

On-Time Public Comment List Southeast and Yakutat Finfish February 23–March 3, 2015

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I OPPOSE proposal 231, I feel it is an unjustified proposal made by a local organization without any scientific data to back their claims. While the information on the river systems located around Loring is limited, the information we have states that the runs in question are healthy and strong. The West Beam Chum fishery provides a very high quality directed fishery for Neets Bay hatchery chums for up to 200 trollers at a time from late June until into September and closing any portion of this area without any information showing that this is a quality harvest opportunity for Neets Bay Hatchery Chums could be detrimental to the fishery, as well as creating another unnecessary boundary line, thus creating more difficulty for enforcement within the area.

The Department has performed aerial surveys for Pink salmon in Naha Bay as well as foot surveys for Sockeye salmon on the Naha River over the past couple of decades and these surveys have continued to show stable and strong runs within the area in question. Most recently, Both of these surveys were done in 2014 and they continued to show that the salmon runs in this area are very healthy.

This proposal also claims that in 2010 the boundary marker was moved, when in fact it was NOT moved. The marker had been missing for an unknown amount of time and was replaced by ADFG back to its proper location.

To conclude, this proposal would add an unneeded closed area that would take away very high quality access to SSRAA hatchery salmon. Please take the time to review this issue and see that this proposal could undermine a very high quality fishery without proof that any harm is being done to local stocks within the area.

Sincerely,
Ben Atwood



Summer Troll Harvest in West Behm Canal (101-90)					
	Data				
YEA R	Sum of CHINOOK	Sum of SOCKEYE	Sum of COHO	Sum of PINK	Sum of CHUM
2010	106	167	7,923	2,892	141,297
2011	200	977	3,808	20,936	438,454
2012	355	117	29,910	48,080	357,357
2013	38	87	21,216	30,015	110,556
2014	67	354	16,134	21,242	61,773



TO

ALASKA DEPT. OF FISH AND GAME

pg 1-4

The REJECTION OF
PROPOSALS

231-5AAC 29150 BANNING
COMMERCIAL TROLLERS NAHA
BAY. AND PROPOSAL: 5AAC 776X
CREATING A MICRO MARINE
CONSERVATION ZONE
NAHA BAY.

pg 1



pg 2-4

These two proposals dove tail together so I will speak of them as ONE. To forbid the trawlers from catching fish in Naha Bay, is to prohibit the very people who pay for the resource (3% fish tax) from reaping and profiting from that which they have sowed. (For every dollar they put in 6.7 come back.) This is a success story and NOT one of failure and Fish and Game is to be congratulated.

To shut down Naha Bay by creating a Micro marine conservation zone, (though I know the intent is that of a benevolent heart) is reactionary AND I don't believe entirely thought threw.

EXAMPLE: Law Enforcement IS the state REALLY going to start arresting little →



p93-4

Kids FOR Fishing off The LOAing FLOAT? (Located in Naha-Bay) OR arrest are Fellow Citizens FOR pulling up a CRAB POT, Just Because they Came up a Little Short on winter GRUB money?

The VERY Thought — Freezes the Last DROP OF BLOOD in my vein's.

FAR better to Rise up And Live out the TRUE meaning OF The Alaska State Constitution NATURAL Resources CREED!

Article VIII, Section 3
Common use.

WHEREVER OCCURING in their Natural State, Fish Wildlife and Waters AR Reserved to the people For common use.

I Fully Realize that all conservation Tool's must be APPLIED to PRESERVE The Resource, And IF shutting down an area is



pg 4-4

Necessary Then so be it.
But the goal should always
be to Reopen it For use of
and by the people of the
state of Alaska.

Note: During 2013 there were so
many fish that we (seiners) shut
down Trident Sea Foods in Ketchikan
for almost a day and they can
handle 3 million LB a Day.

Thank you.

Rex BARBER (Loring Resident)
P.O. Box 5076
Ketchikan AK 99901
(907) 821-8517



IN REPLY REFER TO:

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
1011 East Tudor Road
Anchorage, Alaska 99503-6199



FWS/OSM 15004.GP

FEB 06 2015

Mr. Tom Kluberton, Vice-Chairman
Alaska Board of Fisheries
Alaska Department of Fish and Game
P.O. Box 115526
Juneau, Alaska 99811-5526

Dear Vice-Chairman Kluberton:

The Alaska Board of Fisheries will consider 121 proposals, among other issues, at its Southeast and Yakutat Finfish meeting beginning February 23, 2015.

The U.S. Fish and Wildlife Service, Office of Subsistence Management, working with other Federal agencies has reviewed the proposals and has developed preliminary comments (enclosed) for proposals, which may affect Federally qualified subsistence users and fisheries in this area. We may comment on other proposals if issues arise during the meeting, which may also affect Federally qualified subsistence users and fisheries.

As you are aware, proposals were submitted to the Alaska Board of Fisheries which address various aspects of the issues identified by Kootznoowoo Incorporated in their 2010 petition (supplemented in 2011) to the Secretary of Agriculture to exert Federal extraterritorial jurisdiction (ETJ) over fishing activities in Chatham, Peril, and Icy straits. These proposals (146, 147, 148, 153, 173, 192, 193, 198, 199, 200, and 201) were generated by stakeholders interested in a local solution to issues identified in the petition. The central assertion in the petition is that interception of Sockeye Salmon by commercial fishing is limiting the amount of Sockeye Salmon available for subsistence fishing near Angoon.

On March 21-22, 2012, the Southeast Alaska Subsistence Regional Advisory Council (Council) met in concurrent public session with the Federal Subsistence Board to hear staff analysis and public testimony regarding the Kootznoowoo Incorporated's petition for ETJ. The Council developed and submitted a set of recommendations to the Federal Subsistence Board, including deferring extension of Federal jurisdiction into the waters of Chatham Straits for three years. Based on these recommendations, the Secretaries of Agriculture and the Interior (Secretaries) deferred action on the petition for three years to allow Kootznoowoo Incorporated, the



Vice-Chairman Kluberton

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community of Angoon, and the Alaska Board of Fisheries to develop local solutions that may preclude the need for the Secretaries to exert extraterritorial jurisdiction. The Secretaries, in their August 2012 response to Kootznoowoo Incorporated's Chairman Floyd Kookesh, recommended these issues, as articulated in the Council's recommendations, be addressed "at the local level, with key stakeholders being provided the opportunity to develop solutions to the problems identified in the petition."

The Federal Subsistence Management Program encourages the Board of Fisheries to consider the issues identified in the Kootznoowoo Incorporated petition when evaluating this group of proposals. The Federal Subsistence Management Program will send representatives to this meeting in Sitka to assist in addressing the above proposals and craft solutions to the issues identified in the Kootznoowoo Incorporated petition.

We appreciate the opportunity to comment on these important regulatory matters and look forward to working with the Board and the Alaska Department of Fish and Game on these issues.

Sincerely,

Acting

Eugene R. Peltola, Jr.
Assistant Regional Director
Office of Subsistence Management

Enclosure

cc: Sam Cotten, Acting Commissioner, Alaska Department of Fish and Game
Tim Towarak, Chair, Federal Subsistence Board
Chuck Ardizzone, Deputy Assistant Regional Director
Office of Subsistence Management
Stewart Cogswell, Fisheries Chief, Office of Subsistence Management
Jeff Regnart, Director, Division of Commercial Fish
Alaska Department of Fish and Game, Anchorage
Hazel Nelson, Director, Division of Subsistence
Alaska Department of Fish and Game, Anchorage
Thomas Brookover, Acting Director, Division of Sport Fish
Alaska Department of Fish and Game, Anchorage
Glenn Haight, Executive Director, Board of Fish
Alaska Department of Fish and Game, Juneau
Jennifer Yuhas, Federal Subsistence Liaison Team Leader
Alaska Department of Fish and Game, Fairbanks
Drew Crawford, Fishery Biologist, Alaska Department of Fish and Game, Anchorage
Federal Subsistence Board
Interagency Staff Committee
Administrative Record



**FEDERAL STAFF COMMENTS ON
ALASKA BOARD OF FISHERIES PROPOSALS
FOR THE
SOUTHEAST AND YAKUTAT FINFISH
MANAGEMENT AREAS**

**State of Alaska
Board of Fisheries Meeting
Sitka, Alaska**

February 23-March 3, 2015



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Federal Comments

The following comments address these proposals only as they affect Federally qualified subsistence users and resource conservation.

Proposals 150 &151 requests closing certain portions of the Klawock River to subsistence salmon fishing or restricting methods and means in the subsistence fishery. Proposal 150 requests closing a portion of the Klawock River drainage upstream of 133° 4'57.38" W 55° 33'1.287" N to subsistence fishing with seines or gill nets during July and August. Proposal 151 requests closing the Klawock River to subsistence fishing east and upstream of the Klawock River Bridge.

Current State Regulation:

- 5 AAC 01.710 (e). Fishing seasons*
- 5 AAC 01.720 (1) and (2). Lawful gear and gear specifications*
- 5 AAC 01.725 (a)(1) and (3). Waters closed to subsistence fishing*
- 5 AAC 01.730 (j). Subsistence fishing permits*

Current Federal Regulation:

36 CFR 242 and 50 CFR 100

36 CFR §100.14 Relationship to State procedures and regulations.

(a) State fish and game regulations apply to public lands and such laws are hereby adopted and made a part of the regulations in this part to the extent they are not inconsistent with, or superseded by, the regulations in this part.

36 CFR §100.27(i)(13)Southeastern Alaska Area.

§____.27(i)(13)(ii) You must possess a subsistence fishing permit to take salmon, trout, grayling, or char. You must possess a subsistence fishing permit to take eulachon from any freshwater stream flowing into fishing District 1.



§____.27(i)(13)(iv) (B) *Unless otherwise specified in this paragraph (e)(13) of this section, allowable gear for salmon or steelhead is restricted to gaffs, spears, gillnets, seines, dip nets, cast nets, handlines, or rod and reel.*

Is a similar issue being addressed by the Federal Subsistence Board? Yes. Fisheries proposal FP15-15 was submitted to the Federal Subsistence Board by the same proponent of Proposal 150. The Federal Subsistence Board adopted FP15-15 at its January 21-23, 2015 meeting. The State of Alaska supported the proposal.

Proposal FP15-15 was submitted by the Southeast Alaska Regional Advisory Council requesting that Federal public waters of the Klawock River/Lake be closed to the use of seines and gillnets during July and August. The proponent notes recent escapements of Sockeye Salmon into Klawock Lake have been very low, and that at times, fishing effort is occurring in the lower portions of the river where Sockeye Salmon are easier to catch. The proponent contends the use of seine and gillnet gear in this area poses an unacceptable risk overharvesting fish as they mill around, waiting to migrate upstream.

Impact to Federal subsistence users/fisheries: Yes. Adoption of these proposals will conserve Sockeye Salmon in the Klawock drainage. This will benefit Federally qualified subsistence users over the long term by ensuring continued subsistence uses of Sockeye Salmon.

Klawock Sockeye Salmon weir counts have been declining in recent years. The Prince of Wales Hatchery Association (POWHA) maintains an aluminum bipod weir on the Klawock River just below the lake. From 2001 to 2011, weir operation began in early July to specifically count Sockeye Salmon. Prior to 2001 and since 2012, the weir was typically utilized beginning in late July to capture Coho Salmon. Minimum weir counts at Klawock during the 1930s averaged just over 35,000 Sockeye Salmon. During the period of 2000 through 2010, weir counts ranged from 6,198 to 22,739 Sockeye Salmon. Historical data (1969-2013) shows that 64-97% of the Sockeye Salmon run occurred during July and August (Heinl 2014; Lundberg 2014).

Prior to 2006, the only Sockeye Salmon harvest reported on Federal subsistence fishing permits from the Klawock Lake/River drainage was seven incidentally taken during the Federal coho salmon fishery. Since 2006, directed harvest of Sockeye Salmon has been reported on Federal permits. Harvests reported from 2006 to 2013 ranged from 9 to 301 Sockeye Salmon, using dip net, gillnet, seine and handline gear. Seines and gillnets took 81 percent of the total harvest reported on Federal permits. Although Federal Subsistence Board action in 2010 allowed year-round sockeye harvest, nearly all of the Federal harvest occurs from July 7 to August 7.

Federal position/recommended action: Support. Recent escapements of Sockeye Salmon into Klawock Lake have been very low, and increased fishing effort, primarily with seines, is occurring in the lower portion of the river where milling sockeye are easier to catch. The use of seine and gillnet gear in this area poses an unacceptable risk of overharvest at current escapement levels. A restriction during July and August should protect 64 to 97 percent of the Sockeye Salmon return once they have entered the river. Restricting seines and gillnets will not create an undue burden as Federally qualified subsistence users can fish with other legal gear



types during these months. Klawock River Sockeye Salmon returns can be easily monitored with the POWHA weir.

The Federal Subsistence Board supported closing the waters under Federal subsistence fisheries jurisdiction in the Klawock drainage to the use of seines and gillnets in July and August. To be effective corresponding action by the Alaska Board of Fisheries is necessary. Otherwise, people could still use seines in those waters under a State subsistence fishing permit. If no action is taken by the Alaska Board of Fisheries on these proposals, the Federal in-season manager may issue a special action to close those waters to all but Federally qualified subsistence users to address conservation concerns and ensure a Federal subsistence priority.

