	Presentation by Alaska Groundfish Data Bank on the Gulf of Alaska shoreside trawl fleet and history of trawl rationalization efforts.
7/28/2022	Presentation by IPHC on discard mortality in the directed Pacific halibut fisheries.
8/10/2022	Presentation by Alaska Charter Association, industry presentation by Alaska Groundfish Data Bank, Alaska Whitefish Trawlers and Groundfish Forum, presentation by Fishing Vessel Owners Association.
8/23/2022	Discuss and finalize research recommendations.
8/31/2022	Discuss and finalize partial GOA Chinook salmon and halibut management recommendations, discuss state engagement recommendations.
9/7/2022	Presentation by Oceana, finalize management recommendations, finalize state engagement recommendations.

7.3. ACRONYMS

Acronym	Meaning
AAC	Alaska Administrative Code
ABC	Acceptable Biological Catch
ABRT	Alaska Bycatch Review Task Force
ADF&G	Alaska Department of Fish and Game
AFSC	Alaska Fisheries Science Center
AP	Advisory Panel
BCAR	Bottom Contact Area Ratio
BOF	Board of Fisheries
BS	Bering Sea
BSAI	Bering Sea and Aleutian Islands
CAS	Catch Accounting System
CDQ	Community Development Quota
COBLZ	*C. opilio* Bycatch Limitation Zone
CP	Catcher/Processor
CPUE	Catch Per Unit Effort
CV	Catcher Vessel
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EFP	Exempted Fishing Permit
FMP	Fishery Management Plan
ft	Foot or feet

Acronym	Meaning
GOA	Gulf of Alaska
IFQ	Individual Fishing Quota
IPA	Incentive Plan Agreement
IPHC	International Pacific Halibut Commission
lb(s)	Pound(s)
LLP	Liscense Limitation Program
LOA	Length Overall
m	Meter or meters
MRA	Maximum Retainable Amount
MSA	Magnuson Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
t	Tonne, or metric ton
NMFS	National Marine Fishery Service
NOAA	National Oceanic and Atmospheric Adminstration
NPFMC	North Pacific Fishery Management Council
OFL	Overfishing level
PSC	Prohibited Species Catch
SHS	State Harvest Strategy
SSC	Scientific and Statistical Committee
SST	Sea Surface Temperature
TAC	Total Allowable Catch

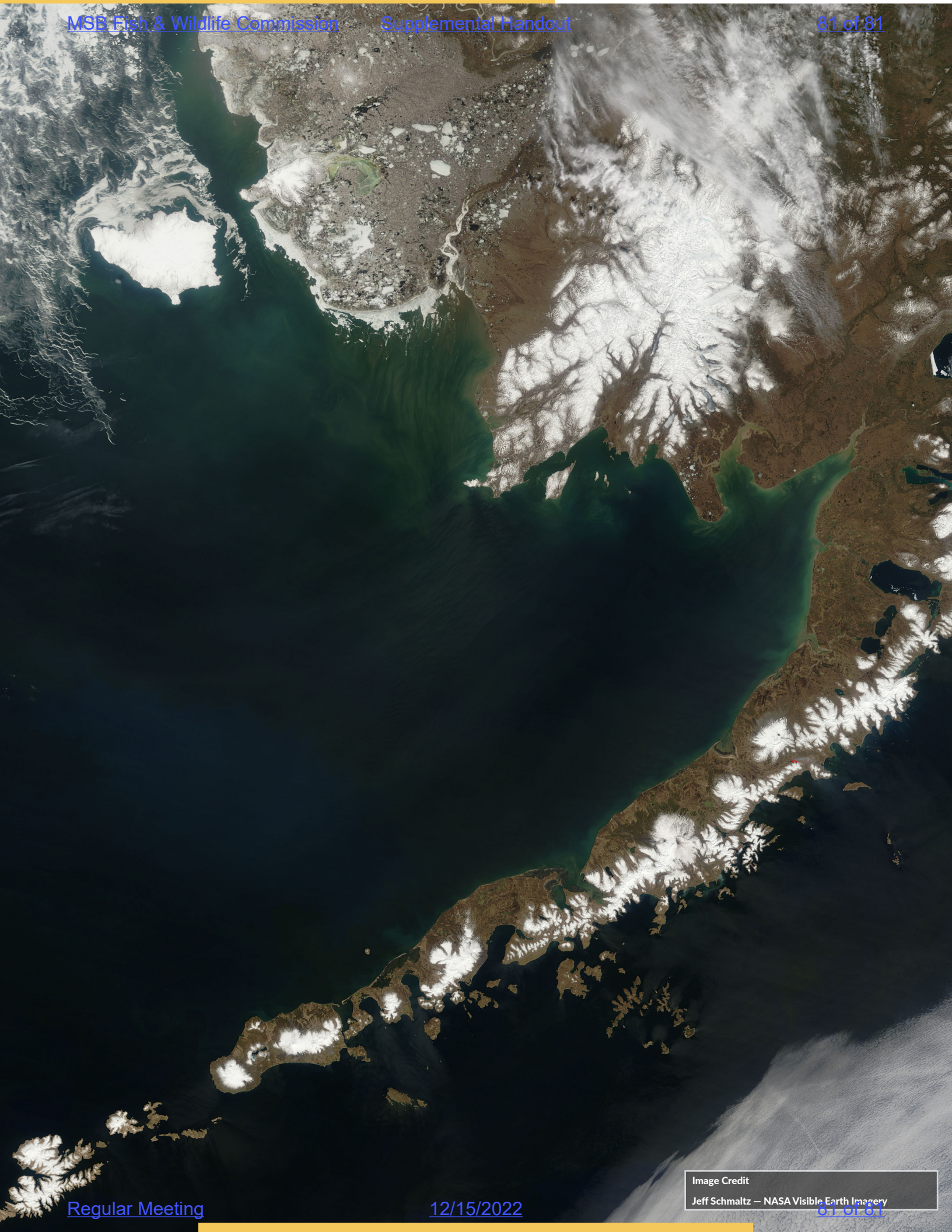
7.4. STATE, FEDERAL, AND INTERNATIONAL MANAGEMENT JURISDICTION IN ALASKA



Map showing jurisdictions and management reporting areas off Alaska.

The State of Alaska has fisheries management authority in state waters, zero to three nautical miles (nm) from the shoreline. In the Bering Sea/ Aleutian Islands the State has delegated management authority in federal waters for specific crab fishery management measures. The North Pacific Fishery Management Council and National Marine Fisheries Service have management authority in federal waters for species covered in federal Fishery Management Plans. Federal waters cover the American Exclusive Economic Zone (EEZ) and extend from 3 to 200 nm from the shoreline. The International Pacific Halibut Commission has authority for Pacific Halibut in all Convention waters off the west coasts of Canada and the United States. Federal authority for Pacific Halibut derives from two US statutes, the MSA and the Northern Pacific Halibut Act of 1982.

	Groundfish	Salmon	Halibut	Crab
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL	Allocation and conservation (3-200 nm)	Bycatch limits	Domestic allocation and bycatch limits	Conservation and fishery management (shared in BSAI)
NOAA	Fishery management (3-200 nm)		Domestic allocation and fishery management	Fishery management (Crab Program)
ALASKA DEPARTMENT OF FISH AND GAME	Fishery management and allocation (BOF) (0-3 nm)	Conservation, fishery management, and allocation (BOF)		Conservation and fishery management (Statewide; shared in BSAI)
INTERNATIONAL PACIFIC HALIBUT COMMISSION			Conservation, international allocation, and fishery management	



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