PROPOSAL 156 seeks to authorize the use of bow and arrow as a legal gear type to take salmon in Southeast Alaska. The proponent requests bow anglers be allowed to harvest salmon by archery bow and arrow during open fishing seasons in Southeast Alaska. If adopted as written, all bow anglers participating in the new fishery would be required to be International Bowhunter Education Program certified bow-fishers.

Current State Regulation:

- 5 AAC 01.720 (a)(1) and (2). Lawful gear and gear specifications*
- 5 AAC 01.010 (a)(1 through 4),(c), (d). Methods, means, and general provisions*
- 5 AAC 39.105 (d)(1 through 6 and 9). Types of legal gear*

Current Federal Regulation:

36 CFR 242 and 50 CFR 100

§ ____.27(i)(13)(iv)(B) Unless otherwise specified in this paragraph (e)(13) of this section, allowable gear for salmon or steelhead is restricted to gaffs, spears, gillnets, seines, dip nets, cast nets, handlines, or rod and reel.

§ ____.27(i)(13)(xiv) You may take coho salmon with a Federal salmon fishing permit. There is no closed season. The daily harvest limit is 20 coho salmon per household. Only dip nets, spears, gaffs, handlines, and rod and reel may be used. There are specific rules to harvest any salmon on the Stikine River, and you must have a separate Stikine River subsistence salmon fishing permit to take salmon on the Stikine River.

*§ ____.25 Subsistence taking of fish, wildlife, and shellfish: general regulations.
(a) Definitions.*

Bow means a longbow, recurve bow, or compound bow, excluding a crossbow or any bow equipped with a mechanical device that holds arrows at full draw.

Currently, bow and arrow are not legal methods and means to harvest fish in Southeast Alaska under Federal subsistence regulations.



Is a similar issue being addressed by the Federal Subsistence Board? Yes. Fisheries proposal FP15-12 was submitted to the Federal Subsistence Board which rejected the proposal at its January 21-23, 2015 meeting.

Impact to Federal subsistence users/fisheries: No. Adoption of this regulation by the Alaska Board of Fisheries would not affect Federally qualified subsistence users. If this proposal is adopted, it would provide an additional gear type to harvest salmon in the Southeastern Alaska Area, thereby expanding opportunity for users fishing under State of Alaska regulations. Federally qualified subsistence users could participate in State fisheries using this gear type.

Federal position/recommended action: Neutral. This proposal is similar to a proposal rejected by the Federal Subsistence Board. The Federal Subsistence Board rejected the proposal based on the recommendation of the Southeast Alaska Subsistence Regional Advisory Council. The Council determined that bow and arrow fishing is not a customary and traditional method of harvesting salmon. Additionally, there are unknown mortality effects from wounding and loss.



Alaska Department of Fish and Game
Board of Fisheries Support Section
Glenn Height, Executive Director

RE: Support Documents for Proposal 126.

January 27, 2015

SOK in Sitka Sound was first proposed to the Board in 1996. Currently, issues regarding resource conservation and subsistence needs have come to the forefront and the economies of the fishery have been in decline. The sac roe product is no longer in high demand. Diversifying the fishery with SOK as an alternative harvest method would address many of the concerns surrounding the fishery while improving the overall value of the fishery.

In 1998 and 1999 an experimental open pound spawn on kelp (SOK) fishery was conducted in Sitka Sound. Some documents included in this PC have been submitted at past meetings and there are new materials as well. Much time has passed since the experimental fishery but the data, studies, and reports produced are still relevant. The market for herring roe products has not changed much from the time these documents were produced. A finite market for existing herring roe products still remains but expansion is possible with the addition of the thinner product that would be produced with SOK.

This PC contains the following documents:

- Spawn on Kelp and the Sitka Sound Herring Fishery.
- ADFG Report to the Board re: 1998-99 Experimental spawn on kelp fishery in Sitka Sound.
- Assessment of Macrocystis Biomass, Quality, and Harvesting Effects in Relation to Herring Roe on Kelp Fisheries in Alaska.
- Open Pounds and the Traditional Subsistence Fishery.
- An Update of Market Variables Affecting Demand in Japan.
- ROK Marketing Questions and Answers.
- Letter from Elderwood Trading regarding SOK in Sitka Sound.

The markets for Sitka Sound SOK are not the markets for thick SOK, but for a thinner product at a lower price point with a perceived value which can be more easily consumed in the marketplace. The existing market for SOK is hampered by large fluctuations in volume which have limited market expansion. SOK production in Sitka Sound would ease fluctuations in overall supply giving distributors the opportunity to expand the market, generate more awareness of the product, and increase demand for the product. Increased demand leads to higher prices. This will not happen overnight but it is time for a departure from status quo. SOK in Sitka Sound is a step in the right direction.

Respectfully Submitted,

Ryan Kapp



Spawn On Kelp and the Sitka Sound Herring Fishery

Allowing an Open Pound Spawn on Kelp (SOK) fishery in Sitka Sound will increase the overall value of the fishery while killing less fish than the existing harvest method.

The biology of spawning herring is a big factor in producing more value from the same biomass.

Currently, herring harvest can begin when roe recovery is sampled at 10% roe weight. Put simply: 100 tons of fish equals 10 tons of eggs. In some Sitka Sound openings roe recovery has been as high as 13%. In an experimental SOK fishery conducted in Sitka Sound in 1998 and 1999, Alaska Department of Fish and Game determined that 100 tons of herring biomass harvested with SOK converts into 27 tons of product. This represents a recovery of 27% which more than doubles the existing fishery recovery.

The reason for this increase in weight is biological. Upon fertilization the herring egg hydrates with water increasing the weight of the egg. SOK eggs are spawned, fertilized eggs that are hydrated while seine caught sac roe are pre spawn eggs and not hydrated. Because of this hydration the weight of an individual egg produced with SOK is more than twice as heavy as an individual sac roe egg.

With SOK the value of the eggs is increased as well. For example: 100 tons of herring at current prices (optimistically figure \$200 per ton) is worth \$20,000. That same 100 tons of herring harvested with SOK equates to 27 tons of product or, for simple math, a little over 50,000lbs. 50,000lbs of product sold at current prices (realistically figure \$5 per pound) is worth \$250,000. In this scenario the SOK product is worth more than 12 times the value of the traditional sac roe product.

While harvesting with SOK increases the value of the fishery product the best part is with Open Pound SOK no herring are killed. An Open Pound SOK fishery means the herring can swim into and out of the kelp as they please. There are no nets used at any time. The fish swim in, spawn, and return to sea making them available to spawn again in the future.

Increasing the value of the resource while causing the resource less harm is a win / win scenario. Incorporating Open Pound SOK into the Sitka Herring fishery would be a benefit both now and well into the future.

**Sitka Sound Herring Spawn on Kelp
Open Harvest Platform
Experimental Fishery Report
Spring 1998**



Submitted to
Alaska Department of Fish and Game
Commercial Fisheries Division
ADF&G Contract No. 11-122-98

Submitted by
Paul Gronholdt and Associates
P.O. Box 288
Sand Point, Alaska 99661

Prepared by
Oceanus Alaska
119 Seward Street, Suite 9
Juneau, Alaska 99801



Sitka Sound Roe on Kelp Experimental Fishery Report
Paul Gronholdt and Associates March 1998

EXECUTIVE SUMMARY

In response to a call for change in the Sitka Sound herring fishery, the Board of Fisheries prompted the Alaska Department of Fish and Game to conduct an experimental fishery using the Open Harvest Platform roe on kelp gear alternative. The goals of exploring diversification of the fishery were to improve conservation and encourage greater economic yield to participants.

Paul Gronholdt and Associates carried out the Experimental Fishery in accordance with contract specifications outlined by the Alaska Department of Fish and Game. The team's experience, good weather and an excellent herring return contributed to PGA's attainment of the goals of the experimental fishery.

The PGA team worked in concert with ADF&G research staff to support sampling efforts and generally track the fishery. PGA maintained communications with ADF&G staff from March 15 through the consummation of final product sales in Japan in the late summer.

This report provides a narrative describing procedures and schedules involved in the execution of the experimental fishery. Additional documentation on the harvest details is provided as attachments to this report.

MACROCYSTIS KELP HARVEST

About five tons of *Macrocystis* fronds were harvested from a single kelp bed along the north shore of Heceta Island, Sea Otter Sound. ADF&G reports that this included an estimated 4,080 fronds, each bearing an average of 16 blades. Thus, an estimated 65,280 total blades were "fished" as spawning substrate.

OPEN HARVEST PLATFORM FISHING

About 47 fishermen, consultants and processing crew were directly involved in the fishery. Four platforms were fished in Sitka Sound for two to four days each. Excellent spawn coverage was achieved. They carried out kelp gathering, rack loading, fishing and harvesting from March 16 through the 25th. Processing continued for an additional 2-1/2 weeks.

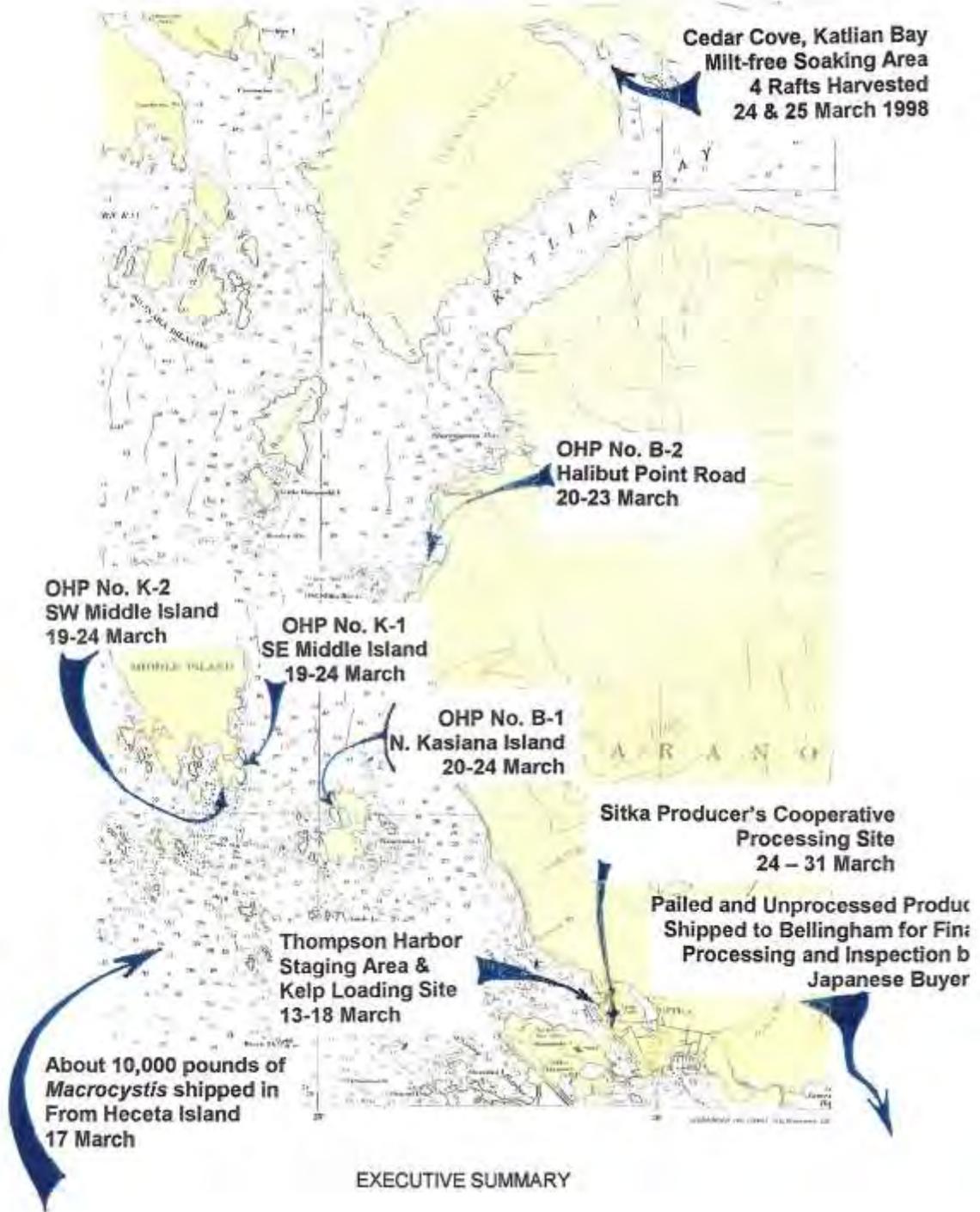
HERRING UTILIZATION

An estimated 104 tons of herring provided spawn for the final product harvested in the experimental fishery. 6,900 tons of herring were taken in the traditional sac roe fishery.

PROCESSING AND MARKETING

The total yield of this effort was 57,038 pounds of "Kazunoko kombu", which sold for 261,538 USD. 74% of the product was graded as #1 or #2, and the average price was \$5.46 per pound. Grade 5 fetched \$0.45 per pound, and Grade 1 paid \$7.58 per pound.

Sitka Sound Herring Roe on Kelp Experimental Fishery
Open Harvest Platform Method
Paul Gronholdt and Associates March 1998





**Sitka Sound Herring Spawn on Kelp
Open Harvest Platform Method
Report on Experimental Fishery Results
1998 Season**

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Discussion and Final Remarks

Attachments

- A. Board of Fisheries Proposal Number 441
- B. Sitka Spawn on Kelp Test Fishery Team Members (PGA) and Contractors
- C. PGA Kelp Harvesting Permit and Kelp Harvest Logs
- D. Detailed Chronology of Test Fishery (Field Records)
- E. March 1998 Interim report: individual rack logistics
- F. Sitka Producers Cooperative Tote Record and ADF&G Fish Tickets
- G. Roe on Kelp Production Report, Kanaway Seafoods
- H. Sitka Tribe of Alaska letter to the Board of Fisheries
- I. ACR 16, submitted to the BOF by Alan Ottness 25 September 1998



Sitka Sound Herring Spawn on Kelp Experimental Fishery Report
Paul Gronholdt and Associates March 1998

Section 1. Introduction and Background

This report describes the methods used by Paul Gronholdt and Associates in conducting the Sitka Sound Herring Spawn on Kelp Experimental Fishery. The results of the 1998 fishery and some of the challenges encountered in adapting the Open Harvest Platform fishery technique and marketing strategy to Sitka Sound are discussed.

Background

The Sitka Sound herring fishery has allowed only sac roe seine gear since entry to the fishery was limited in about 1977. Along the West Coast of North America, this singular gear type management regime for herring harvest is unique to Sitka (Garza 1996). In accordance with the Limited Entry Act optimum number provision, the CFEC established the maximum number of participants in the Sitka sac roe fishery at about 50 permits.

1.1 Diversification of the Herring Fishery

In early 1998, about one third of the Sitka Sound sac roe seine permit holders organized an effort to support the development of a spawn on kelp alternative to the Sitka Sound sac roe herring fishery. Under the leadership of a native of Sand Point, Paul Gronholdt and Associates submitted BOF Proposal No. 441. The proposal sought to "Allow Sitka Sound herring sac roe purse seine permit holders the option of using open pound racks to harvest herring roe in the form of kelp in lieu of or in addition to using purse seines."

Purse seine permit holders in the group, contracted biologists and consultants went before the Board of Fisheries in support of proposal No. 441 in Sitka (January 1998).

The Board of Fisheries took no action on proposal 441, but acknowledged the potential conservation and economic benefits of the gear type. In order to explore several aspects of the proposed open harvest platform method, the Board requested that the Alaska Department of Fish and Game conduct an experimental fishery. ADF&G responded by designing an experimental fishery and soliciting bids for the 1998 season.

1.2 Experimental Fishery Terms

Terms established by the Department for conducting the experimental fishery required that the contractor deposit a \$64,000 bond with the department, have at least two years experience in the spawn on kelp fishery, and have an appropriate vessel, platforms and other equipment necessary for achieving the test fishery goals. To further ensure a successful outcome, the Department also required that the contractors provide a harvest, marketing and processing plan, and hold a letter of agreement with a licensed Alaskan seafood processor for handling the roe on kelp product.

The goals of the test fishery were to first produce a sufficient quantity and quality of roe on kelp from four rafts to generate \$336,000 in product sales to pay department and contractor's expenses. The project would serve as an opportunity for ADF&G to conduct resource research on both kelp and herring, as well as observe the fishery for environmental impacts, gear conflicts and subsistence interactions.



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Paul Gronholdt and Associates were awarded the test fishery contract on February 25, 1998. Comprised of 13 Sitka Sound herring sac roe permit holders, about 40 crewmembers, and five consultants, the "PGA team" commenced with mobilizing their vessels and open harvest platforms for the fishery in early March.





Sitka Sound Herring Roe on Kelp Experimental Fishery Report
Paul Gronholdt and Associates March 1998

Section 2.0 Results of the 1998 Experimental Fishery

From early March through mid-July, Paul Gronholdt and Associates carried out the experimental fishery, processing and marketing of roe on kelp as described in their contract with the Alaska Department of Fish and Game. The results of this coordinated effort were beneficial economically as well as informative to community members, the experimental fishing team and the ADF&G research and management staff.

The PGA team successfully transferred California OHP fishing technology to Sitka Sound, and adapted the method to Alaskan conditions. Sitka residents were able to observe the entire process and learn directly the logistics involved and impacts resulting from the alternative gear system. ADF&G researchers implemented their research plan with few changes, and obtained data upon which to base their analysis of the fishery.

Finally, the overall quantity and quality of the roe on kelp yielded by this fishery were very good, considering it was a first attempt at the fishery in Alaska. Sales of the product were sufficient to reimburse most of the PGA team's costs, and covered the entire ADF&G experimental fishery research budget.

Detailed records of activities involved in the experimental fishery are noted in the chronology in attachment D. The following section highlights the manner in which each facet of the fishery was conducted, notes any discrepancies from the original plan, and briefly explains the results of each phase of the operation.

2.1 Staging for the Test Fishery

The PGA team began staging for the test fishery in early March. Robert Glenovitch shipped his custom-manufactured aluminum roe on kelp rafts and other equipment from Bellingham to Sitka on the F/V Alicia Jo. Crew from the St. Zita assembled the rafts and moored them in New Thompson Harbor on March 13.

About 60 fish totes were stored on a barge leased from Excalibur Drilling. Located inside the Thompson breakwater, the barge served as a useful platform for the kelp stringing and open harvest platform loading operation.

2.2 *Macrocystis* Kelp harvest

High quality *Macrocystis* kelp is essential for the production of excellent herring roe on kelp. Desirable kelp blades are at least 6 inches wide and 20 inches long, with smooth margins, no holes and free of encrusting growth.

Although *Macrocystis* grows from Dixon Entrance to Icy Strait, mature blades meeting these harvest criteria in the early spring are not abundant throughout the plant's Alaskan range. On March 13 and 14, Darrell Kapp and crew inspected *Macrocystis* kelp beds around Baranof Island. No kelp of sufficient blade size and abundance could be located near Sitka Sound.

Kapp conferred with Bill Davidson about the situation and coordinated a team of kelp harvesters to travel further south. On March 15, Jim Beaton directed his crew on the F/V Starrigavan to depart Sitka for Sea Otter Sound. Kelp quality expert Warren Westrom

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screened several kelp beds and located a supply of mature *Macrocystis* about 120 miles south of Sitka. Beaton notified ADF&G of the harvesting site and schedule.

On March 16, PGA's biologist and two ADF&G technicians flew to the North end of Heceta Island where they rendezvoused with the Starrigavan crew. Two fishermen that live on Heceta Island were contracted to gather kelp for the fishery, and joined the team onsite.

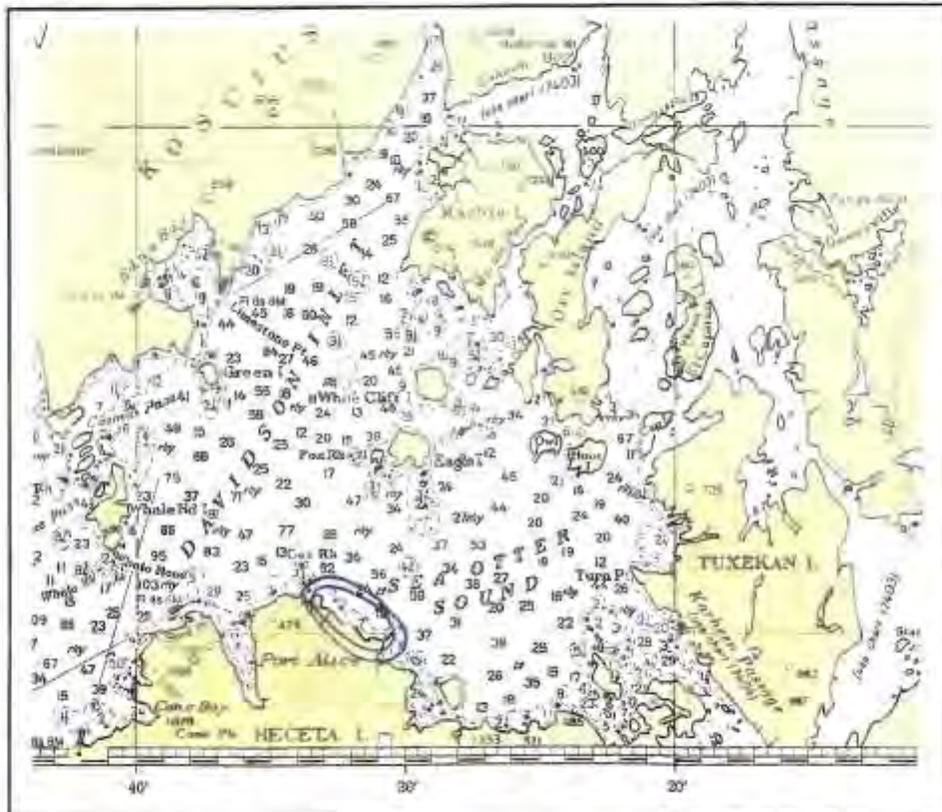


Figure 2.1 Nautical chart indicating the location of the North Heceta Island kelp bed. Nine people harvested about 4,000 *Macrocystis* fronds from this site in about 10 hours.

The following individuals participated in the kelp harvest at North Heceta Island:

- Johnny Weyhmiller and crew
- Rob Miller, Sitka
- Charley Frisbee, Hyدابurg
- Lee Morris, Captain
F/V Starrigavan
- Steve Frago, Crew, F/V Starrigavan
- Becca Johnston, Crew, Starrigavan
- Michelle Ridgway, PGA Biologist
- Warren Westrom, Kelp Quality Advisor
(Nicole DuClose & Eric Parker, ADF&G)

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The kelp team commenced with the *Macrocystis* harvest on the morning of March 16, and completed the task by 1900 hours that evening. All kelp used in the test fishery was harvested from one bed located at North shore of Heceta Island, about two miles SE from Gas Rock, at 55°49.43 North 133° 31.145 West (Figure 2.1). This site lies within ADF&G statistical area 103-90.

In accordance with contract stipulations Warren Westrom directed the kelp team to weigh and inventory each tote of kelp and maintain the kelp harvest logbook. Pursuant to ADF&G kelp harvesting regulations 5 AAC 37.300, the crew harvested *Macrocystis* from small skiffs by hand, removing only the upper portion of the fronds.

Westrom oversaw that kelp harvested met quality control standards. Frond sections taken were about six to eight feet long. The four to five newly formed blades at the tip of each frond are unusable and were trimmed off to reduce mucilage buildup in the totes.



Photograph 2.1 *Macrocystis* kelp harvesting in Sea Otter Sound, North shore of Heceta Island. Kelp blades are in good condition, but slightly smaller than preferred. PGA's biologist, Michelle Ridgway was monitoring the harvest and observing for impacts to the kelp resource and effects on marine mammals and birds in the area. 16 March 1998

A total of 10,236 pounds of kelp was harvested and transported in 40 standard fish totes. The ADF&G research team estimated that this consisted of 4,080 fronds with an average of 16 blades per frond, or 65,280 total blades.

The Starnigavan crew lashed the totes of *Macrocystis* to the deck, and kept them lidded during transport. Weather was rough through Chatham Straits, but the kelp arrived at Thompson Harbor in excellent condition.



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Kelp Harvest Impacts

The ecological effects of the kelp harvest were difficult to gauge. As there was no provision made for conducting a quantitative study of the kelp prior to harvest, both ADF&G field technicians and PGA's biologist made general observations of the harvest.

Ridgway photographed the kelp bed prior to and following harvest. Neither observations made on the day of harvest nor the photographs reveal that the bed had been diminished in any way. ADF&G biologists revisited the kelp harvest site on April 9, and reported that "there was no obvious impact on the kelp bed". Ridgway revisited the site in July and September. Based upon surface observations only, she did not see obvious signs of deterioration in individual plants or in the bed.

Even when harvesting fronds in the kelp bed, it was difficult to detect any reduction in the kelp biomass. However, it was obvious to all pickers when high quality blades became scarce in an area. Upon completing the harvest, we felt that we had taken most of the higher quality fronds from the kelp bed – which is about 1/3 square mile in size.

We assume that impacts to the kelp bed from this harvesting included some damage to the individual plants which were "pruned". Because only one or two fronds were taken from each plant, the *Macrocystis* plants will likely recover the lost biomass by summer's end.

Ridgway observed seals, cormorants, marbled murrelets, gulls and numerous seaducks in the bay during harvest activities. Three seals remained in the kelp while skiffs collected fronds, it did not appear as if they were disturbed at all. Other than the likely short-term disruption to the fish and invertebrate populations dwelling under the kelp canopy, it does not seem as if this year's level of harvest resulted in long-term damage to the kelp bed or the ecosystem it supports.

Kelp User Conflicts

Potential conflicts between the Spawn on Kelp Experimental Fishery and subsistence harvests of kelp or SOK on the West Coast of Prince of Wales Island was cited as a concern prior to the fishery (Comments to the Board of Fisheries by Dolly Garza, 1998).

The PGA team harvested kelp for the experimental fishery only at the Heceta Island site, many miles away from the traditional kelp harvest areas used by the communities of Craig, Klawock Sitka and Hydaburg (see figure 1 in the Executive Summary). There were no concerns or conflicts reported as a result of the kelp harvest.

2.3 Open platform fishing

The Starrigavan crew arrived with the *Macrocystis* in the evening on 17 March. The PGA core team of seine boat skippers and advisors met to review the kelp loading procedure and by 2100 hours mobilized their crews to begin work. The ADF&G staff were notified of project activities and were on site as the kelping procedure began.

Four seine boats anchored rail to rail in Thompson Harbor, near the Excalibur barge. In windy, cold weather, 37 crew members, boat captains and four contractors engaged in stringing and loading kelp on racks for 6 1/2 hours, completing the task at about 3 a.m.

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The kelp loading procedure involved the following steps:

- *Macrocystis* fronds were removed from totes and trimmed to 6-foot lengths
- A seine lead weight was attached to the bottom end of the frond, and a length of gangion line to the top end of the frond. The gangion was made off to a piece of groundline. Fronds were spaced about 1.5 meters apart along the kelp line.
- Lines bearing fronds were "coiled" into totes, much like baited longline gear
- The Merlin crew took fully loaded totes to the open harvest platforms, and "shot" the lines into place. From 37 to 43 lines were placed on each of four platforms, each line bearing about 28 fronds.
- Kelped platforms were then allowed to settle for about a day in Thompson Harbor



Photograph 2.2 Loading kelp; late night in Thompson harbor. Two assembly lines involving about three dozen-crew members prepared kelp fronds for suspension in the open harvest platforms. Weights and gangions were attached to each frond, and then fronds were attached to kelp lines on the four platforms. 3,858 fronds were fished in the experimental fishery.

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On March 19, vessels in the PGA fleet slowly towed two loaded kelp racks to fishing sites designated by Darrell Kapp with input from Subsistence Coordinator, Mike Miller. Details of the logistics involved in handling each rack during the fishery are provided in the Chronology (Attachment D), and in the interim report (Attachment E).

Rack K-1 was anchored in a small cove on the SE end of Middle Island, and K-2 was secured in a nameless cove on the SW end of Middle Island in the evening of 19 March (Figure 2.2). On 20 March, racks B-1 and B-2 were towed to anchorages on the north end of Kasiana Island and to North Magic Island. Later on the 21st, raft B-2 was tied to a private dock located on Halibut Point Road, where it remained for the rest of the fishery.

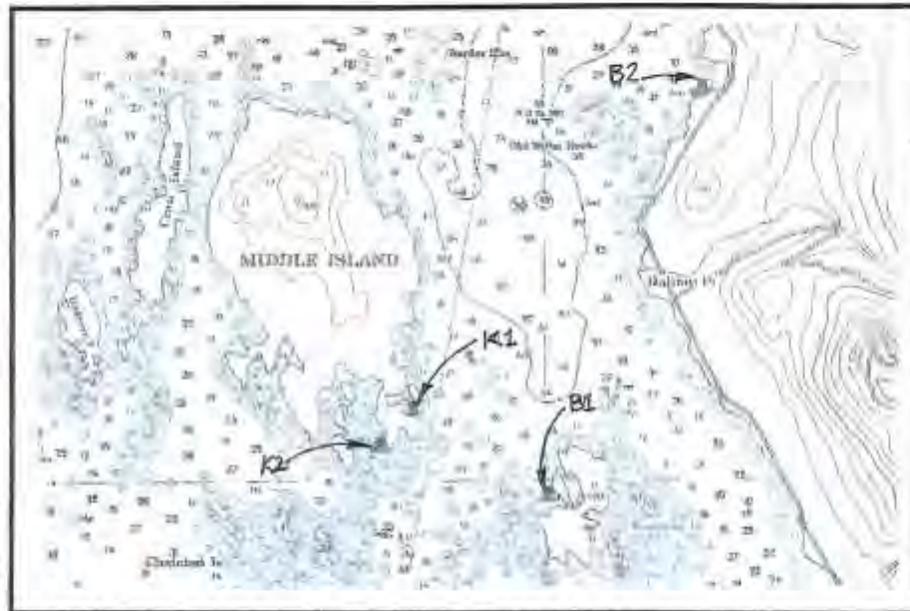


Figure 2.2 Location of each open harvest platform used in the SOK experimental fishery

All rafts were adorned with two to four blinking warning lights and signs displaying ADF&G permit numbers. Each raft was positioned near a steep beach, and tied to shore with one or two stout shorelines. The corners of each raft most distant from the beach were secured using 50-pound longline style anchors.

Spawn Deposition

1998 was an excellent spawning season in Sitka Sound. ADF&G reports that spawning in the Sound occurred from March 19 through April 12, with major spawning from March 21-25. Spawning events began earlier than usual, and over 65 miles of shoreline was spawned upon.

We observed spawning at every raft by the 21st of March. Schools of male and female herring milled around the rafts and, seemingly responding to the same cue, females

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began to deposit eggs on the kelp blades. Like a seamstress sewing stitches, each female laid her eggs on blades in rows. Males released milt in the rack areas on an intermittent basis. On March 23rd, the PGA team and ADF&G managers observed that most of Sitka Sound was a sea of milt.

While the gear was fishing, two dozen members of the PGA team shared the task of monitoring rafts for spawn deposition, observed and responded to subsistence fishing activities in the area, and generally guarded the platforms (see Chronology). Each raft was tended each night they were in place. The crew monitored spawn deposition at each site, and eventually lowered most kelp lines to improve blade exposure to spawning herring.

During the fishing period, representatives of the Alaska Department of Fish and Game, USFWS Protection, members and staff from the Sitka Tribe, and members of the general public from Sitka visited the roe on kelp rafts.

By March 23, all racks had from one to four egg layers deposited on most blades. At about 8 o'clock p.m, the Ryan D. Kapp towed platform number B-2 from the Halibut Point Road site about five miles to Cedar Cove in Katlian Bay. The raft was tended overnight while the product soaked to cleanse away excess milt.

On the 24th, the remaining three rafts were towed to Cedar Cove for soaking. Weather was calm, and product loss from the rafts during the tow was negligible. Seine boats towed the rafts at a speed of about 2 knots.



Photograph 2.3 Open Harvest Platform fishing! The PGA team inspected platforms several times daily. If upper blades were not receiving spawn deposition, gangion extension lines, or "drops" were used to lower the kelp lines in the water column.

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Photograph 2.4 The condition of *Macrocystis* blades was closely monitored. Cool temperatures, high saline water and early spawning in Sitka contributed to the preservation of kelp quality.

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2.4 Roe on Kelp Product Harvesting

Five seine boats and their captains and crew gathered in Cedar Cove for harvest of the first rack on the morning of the 24th of March. We first worked with the ADF&G research team to tag randomly designated fronds for sampling and set up ADF&G's sampling station. About 30 people engaged in harvesting and packing roe on kelp for about three hours.

The team removed each frond from kelp lines, then snapped all blades off of the stipe or stem, stacked blades carefully and then packed them into standard-sized fish totes. ADF&G collected every marked frond for sampling and maintained counts of all fronds harvested. Totes full of roe on kelp blades were loaded on to the deck of a seiner, and taken to the Sitka Sound Producer's Cooperative for processing.

The crew harvested the three other racks in this manner on March 25th. Weather was cold, windy, and sleeting occasionally. The harvest proceeded without incident of note. About 50 totes of roe on kelp were delivered to the SPC plant by evening of the 26th.



Photograph 2.5 Paul Gronholdt's F/V St. Francis positioning a kelp platform in Cedar Cove following a two-hour tow from the fishing grounds. The roe on kelp was allowed to soak in the mill-free waters for 12 to 24 hours prior to harvest to reduce product adhesion.

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Photograph 2.6 Product harvesting begins. Teams of kelp handlers worked from the decks of two seiners moored to the platform. ADF&G researchers have set up a sampling station on the aft deck of the Robert Glenovitch's St. Zita.



Photograph 2.7 Kelp "clotheslines" were hauled in and fronds removed gently to avoid breakage. Two to four herring egg layers were deposited smoothly on most blades.

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Photograph 2.8 Deck crews removed weights and gangion lines from each frond, then snapped blades from the attachment point to the stipe, leaving the pneumatocyst attached to the stipe.



Photograph 2.9 Herring Roe on Kelp Harvest: Blades were gently placed into fish totes for transit to Sitka Producers Cooperative, about two hours away.

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Photograph 2.10 Herring Roe on Kelp Harvest: Ungraded *Macrocystis* blades were stacked carefully to prevent egg loss during packing.



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2.5 Roe on Kelp Processing

Sitka Producer's Cooperative

Seine boats in the PGA fleet delivered about 50 totes of fresh *Macrocystis* blades laden with herring roe to the Sitka Producer's Cooperative on the 24th and 25th of March. 12,332 pounds of product were landed on 24 March, and 42,135 pounds were landed on the 25 March, for a total of 54,467 pounds of "raw" roe on kelp. Kanaway Seafoods Fleet Manager, Sandy Souter monitored the landings, recording weights of individual totes by raft. Per contract arrangements, landings were made on an ADF&G experimental fishery gear card (Attachment F).

An SPC crew of 8 to 14 people worked under the direction of Kanaway Seafoods SOK Operations Manager, Richard Walsh. This crew worked for about 7 days at the Sitka Plant. Crew size varied because some workers tended to intermittent deliveries of longline-caught fish to SPC. Processing at SPC would have continued an additional week or so, but specialized processing at an outside plant became necessary.

As described in PGA's Processing Plan, the crew proceeded to introduce a 100% brine solution into each tote following delivery. After initial brining, heavy depressors and lids were placed on the product, and totes were rotated until each attained the desired level of brine saturation. Absorption of salts from the brine is dependent upon kelp thickness and egg deposition consistency, and is therefore variable. Over the course of about 24 hours, totes were treated with two to four brining sessions.

Brined blades were trimmed, graded, drained in baskets and then weighed. Blade pieces were placed in pails by grade, and topped with a scoop of fine salt (Photographs 2.11 – 2.15). The target net packing weight was 34 pounds of product per pail. The crew filled each pail with brine and shook loose any air bubbles, then they sealed the pails with airtight lids for storage.

The product was held at about 20° Fahrenheit during all phases of storage, domestic shipping and transport overseas. The high salt content of the product precludes damage from freezing at this temperature.

Silt Setback

During the course of processing, the Kanaway team discovered signs of silt in the product. They inspected further and found that two rafts had been contaminated with very fine layers of silt either on the kelp or mixed in with the egg layers.

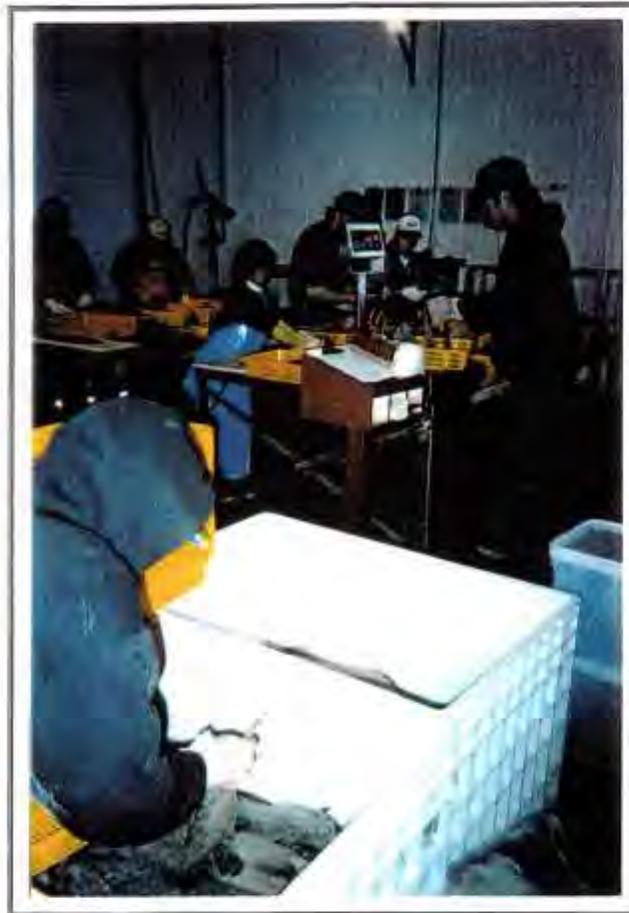
Silt contamination is unacceptable in the marketplace. Since SPC did not have the proper equipment for inspecting and cleaning silt from the product, the crew sealed brined totes from two silty rafts and shipped them south.

The crew palletized the processed pails and loaded them with brined totes into containers for shipment to Bellingham. Alaska Outport Transportation Association and Northland Services, Inc. transported totes of unprocessed product and pails of processed product from Sitka to Home Port Seafoods plant in Bellingham on April 11, April 20 and May 7.

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Kanaway Seafoods, Inc. Bellingham, Washington

Eight to ten crew processed Sitka Sound roe on kelp for about ten days. According to Richard Walsh, about five days of this time was consumed addressing the siltation problem. The cleaning effort was worth while, as it effectively salvaged the product and improved both grade and price.



Photograph 2.11 About 50 totes of SOK were harvested from Sitka Sound during the test fishery. Blades were treated with a saline solution until the product was saturated with brine. The Sitka Producer's Cooperative crew processed SOK from two rafts, and shipped totes from the other two rafts to Bellingham to remove fine silt with specialized equipment.

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Photograph 2.12 Kanaway Seafoods processing experts guided Sitka Producers' Cooperative crew members in trimming and grading Roe on Kelp produced in the 1998 test fishery.



Photograph 2.13 Roe on Kelp grades are based upon kelp quality and size, and on thickness and uniformity of the herring spawn deposited on each blade. Sitka Sound SOK was of very good quality, and was well received by consumers in Japan.

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Photograph 2.14 The SPC crew drained and then weighed SOK into 17-pound baskets. Graded product was then consolidated into pails for shipment to Japan.



Photograph 2.15 Pailed SOK was topped with a scoop of fine salt, air bubbles were "bounced" out of the pails, and then each pail was lidded. This brined product was held at 20 degrees during storage and shipping. 57, 038 pounds of roe on kelp was produced during the test fishery.



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2.6 Product Quality Assessment and Marketing

Sitka Sound "Kazunoko Kombu" was graded both in Sitka at the SPC plant and at the Home Port Seafoods plant in Bellingham. Richard Walsh was responsible for directing all grading. All graded and pailed ROK was held at the Bellingham Cold Storage for buyer evaluation.

In advancing along the learning curve through the execution of this experimental fishery, some SOK grading criteria were not met. These are parameters which influence the ultimate price for the product and which can be improved upon in the future:

- Some *Macrocystis* kelp was too young and exuded mucilage such that eggs did not adhere well.
- The size of most of the blades used was slightly smaller than ideal – broader blades would have been more acceptable.
- The egg coverage was generally very good, some was not consistent
- Kelp "melting" – some kelp showed signs of deterioration at processing time.
- Silt was present in some of the product, even after extensive washing
- Egg sloughing, or "peeling" occurred in a small percentage of the product, and is related to kelp deterioration

Pacific Coast SOK Quality Comparison

Kanaway's Souter and Dan Nomura offered the comparison that Sitka Sound product was better than the quality of SOK harvested in California – which is graded at a scale about two levels lower than was PGA's product. Within the region, Souter and Nomura estimated that PGA's SOK not quite on par with BC production. Nomura indicated that the Sitka Sound area resources are of sufficient quality to potentially produce BC grade SOK, but the BC fishermen's technique is more refined for dealing with Northern roe on kelp production.

In Nomura's opinion, Hoonah Sound SOK is still top quality in southeast Alaska – so superior that it fills a unique niche for extremely thick, or "jumbo" SOK in the Japanese gift market. Both in quality and in price, Sitka Sound product quality is between that of Craig/Klawock and Hoonah Sound.

Product Purchase by Japanese Importers

Upon inspection of the lots in late June, Kanaway Seafoods concluded negotiations on the sale of the product with the Japanese buyers. Their apprehensions regarding the purchase of product from a new location and some concern over residual silt in the roe inspired a very thorough inspection of product quality. The buyers concluded that most of the product was of good quality for the target market. Buyers purchased the entire volume.



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Sales of the product were finalized on 29 June 1998. Dan Nomura provided the following information on weights and grades assigned to the product.

Summary of Kanaway Seafoods Final Production and Settlement Report Prices and Total Values Reported are Net, Less 3.3% Processor Tax				
Grade	Weight (pounds)	Percentage By Grade	Price per Pound	Total Value (\$\$\$)
1	11,821	21%	\$ 7.58	89,603.18
2	30,166	53%	\$ 5.78	174,359.48
3	9,078	16%	\$ 4.40	39,943.20
4	1,461	3%	\$ 3.21	4,689.81
5	1,233	2%	\$ 1.19	1,467.27
5P	1,137	2%	\$ 0.45	511.65
5T	2,142	4%	\$ 0.45	963.90
TOTALS	57,038	—	(avg. \$5.46/lb)	\$261,538.49

Once in Japan, Sitka Sound Roe on Kelp was fairly well received by retail buyers and consumers. The Japanese companies processed the brined ROK into a variety of products for distribution. Most of the product was sold to the more common restaurant and grocery store markets. According to Dan Nomura, a small amount of Sitka Sound product was sold through the gift market. Buyers reported that the products were broadly accepted alongside production from other locales (B.C, Hoonah and Craig).

Product Prices

Marketing consultant Dan Nomura conceded that the prices paid for the Sitka Sound product were lower than hoped for, but were acceptable considering market circumstances. The seafood market in general has been suffering from the low value of the Japanese yen, an unfavorable exchange rate, and the flagging Japanese economy. Since roe on kelp is a specialty market, it has suffered more than have markets for more essential goods. These factors, coupled with product unfamiliarity, yielded suboptimal prices for a developed product, but satisfactory prices for first year production.

Japanese importers have expressed an interest in purchasing SOK from Sitka Sound in the future. Nomura feels that this interest will support increased production of SOK from southeast Alaska. However, several significant hurdles must be addressed.

Based upon his recent research in Japan, Nomura has concluded that the corporate gift market for roe on kelp is shrinking, but prices remain high for the smaller volumes purchased in this market. Markets for thinner product, like that produced in Sitka Sound, are slowly expanding. A trend that began in 1997, in which a decrease in import prices led to expanding the market for these lower priced products, continues.

Most British Columbia and California producers currently cater to this market. About 1.5 year's of production from these sites is currently on inventory. Nonetheless, Nomura feels that if Sitka Sound SOK methods were refined to more specifically meet market



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needs for a thinner, everyday Kazunoko kombu product, there will be opportunities for building markets for more SE Alaskan SOK.

General factors influencing the current market climate for Kazunoko Kombu and which will influence market expansion opportunities in the future include:

- Supply quantity of competitive sources of Kazunoko kombu
- Product quality
- Economic conditions in Japan
- Market niche development
- Pricing
- Inventory/Carryover
- Level of marketing effort and effectiveness

These issues present a challenge to the future of roe on kelp fisheries in Alaska. Experts such as Dan Nomura and Alaskan seafood marketing authorities are optimistic that implementing a well-devised strategy for producing consistently high-quality product to fit the needs of the thinner style Kazunoko Kombu market will yield favorable economic results in the long term.



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Section 3. Subsistence Fishery Interactions

Prior to the test fishery, subsistence stakeholders in the Sitka Sound region expressed apprehension regarding the potential impacts of the SOK fishery on traditional and customary uses of *Macrocystis* kelp, herring stocks and the roe-on-hemlock-branch personal use harvest. In response to these concerns, the Board of Fisheries directed ADF&G to require the contractor to carefully monitor the test fishery and endeavor to ameliorate any conflicts that might arise.

Macrocystis for the experimental fishery was collected miles away from traditional harvest areas near Craig, Klawock, Hydaburg, and Sitka. Therefore, there was no competition for kelp with the traditional and customary harvesters of kelp or roe on kelp in those areas.

PGA hired Mike Miller, member of the Sitka Tribe of Alaska, to serve as liaison between subsistence harvesters and the test fishery team. Miller participated in ADF&G planning discussions and tribal meetings before the 1998 herring season. Community members, city officials and others interested in the fishery contacted Miller before, during and after the season to have general questions answered from his local perspective.

Miller remained onsite in Sitka Sound during every phase of the test fishery (Photograph 3.1). In addition to monitoring subsistence activities in the Sound during the fishery, Miller also assisted subsistence harvesters who wanted to suspend hemlock boughs near or on the HROK platforms (Photographs 3.2, 3.3).

Miller communicated daily with PGA's onsite biologist, Michelle Ridgway. Miller received no reports of conflicts or complaints from members of the subsistence community at any time. Subsistence harvesters setting branches or harvesting wild spawn on kelp near the platforms said they had no difficulty working around the structures or attendant vessels. Excellent harvests were reported by subsistence harvesters collecting branches set on, near or miles away from the HROK platforms during the 1998 season (Photograph 3.4).

Concerns and questions from locals regarding the test fishery were also directed to ADF&G, the Sitka Tribe of Alaska leaders and staff, and to the City of Sitka. A summary of responses to the test fishery from these organizations follows.

Alaska Department of Fish and Game, Sitka Office

Dave Gordon, Bill Davidson and Doug Mecum directed the 1998 Test Fishery in Sitka Sound. They indicated that members of the Sitka community were interested in the fishery, and frequently asked questions about the new gear type. But no one from the public expressed having conflicts with the fishing team or their gear during the test fishery.

"Neither the department nor the contractor's liaison with PGA received any complaints from individuals participating in the subsistence harvest of SOK or roe on branches." Doug Mecum, Reporting to the Board of Fisheries in Wasilla, October 1998

Sitka Tribe of Alaska (Also see Attachment H)

Reported by Jude Pate, Legal Counsel for the Sitka Tribe of Alaska
and Jack Lorrigan, Biologist for the Sitka Tribe of Alaska

Jude Pate observed the test fishery through daily boat excursions to the test fishing grounds, and filmed many aspects of the fishery. He also solicited and documented the responses of Tribe members to the fishery during and following the season.

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Pate reported that the Sitka Tribal members involved in subsistence harvesting in 1998 reported "no conflicts with the 1998 test fishery participants or their gear". He conveyed that all test fishery participants were diligent in communicating with the Tribe, and are considered to have done an excellent job at conducting the test fishery,



Photograph 3.1 Paul Gronholdt, President of PGA, aboard the Tug Thunderbird – observing subsistence fishing near the test fishery platforms. All members of the PGA team shared in the responsibility of avoiding conflicts with traditional fisheries and adjusted test fishery operations as needed per PGA's subsistence liaison's guidance.

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Photograph 3.2 Sitka Sound area subsistence fisherman setting hemlock trees in an active herring spawning area for gathering herring eggs on branches at North Kasiana Island, March 1998. The trees were anchored with rocks and tied to trees on shore. Within three days these trees were covered with 4-5 layers of herring spawn.



Photograph 3.3 Subsistence fisherman, setting hemlock trees for subsistence harvest of roe on branches near an open harvest platform used in the test fishery. Miller and others fishing branches in the area had successful harvests and indicated that the platforms were not an obstacle to their gathering of herring eggs.

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Photograph 3.4 Sitka Sound area subsistence fishermen enjoyed an excellent harvest of herring eggs on hemlock branches in the 1998 season. With over 60 miles of spawn in the Sound, there was a multitude of sites available near town for traditional egg gathering.



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Section 4.0 Environmental Considerations

The conservation merits of the open harvest platform roe on kelp fishery were evidenced during this experimental fishery. Relative to sac roe and closed pounding fisheries, there are some clear resource conservation benefits. It is beyond the scope of this report to analyze these conservation aspects or to assess environmental impacts incurred during the OHP fishery.

Rather, we report here our observations made during the fishery, and mention the research undertaken by the Alaska Department of Fish and Game. Some commentary on potential impacts of this fishery and contrasts with environmental concerns arising in other herring fisheries are discussed briefly.

Alaska Department of Fish and Game Research

In order to learn as much as possible about the OHP fishing method and the impacts of this experimental fishery upon herring stocks and the *Macrocystis* resource, ADF&G initiated a research plan during the spring 1998 season. Department statistician, Dave Carlisle, designed a randomized sampling program to estimate the total amount of herring eggs deposited on kelp blades. These data were used to estimate the total amount of herring "participating" in the OHP experimental fishery.

Sitka management biologists and their crew carried out the sampling plan, and other southeast technicians conducted the egg deposition counts. In addition, ADF&G staff was present for every phase of the fishery. They recorded field observations, which might provide insight into impacts of the OHP method (Photographs 4.1 – 4.3).

In their preliminary report, ADF&G estimated that 10.5 billion eggs were deposited on kelp blades in the fishery. Based upon results of their fecundity study, ADF&G estimated that 104 tons of herring were utilized in the fishery. The conversion of herring to pre-brine weight of SOK is 0.26.

ADF&G reported that PGA harvested about 10,000 pounds (5 tons) of *Macrocystis* kelp, which included 4,080 fronds, each with an average of 16 blades, for a total estimate of 65,280 blades. The Sitka Area Management Biologist and his staff visited the harvest site on the north shore of Heceta Island about six weeks following the harvest. They reported that "there was no obvious impact on the kelp bed".

ADF&G's detailed findings from this research and data analysis are forthcoming. A summary of their preliminary research results is presented in the Progress Report to the Board of Fisheries, dated October 16, 1998.

The *Macrocystis* Resource and Kelp Bed Ecosystem

Southeast Alaska harbors extensive beds of *Macrocystis* kelp, but the biomass, distribution, and ecological role of these kelp beds is not fully known. The increase of herring roe on kelp fisheries in recent years has created competition for high quality kelp blades that are mature at the time of herring spawning activity. After conducting the test fishery, the PGA team feels that there is good quality kelp in southeast to support the growth of the roe on kelp fishery. However, a strategy may be needed to ensure that every fishery group has access to high quality kelp at the time of their fishery.



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In other Pacific coast regions with active roe on kelp fisheries, harvesters and managers have encountered times when high quality kelp was not available in sufficient abundance to support the fishery. This dearth of kelp has been due in part to factors including inter-annual variability, low light in spring months leading to poor early season growth, and possibly overharvests. Kelp scarcity has been experienced in Canada and California. In order to continue producing roe on kelp in some areas, British Columbia recently allowed roe on kelp "pounders" to harvest kelp in marine parks.

We do not yet understand the impacts of *Macrocystis* harvests on the plant, the kelp bed, or the marine community this habitat supports. We feel that the selective harvesting of fronds from some plants did not impact the kelp bed extensively. Because the harvest occurred early in the growing season, it is likely that emergent understory fronds replaced the biomass harvested by late summer.

Ridgway's observations of the kelp bed in July and September suggested that this was so. Non-quantitative observations indicated there were no gaping holes or obvious signs of damaged kelp in the bed that was harvested.

Marine species flying or swimming near the kelp beds at the time of harvest did not seem to be disturbed. We presume that the use of outboard engines, coupled with surface canopy frond removals would cause motile species to relocate – at least temporarily. The broader ecological implications of this kelp harvest are not yet known.

Herring Resources and Health

Both environmental and conservation benefits of the passive OHP fishing method for the herring stock are numerous. As described in Mundy, *et al* 1998, we observed herring volitionally swim into the kelped platforms and voluntarily spawn on hanging kelp blades. The fish were never herded and the PGA fishing team did not observe any signs of the herring being stressed when spawning. Even in the presence of crewmembers on the rafts, herring proceeded with spawning at a leisurely pace. It was assumed that most fish spawning on OHP kelp had already spawned elsewhere, or were destined to do so following deposition on the "fishing" blades.

Thus, herring "participating" in the OHP fishery contribute to the genetic diversity and gamete abundance of the Sitka Sound herring stock, and they swim away to return for potential spawning in subsequent years. The effects of this fishery on herring therefore seem to be in the removal of an unknown percentage of each spawner's gamete production.

Some other potential environmental consequences of the OHP fishery include:

- Herring seem to be attracted to the shelter provided by the platforms – their migration or spawning on wild habitat may be altered.
- Anchors used to secure the rafts may have some impact on the benthic community, but this is assumed to be minimal.
- Some blades may break away from the platforms, and eggs may slough off of blades to the seafloor. This may attract scavengers, and the sloughed eggs may not hatch. The impact of this is assumed to be negligible.



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Based upon observations made during the experimental fishery, these impacts appear to be minimal and have no inordinate or long-lasting environmental consequences.

Comparison of Environmental Consequences in other Herring Fisheries

In contrast to other herring fisheries and unlike other roe on kelp methods, the Open Harvest Platform method is not lethal to herring or *Macrocystis* kelp. The OHP manner of harvesting results in a removal of gametes from the herring genetic pool and partial removal of biomass from individual kelp plants.

Herring involved in the traditional sac roe fishery are either killed, or are held while roe composition is determined, and then released. Ultimately, they are considered dead.

Seined herring introduced into closed herring roe on kelp pounds are allowed to spawn for several hours to several days. Because there is no reasonable means of counting the number of fish in the pounds, Commercial Fisheries Director, Doug Mecum, noted that "we are unable to regulate the amount of herring in each (closed) pound" (January 1998 BOF Meeting, Sitka).

This situation has led to fishermen exceeding the herring quota in these fisheries on numerous occasions. Additionally, some fishermen and observers of the fishery report that the fish are clearly stressed while in the pound, and upon release.

Recent research in Prince William Sound has confirmed that closed pound herring have a high rate of viral infection. In 1998, this VHS virus was isolated from the water of three pounds in PWS in sufficiently high levels to transmit the disease to nonimmune fish.

Wild harvests of roe on kelp in Alaska involve the taking of whole seaweed plants using knives, rakes, or by handpicking. In contrast, *Macrocystis* is not killed or dislodged during harvest for use in the OHP fishery.

Because herring are neither crowded nor stressed when using the OHP method, the environmental consequences incurred in the sac roe and closed pound fisheries are not at issue. This sublethal take of both herring and kelp resources is more beneficial to the genetic integrity of those species and likely contributes to potential sustainable yield of those resources.

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Photograph 4.1 The Alaska Department of Fish and Game, Commercial Fisheries Division developed a rigorous research plan to gather data on the experimental fishery.

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Photograph 4.2 ADF&G's randomized sampling design was implemented in order to sample egg density for calculating the biomass of herring "participating" in the fishery.



Photograph 4.2 In order to achieve sampling objectives while the harvest was underway, ADF&G enlisted members of the PGA team to assist in tagging fronds which were to be pulled for sampling purposes.



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Section 5.0 Economic Review

Although the 1998 experimental fishery was, by design, not a profitable endeavor for PGA, a review of the costs and benefits resulting from the fishery are useful for predicting the potential scale of economic impact the alternative fishery could have on Sitka. Benefits derived by the Sitka Community through the 1998 experimental SOK fishery included direct income to locals through short-term jobs, and moneys generated through taxes and retail sales of goods and services.

This section is not intended to serve as an economic analysis of the spawn on kelp industry. Figures on the revenues generated in the fishery are in section 2. Comparisons of the economic yields in various herring fisheries are reviewed in Mundy, Sharr and Ridgway, 1998. This section provides a synopsis of the types of expenditures incurred in the fishery, and an approximation of the labor force involved in each phase of the operation.

Sitka Area Jobs

An average of about ten local people worked at Sitka Producer's Cooperative processing roe on kelp for about seven days. They were paid through contractual arrangements between SPC and PGA. Four other southeast residents were contracted by PGA to assist with the kelp harvest (two from Sitka, two from the Craig area).

Eight to ten people worked on further processing at the Home Port Seafoods plant in Bellingham for ten days. Had the product not been silted, or if proper equipment had been available in Sitka to handle the silt-cleansing task, this employment would have been based in Sitka.

Two consultants from the Lower 48 and two consultants from southeast Alaska were hired by PGA for onsite monitoring of the fishery, to serve as local liaisons, and to report on performance of the test fishery. These contracts were for one to several weeks in duration.

In order to monitor and conduct research on the experimental fishery, ADF&G tasked southeast staff with project-specific duties. This resulted in additional work for field technicians, statisticians, lab technicians, and Sitka area management staff. Most of the additional staff time and associated costs were compensated for by the contractor's required surety bond with the State.

Overall Labor Force Involved in the Fishery

Fishing by the Open Harvest Platform method is very labor-intensive. Since most captains and crew were new to this fishery, the test fishery involved a great number of people for some parts of the operation. Over time, crews may become somewhat more efficient, but the sophisticated nature of the fishery requires a great deal of attention to detail, and always requires more labor than the direct harvest herring fisheries.

Based upon logbooks entries and notes made by PGA team members, the table below summarizes the estimated number of workers involved in each phase of the test fishery in 1998.



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Estimated Number of People Involved in the Experimental Fishery				
Phase of the Fishery	Number of People Involved *			Approx. Number of Person-Days*
	Total	PGA Crew	Contractors Or plant crew	
Mobilization and Staging	6	6	0	24
Kelp Harvest	9	4	5	11.25
Loading Racks w/ Kelp	37	31	6	27.75
OHP Fishing	10	8	2	40
Towing Rafts to Harvest	8	8	0	8
Harvesting in Cedar Cove	30	30	0	45
Harvest/Transport to SPC	6	6	0	9
Processing at SPC	8-12	0	8-12	70
De-Mob in Sitka	4	4	0	4
Processing at Home Port	8-10	0	8-10	90
Loading/Shipping to Japan	3	0	3	0.75
Marketing/Sales Effort	1.5		1.5	30
TOTALS	—	—	—	359.75

*Est. person days = average number of people X estimated # days worked on that task

General Expenditures in Sitka

Beyond the investment in equipment and costs to mobilize in Sitka, the PGA team incurred some expenditure while conducting the fishery in Sitka. These general costs included the following:

- Barge Lease
- Lodging for some PGA members
- Restaurants and groceries: (About 30 people for six days)
- Fuel for five vehicles and some vessels
- Three rental cars
- Taxicabs
- Entertainment
- Harbor Fees
- General purchases -- supplies

The community of Sitka received some benefits through city sales taxes. And 3% of the total ex-vessel price of the roe on kelp product was paid to the State in raw fish taxes. A percentage of this contributes to the City of Sitka's community apportionment of statewide raw fish taxes.



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Discussion and Final Remarks

The 1998 Experimental Fishery proceeded largely as anticipated. PGA's collective experience, as well as good weather and an early herring spawn contributed to the overall success of the fishery.

The roe on kelp suffered from the silt infiltration, but otherwise the product met expectations reasonably well. The price paid was sufficient to cover most costs for conducting the experimental fishery and associated research and management. The PGA team feels that the quality of product can be improved with increased monitoring of seawater conditions prior to and during the fishery.

The Sitka Community did not experience any resource user conflicts as a result of the fishery. Commercial and subsistence harvesters appeared to be either unaware of the fishery, or content with the manner in which it was conducted in Sitka Sound.

Within the scope of the PGA team's ability to observe impacts on the marine ecosystem, the fishery met many of the anticipated environmental and conservation goals. Neither fish nor kelp plants were likely killed in this "harvest".

Final Remarks

The quantity of Sitka Sound SOK available for harvest in the future is dependent upon the abundance of spawning herring and *Macrocystis* kelp and management decisions regarding their exploitation rates. The Alaska Department of Fish and Game, the Commercial Fisheries Entry Commission and the Board of Fisheries will determine resource assessment, quotas and allocation issues.

The overall market outlook is challenging. Experts conveyed that implementation of a strategic plan to tailor roe on kelp production to fit emerging market trends is necessary to ensure SE Alaska's product a niche in this specialty market arena. Participants in the 1998 experimental fishery concur that meeting these market needs with more refined Sitka Sound roe on kelp product is plausible. The PGA team feels that pursuing this market potential and hence diversifying the herring fishery management regime will provide broader economic benefits from this resource to the people of southeast Alaska.



ASSESSMENT OF *MACROCYSTIS* BIOMASS, QUALITY, AND HARVESTING EFFECTS
IN RELATION TO HERRING ROE-ON-KELP FISHERIES IN ALASKA



By

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and

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ABSTRACT

Interest in harvesting *Macrocystis* kelp for use in herring roe-on-kelp (ROK) fisheries is increasing, but information on the biology and ecology of kelp is limited for southeast Alaska. This is a report of a four month pilot study to evaluate the amount of kelp available for harvest and the recovery rates of kelp from harvest. Estimating the amount of kelp available consisted of first estimating the total abundance of kelp in a survey area and second estimating the biomass of available and desirable kelp. The total biomass was estimated by surveying the surface area of kelp beds in selected regions on the west coast of Prince of Wales Island. Randomly selected index beds were surveyed to determine kelp density, and samples were measured and weighed to estimate the average weight of kelp. An estimated 225,225 tons of *Macrocystis* kelp were found in the survey area. The harvest of kelp for ROK is highly selective. By comparing harvested to available kelp, it was found that blades at least 14 cm in width and fronds with a high proportion of desirable blades were selected. The proportion of blades and fronds meeting these selection criteria was estimated for the index beds, and the biomass of desirable kelp was estimated to be 32,663 tons or about 14% of the total kelp biomass in April. The growth in kelp canopy was rapid from March to April, with March canopies about 45% smaller than April canopies. Therefore, the biomass of desirable kelp in March was about 18,000 tons. Even if kelp harvests increase 10 times over present levels, the harvest will only represent about 3% of the lowest estimate of the biomass of desirable kelp.

There were few significant effects of experimentally harvesting kelp canopies in March and/or April. Kelp beds that were experimentally harvested at both times or only in April had shorter fronds and possibly fewer large fronds and fronds per plant. This experiment was monitored only one month after the last harvest, so there may not have been sufficient time for the cut kelp to fully recover. This preliminary experiment indicates that kelp recovers rapidly from harvesting in the spring.

INTRODUCTION

Kelp beds are a conspicuous element of the outer northeast Pacific Coast (Foster and Schiel 1985). All kelp belongs to the order *Laminariales* (*Phaeophyta*), and are made up of holdfasts, stipes, and blades. Some of the kelps produce floats that buoy them to the surface, these are known as the canopy forming kelps. The giant kelp, *Macrocystis* sp., is a well known canopy forming genus that occurs in much of the coastal Pacific Ocean. The terminology associated with *Macrocystis* is fairly complex as is the morphology (Figure 1), consisting of an attached holdfast with numerous fronds supporting numerous blades. *Macrocystis* often grows in thick beds that form a unique and important habitat.

Kelp beds play an important role in nearshore ecosystems in at least three ways (Duggins 1988). Kelp beds greatly increase the habitat complexity, increase sedimentation rates, and contribute large amounts of fixed carbon to the ecosystem (Duggins 1988, Duggins et al. 1989). Kelp beds provide as much as 15 m² of surface area for every square meter of substrate (Wing and Clendenning 1971), providing habitat for infaunal and epifaunal organisms (Duggins 1988). In addition, several species such as fish, mysids, and shrimp utilize kelp beds extensively (Coyer 1984). Juvenile and young-of-the-year fish may exhibit particularly strong, positive relationships with kelp beds (Carr 1991, Ebeling and Laur 1985). Kelp beds can also be significant sources of production, contributing large amounts of carbon in the form of attached plants, drift plants, particulate organic matter (POM), and dissolved organic matter (DOM) (Duggins et al. 1989). This carbon production is not limited to kelp beds as some of the unattached plants drift outside of the bed with some pieces drifting miles from the source bed. In areas with lush kelp beds, about 50% of the total carbon in some fishes and birds is derived from kelp primary production (Duggins et al. 1989). Finally, kelp beds alter the flow of water in and around the bed (Jackson and Winant 1983). This altered flow results in higher sedimentation rates that may increase suspension feeding and recruitment of planktonic larvae. Altered flow caused by kelp beds may also increase the availability of planktonic food sources, such as barnacle cyprids, to resident kelp bed fish (Gaines and Roughgarden 1987).

The morphology of kelp blades has been shown to be dependent upon water movement in many kelps (Norton 1969, Druehl 1978, Norton et al. 1982, Koehl and Alberte 1988). In low flow areas, blades generally have more undulations, are larger, wider, and are not split. *M. integrifolia* shows similar plasticity in growth form (Druehl 1978, Hurd et al. 1997). This plasticity in growth form is highly functional. Undulations dramatically increase drag forces, resulting in higher blade mortality in high flow regimes, but in low flow areas the undulations serve to increase nutrient uptake by initiating turbulent flow around the blade (Hurd et al. 1997). Also, larger blades are better able to gather light but cannot withstand the drag and accelerational forces exerted by wave action (Denny et al. 1985).

There has been interest in harvesting kelp for various purposes on the Pacific Coast of North America since at least 1911 (Foster and Schiel 1985). In California, about 100,000 tons of kelp are harvested annually for various products. Harvesting north of California has been sporadic, with few large scale commercial harvests. In British Columbia and Alaska *Macrocystis* kelp is harvested to support the herring roe-on-kelp (ROK) fishery. Since the price paid for the end product is dependent upon the quality of the kelp blade, harvesting kelp for ROK is highly selective. In particular, fronds with many wide blades are desirable.

The research described here was initiated due to interest in harvesting kelp for a roe-on-kelp (ROK) fishery near Sitka, Alaska. A proposal was made by commercial harvesters to the Alaska Board of Fisheries in 1996 to allow Sitka Sound herring sac roe purse seine permit holders the option of using open pound racks to harvest herring roe on kelp. This would be in lieu of, or in addition to, using purse seines. The board took no action on the proposal at their 1997 meeting, but requested that the department conduct



an experimental gear test fishery. The department conducted the test fishery in 1998 focusing on management issues related to the pound fishery and the gear. A second test fishery was conducted in 1999 primarily to fund the kelp research described here, as well as to revisit some issues related to fishery management. A second proposal to allow for a roe-on-kelp fishery in the Sitka area will go before the board at their 2000 meeting.

An understanding of the abundance and dynamics of giant kelp, *Macrocystis* spp., is essential to manage the use of this alga for existing and emerging herring ROK fisheries. Kelp harvests in Alaska are currently being managed with limited knowledge of kelp abundance, growth, or recruitment. In conjunction with other roe-on-kelp fisheries, the Sitka Sound open harvest platform herring roe-on-kelp test fishery presents the possibility of greatly increasing the harvest pressure on *Macrocystis* kelp resources. At least two pieces of information are needed to properly manage kelp harvests in Alaska, 1) the amount of kelp that is available and desirable for harvest, and 2) the effects of harvesting on kelp beds and associated communities. This report provides a preliminary assessment of the abundance of *Macrocystis* kelp resources in Alaska. Also, the results of an experiment assessing the short term effects of harvesting on kelp beds and the ability of kelp beds to recover from harvests are reported.

METHODS

Standing Crop Estimates

Aerial Surveys

Aerial surveys of kelp beds on the west coast of Prince of Wales Island were conducted between March 23-29, 1999 (Figure 2). The coastline was surveyed by Scott Walker, an experienced ADF&G herring spawn recorder. During the flight all significant *Macrocystis* kelp beds were marked in red pen on black and white charts by the surveyor, recording the approximate outline of each bed. The area around Duke Island and Tree Point was surveyed on 11 June 1999.

The resulting maps with marked kelp beds were analyzed to ascertain the surface area of kelp beds. The original maps were scanned into digital format (Figure 3), and an image that included only the red "kelp beds" was produced from the original scanned image (Figure 4). These two images were produced with Adobe PhotoShop. Using an image analysis program (Optimus), the original image was used to scale the red only image, using landmarks of known length. An averaging procedure (5x5 pixels) was applied to the red-only image to eliminate small lines, numbers, and letters within the red patches. The red patches were then automatically outlined, and any remaining unwanted "holes" or other images were removed by hand. The image analysis program then determined the total area of mapped kelp beds and the data were downloaded to Excel for analysis. The Duke Island and Tree Point survey was not analyzed due to relatively low *Macrocystis* abundance and limited time.



Index Beds

One index bed was randomly selected from each subdistrict surveyed, resulting in a total of 11 index beds. To select a bed, a randomly placed point was located in each subdistrict. The bed that was closest to the point and was at least 20 m² in surface area was selected. To estimate the growth of beds during the spring, these index beds were photographed during the March aerial survey and on April 28, 1999. Photographic methods were consistent between dates and the altitude was recorded for each photograph. For each index bed, a pair of photographs, one each from March and April, were selected based upon similarity of photograph angle, direction, and altitude. The photographs were scanned into digital format and analyzed using Optimus image analysis program. All canopy forming kelp was outlined by hand using the image analysis program and the total area of kelp plant canopy (excluding water area between fronds) was obtained. This is not the same measure of the surface area of beds obtained from the hand-drawn bed maps in March which includes water area between fronds.

The April photographs were calibrated using a photograph of an object of known dimensions taken from the same altitude. The March photographs were calibrated by measuring a distinctive object in the April photograph and using the same object as a scale in the March photograph. This procedure insured that each pair of photographs were calibrated similarly. If the calibrations were off, they were off by the same amount for each date so between date comparisons could still be made.

To estimate the length of fronds and the density of plants and fronds, four index beds were visited between April 19-24. The density of kelp in each bed was estimated by scuba divers. Six transects were oriented perpendicular to the long axis of the bed and placed at even intervals along the length of the bed. If transects were longer than 20 m, then 20 m long sections were sampled at the inside edge, outside edge, and approximate center of the transect. The total length of the transect was recorded as well as the distance between transects. The start and end depths of each transect were also recorded. Divers swam along transect lines and counted the number of large (>1.5m) and small (<1.5m) *Macrocystis* fronds for each holdfast encountered within one meter of the transect line. Every tenth frond was measured for length starting with the tenth frond.

Commercially Harvested Bed

Kelp was harvested for the Sitka Sound open harvest platform test fishery from a bed on the northeast side of Port Alice in Sea Otter Sound (Figure 2). This bed was surveyed by scuba in March just after the harvest and again in April as part of the index bed survey. The methods of survey were similar to the methods used for the index beds. The total harvest taken from this bed was recorded.

FronD Biomass

To estimate the average weight of fronds, 22 fronds of varying length were weighed and measured. The fronds were cut into 1 meter sections starting from the tip and working towards the base. The weight and section number were recorded for each section. At the base, the length of the final piece was also recorded. Thus, the total weight and length of each frond could be determined.



Total Biomass Estimates

The total biomass was estimated by multiplying the total surface area of kelp beds (March) by the average density of large fronds (April) and the average weight per frond (April). The average weight per frond was estimated by multiplying the ratio estimator of average frond weight/average frond length from the weighed fronds by the average length of fronds in the index beds. The relationship between frond length and weight was linear and had a zero intercept, so using a ratio estimator was appropriate. The surface area of the beds drawn in March was assumed to remain constant through April for purposes of this calculation.

An estimate of the variance associated with the total biomass estimate was generated by combining variance estimates for both frond density and average frond biomass. Frond density averages and variances were weighted by bed size (Cochran 1977). The variance associated with the average frond biomass was calculated using the methods of Barnett (1991).

Estimated Versus Harvested Biomass

Two small beds were surveyed by scuba divers to assess the accuracy of the biomass estimates. The beds were small (<150m²) enough that an entire frond count census was completed for each bed in one day by two scuba divers. Every tenth frond was measured for length. After surveying, the canopy was harvested from both beds and the total frond biomass was harvested from one bed. All harvested material was weighed. Thus, the estimated biomass from scuba sampling could be compared to the actual biomass obtained by harvesting.

Desirable Biomass

Blade Morphology

The morphology of individual kelp blades was examined to assess the desirability of kelp. Three fronds from each of ten systematically located points in the Port Alice bed were collected before any commercial harvest occurred. The tenth, fifteenth, and twentieth blades from the apex were detached and measured. The youngest free blade was counted as blade number one. The total length and maximum width of each blade were measured. In addition, the number of holes in the blade, the general condition of the blade, and the presence or absence of epiphytes and silt were recorded. The harvested kelp was also sampled. Forty haphazardly selected fronds were collected from the harvested kelp and three randomly chosen blades were sampled. The morphology of blades sampled before harvest was compared to commercially harvested blades to determine the criteria used to select blades sampled.

Fronds were collected from the four visited index beds to determine the proportion of desirable blades over the entire region. Fronds were collected over dive transects. The initial goal was to collect a frond at three locations (inside edge of bed, outside edge of bed, and in the center of the bed) along each transect,



but time constraints often reduced the sample size. Blades were then sampled in the same manner as the blades in the harvested bed.

FronD quality was assessed by comparing the number of desirable blades out of the three sampled blades between fronds from various locations. As with blade morphology, frond selectivity was determined by comparing the fronds available in the harvested bed before harvest to the fronds actually harvested. The proportion of fronds desirable over the entire region was then determined by using the sampled fronds from the index beds.

Biomass Estimates

The biomass of desirable kelp was estimated by multiplying the total area of kelp beds by the density of desirable fronds by the average weight of fronds harvested. The density of desirable fronds was estimated by multiplying the total frond density by the proportion of fronds that were available and the proportion of fronds desirable obtained from the index bed surveys. Available fronds were defined as those that were at least 5.3 m in length. This definition was needed to eliminate those fronds that did not reach the surface (average depth of about 3 m) and have enough additional length to harvest (2.3 m, obtained from the average length of harvested fronds).

The variance component of the biomass estimate was obtained by combining variance estimates from the average weight of harvested fronds and the average density of available and desirable fronds.

Effects of Harvesting

Experimental Design

The goal of this experiment was to assess the impact of harvesting on kelp beds. Three kelp beds in the Craig area were used (Figure 2), and four 20 m transects were permanently established in each bed perpendicular to the depth contours. Kelp density was estimated using the techniques described above for index beds for each study plot before any treatments were assigned.

All transects were marked, numbered, and surveyed between 24-25 March 1999. After the initial survey, the experimental treatments were assigned to the transects. There were four experimental treatments, 1) March harvest (early), 2) April harvest (late), 3) March and April harvest (early+late), and 4) an unmanipulated control. Each of the four treatments were randomly assigned to the four plots in each bed. After treatments were assigned, the plots receiving the early and early+late treatments were harvested by cutting all fronds around the mean low water mark. An 8-meter wide swath centered on the transect line was harvested. The late and early+late plots were similarly harvested after sampling in April. All plots were resurveyed using the standard dive measurements on 24-26 April and 15-16 June 1999.

RESULTS

Standing Crop

Aerial Surveys

The aerial survey identified 751 distinct beds from eight regions on the west coast of Prince of Wales Island (Table 1). The average bed size over the surveyed area was 46,936 m² ranging from 415 to 886,774 m². More than 35 million square meters or 3,524 hectares of kelp beds were surveyed (Table 1). It should be emphasized that this is only a partial survey of *Macrocystis* kelp on the west coast of Prince of Wales Island. It is estimated that this survey represents about 60% of the kelp in this area. In addition there are kelp resources around Baranof Island, Sumner Strait, Kuiu Island, and Duke Island but the area of these resources is unlikely to exceed the kelp beds on the west coast of Prince of Wales Island. In 1913, Cameron (1915) estimated there are about 45,300 acres (18,332 hectares) of kelp in southeast Alaska, but only a small portion of this was *Macrocystis*.

Density Estimates

Many characteristics of kelp populations at the index beds were evaluated using the information from scuba surveys (Table 2). The selection of Port Alice was heavily biased and the scuba surveys reflect this bias. The density of plants, large fronds, and frond length were all greater at Port Alice compared to the index beds (Table 2). The density of small fronds and the number of fronds per plant at Port Alice were both within the range observed at index beds. The overall density of individual plants was about 0.34/m² (excluding Port Alice data). There were more large fronds (mean of 2.44/m²) than small fronds (0.46/m²) at all index beds. The number of fronds per plant ranged between 3.8 and 12.5 with an average of 9.3. Excluding Port Alice, frond length was relatively constant between sites and averaged 6.1 meters.

The average depth of the 4 index and 3 experimental harvest beds was 3.28 m below mean low water (MLW), ranging from 1.25 to 6.13 m below MLW. The depths at Port Alice were greater than at the index beds ranging from 4.27 to 9.45 m below MLW and averaging 7.08 m below MLW.

Frond Biomass Estimates

There was a linear relationship between the length of a frond and its weight (Figure 5). Length was a good predictor of weight, explaining 88% of the variation in frond weight. Since a plant of zero length cannot have any mass, the intercept must be zero. In this case a ratio estimate (average weight:average length) is a simple method to estimate average frond biomass from a sample of lengths. The ratio generated from the data in Figure 5 is 0.39 kg/m. The average length of fronds at the surveyed index beds was 6.11



meters, so the average weight per frond was 2.37 kg. ($0.39 \text{ kg/m}^2 \times 6.11 \text{ m}$). The variance about this estimate was 0.065, calculated using Barnett's (1991) method.

Total Biomass

The estimated biomass of kelp in the areas surveyed was 204,319,652 kg (225,225 tons) with an 80% confidence interval of $\pm 43,802,512 \text{ kg}$ (48,284 tons). Based upon the weight per unit area, this estimate corresponds to "very thin" beds reported by Cameron (1915) and the June harvest yields of Coon (1982).

Estimated Biomass Versus Harvested Biomass

The estimated biomass at both beds was greater than the actual harvested biomass (Table 3). At Pt. Idefonso, only the canopy was harvested, so the biomass below the harvest level was left. This site, however, was only 2-3 m deep, so the amount that was left was minimal. Not all of the harvested material was weighed as some fragments drifted away before weighing.

Desirable Biomass

Blade and Frond Quality

The harvest of kelp for the roe-on-kelp fishery was highly selective with both blades and fronds being chosen for high quality. According to Richard Walsh (personal communication) of Home Port Seafoods in Bellingham, Washington, the two most important factors in grading kelp blades is the overall health and the blade width. For the 1999 SOK fishery, kelp blades in the 14-16 cm size range or higher were selected relative to the blade widths available in the bed (Figure 6). At Port Alice, blade widths in the bed did not change between March and April (Figure 7), but blade areas increased from March to April, indicating that blades grew in length but not width (Figure 7). The width of blades varied between the index beds (Figure 8). Eagle Island had narrow blades with few blades wider than 16 cm. Those blades that were wider than 16 cm were often torn and broken. There was a higher percentage of both narrow (<14 cm) and wide (>20 cm) blades at Harmony Island relative to Port Alice. The few samples taken at Balena Island indicate that most blades were in the 14-18 cm range. At Port Real Marina, blades were very wide with almost all blades more than 16 cm wide, but most blades at this site were covered with fine silt or damaged by grazers.

To evaluate the quality of fronds, the three blades sampled on each frond were rated as desirable or undesirable. A desirable blade had to be at least 14 cm wide, have few small holes, no large holes, free of silt, and not torn. Virtually all of the harvested fronds from Port Alice used in the test fishery had 2 or 3 desirable blades of the 3 sampled (Figure 9), and the percentages used in these two categories were

greater than the available fronds in the Port Alice bed. In the index beds, 38.7% of blades had 2-3 desirable fronds. Most of these desirable fronds were found at one index bed.

Available and Desirable Biomass

To determine the biomass of kelp available and desirable for kelp harvest, both the density of large fronds and the weight per frond needed to be adjusted for the selection of fronds. The density of fronds available for harvest was calculated by multiplying the total large frond density by 51.25%, which is the proportion of fronds that were longer than 5.3 m. The threshold length of 5.3 m was deduced as follows: The average depth of beds surveyed by scuba in this study was rounded down to 3 m below MLS, and this length was added to the average length (2.3 m) of the cut segments of fronds harvested for the Sitka ROK fishery. That is, a frond must be at least 3 m to get to the water surface and then be an additional 2.3 m to make the frond worth harvesting. Thus, the estimated density of available fronds was the average frond density, (2.45 fronds/m²) (Table 2), times the proportion of fronds longer than 5.3 m (0.5125) with a result of 1.26 available fronds/m². The proportion of desirable fronds in the index beds was 38.7%. Therefore the density of available and desirable fronds is 1.26 available frond/m² times 0.387, equal to 0.486 available and desirable fronds/m². The average weight of harvested fronds was 1.73 kg/frond. Thus, the biomass of available and desirable fronds in the surveyed area in April 1999 was 29,631,711 kg with an 80% confidence interval of $\pm 20,161,522.8$ kg, or about 14% of the total kelp biomass.

Growth of Beds - March to April

The canopy cover within all index beds increased from March to April (Table 4, Figure 10). The percent increase in cover ranged from 12% to 311% with a mean increase of 82%. Thus, beds in March will average about 45% less canopy than beds in April. If there is a linear relationship between canopy cover and biomass, then the April biomass estimate can be appropriately reduced to obtain a March biomass estimate. Decreasing the April biomass estimate by 45% results in a total biomass in March of 112,375,808.4 kg and a desirable biomass in March of 16,297,441.3 kg.

Effects of Harvesting

Over three months there were few detectable effects of harvesting upon *Macrocystis* plants or beds (Figure 11). To account for variation in the starting densities or lengths, differences between the June sampling date and the pre-harvest March sampling date were statistically analyzed (Table 5). Average frond length was significantly lower on plots harvested later in the season compared to the early harvest or control plots (Figure 11F, Table 5). There were also marginally significant decreases in the density of large fronds and the number of fronds per plant in the plots harvested in both March and April (Figure 11C, E, Table 5). There were no detectable effects of harvesting on the densities of plants, small fronds, or juveniles (Figure 11A, B, D, Table 5).



DISCUSSION

The total biomass estimate is made up of aerial surveys of the extent of kelp beds, estimates of frond densities, and estimates of frond weight. Each of these three components can contribute to errors in the biomass estimation. Any error inherent in the aerial survey methods was not quantifiable, so the estimate of total kelp bed area was treated as a census with no error in the analysis. There may have been errors in recording the extent of individual beds during the surveys with some beds being overestimated in size and others underestimated. Also, there may have been errors in identifying *Macrocystis* beds. Some *Nereocystis* beds may have been included in the survey, resulting in an overestimate of *Macrocystis* area. Conversely, some *Macrocystis* beds may have been identified as *Nereocystis* beds, resulting in underestimation of *Macrocystis* bed area. Without performing multiple surveys over a single area, it is impossible to estimate these sources of error. A more accurate and efficient method of estimating the area covered by *Macrocystis* needs to be developed. Aerial photography from belly or wing mounted cameras using infrared film would eliminate errors in canopy area estimation and has been used in British Columbia (Foremen 1975) and in Alaska (M. Ridgway, Oceanus Alaska, personal communication).

The error estimates for total biomass were obtained from a combination of the estimates for frond density and frond weight. Frond density estimates made up about one third of the error estimate for total biomass while the frond weight estimates accounted for the remaining error. The disparity between the error contributions of frond density and frond weight indicate that relatively more effort should be devoted to sampling frond weight. A more efficient approach would be to have fewer transects per bed (about 5), sample more beds, and sample about 30 more fronds for weight and length. However, the precision of the sampling was within 22% of the mean with 80% confidence intervals, indicating a reasonable estimate of the total kelp biomass in the surveyed area.

For the two small beds examined, the biomass estimated by scuba surveys was higher than the harvested biomass. Part of this difference was due to handling the fronds in the process of weighing, resulting in the loss of an unknown amount of material. Only the canopy at Point Ildefonso was harvested, so some of the estimated biomass was left on the sea bottom. With these sources of error, the harvested biomass may have been within the range of variation of the estimated biomass. More beds need to be surveyed and harvested to determine if the scuba surveys consistently overestimate the available biomass.

Estimating the amount of kelp desirable by the ROK fishery proved difficult. The quality of kelp blades is mainly dependent upon blade width and blade health, defined by the absence of holes, tears, and debris. In addition, fronds with a high proportion of desirable kelp blades are selected over other fronds. Since blade and frond quality can only be assessed by field sampling and the estimates for the proportion of desirable kelp reflects sampling from only four beds, the precision of the biomass of desirable kelp was quite low ($\pm 68\%$). More beds need to be surveyed to make more accurate estimates of desirable biomass.

Blade morphology is dependent upon wave exposure and currents (Druehl 1978, Hurd et al. 1997), so it may be possible to predict the quality of blades in kelp beds if the exposure of the bed is known. The water flow regime for any particular area depends upon many factors including the fetch, bottom topography, local land masses, and the wind regime. It may be possible to sample blades and fronds in a variety of kelp beds varying in exposure and relating the blade morphology to a derived exposure index. The health of kelp blades also seems to be indirectly dependent upon water flow. Both grazing and fouling seems to be greater in protected areas. Waves may limit the activities of herbivores (Menge and Sutherland 1976) and prevent fouling organisms from colonizing. Thus, in very protected waters, as at Port Real Marina, kelp blades may be wide but their quality may be low due to severe grazing and



fouling. At the exposed Eagle Island site, few grazers or epiphytes were observed on the sampled kelp blades.

The canopy area of kelp beds declines in winter and reaches a maximum in late summer (Harrold and Reed 1985, Foster and Schiel 1985, Dayton 1985, Watanabe and Harrold 1991). Thus, kelp canopies increase in area during the spring months. The extent of kelp canopies increased by an average of about 82% from March to April. The canopy available for harvest in March is about 55% of that available in April. Since the Sitka Sound herring typically spawn in March, the kelp available for herring ROK is much less than that available for later herring fisheries.

The estimate of bed surface area, obtained in March, is surely a conservative estimate of bed area in April. Because the March estimate was used in the calculation of total biomass in April (using April estimates of average frond density and mass) the total biomass estimate must be regarded as conservative.

Effects of Harvesting

The effects of harvesting kelp have been examined in numerous studies. Of the studies surveyed here, five were done in *M. pyrifera* beds in California (Miller and Geibel 1973, Kimura and Foster 1984, Barilotti et al. 1985, Barilotti and Zertach-Gonzalez 1990) and Chile (Santelices and Ojeda 1984), and two were done in British Columbia in *M. integrifolia* beds (Druehl and Breen 1986, Coon and Roland 1980, Coon 1982). Of these seven studies, all but one (Coon and Roland 1980, Coon 1982) suffer serious flaws in experimental design. None of the remaining six studies were replicated and each harvest treatment was represented by a single area or bed and compared to a single control area. All but one of these unreplicated studies were guilty of pseudoreplication (Hurlburt 1984) by applying inferential statistics to replicate samples within one experimental unit. The remaining study (Druehl and Breen 1986) did not use statistics in their study and differences were judged by intuition and experience. The results of these studies are frequently contradictory. For example, harvesting kelp has shown increases, decreases, or no change in kelp growth, holdfast growth, frond production, and plant survivorship. Hence, the results must be interpreted with extreme caution.

Of the studies that examined recruitment, all found that recruitment increased when kelp was harvested. The only significant effect observed in this study was a decrease in the average length of fronds in harvested areas. The lack of significant results in this study does not necessarily indicate that there was no effect of harvesting, but may be a result of low replication of treatments. Also, the experiment has only been monitored once, two months after harvest, so any long-term effects have not been determined. This experiment implemented the maximum harvest possible under current regulations, and the lack of detectable effects indicates that the more limited harvest done by the ROK industry may have little effect on kelp beds. These experiments need continued monitoring and expansion to estimate potential long-term effects of harvesting on kelp bed and associated communities.



CONCLUSIONS

This study has provided some preliminary answers to the questions of 1) how much kelp is available and desirable for harvest, and 2) what are the effects of harvesting on kelp beds and associated communities? There appears to be enough kelp available in the surveyed area to support all Sitka Sound herring purse seine permit holders harvesting ROK with the following assumptions. There were more than 225,225 tons of kelp identified in this study. There are 51 permit holders in the Sitka Sound purse seine herring fishery. If each were permitted to conduct an ROK operation and if each harvested 5 tons of kelp (hypothetical amount based upon the test fishery), then the total kelp harvested would be 255 tons. Total *Macrocystis* harvests to support other ROK fisheries in Alaska (Craig, Hoonah Sound, Prince William Sound, and Nome) were 25 tons in 1998, and as high as 44 tons in 1992. If harvests for all of these fisheries, plus the Sitka fishery, were to occur in one season, the total harvest would still be less than 300 tons. This represents about 0.1% of the biomass of *Macrocystis* in the surveyed area. If the kelp harvests are not concentrated in any one bed or area, there is a low probability of depleting the kelp resource. In addition, the effects of the most severe harvesting allowed are apparently minimal. A more complete survey should be performed to survey all of the *Macrocystis* resources in Alaska. If a good photographic system is developed, a thorough survey should be practical. In addition, kelp density should be monitored yearly on a few representative kelp beds to ascertain yearly fluctuations in kelp density. Kelp beds often have dramatic yearly changes in abundance that are related to El Nino events (Dayton et al. 1984, 1992, Dayton and Tegner 1984, Tegner and Dayton 1987, 1991).

Increasing the demand for high quality kelp may result in conflicts among users for more desirable kelp. Of the 225,225 tons of kelp surveyed only about 14% of this kelp was deemed desirable to the ROK industry. A total harvest of 300 tons would represent about 1% of the estimated amount of desirable kelp available; however, the estimate for the amount of desirable kelp is very uncertain. The low estimate of desirable kelp is about 10,000 tons, and the maximum potential harvest is 300 tons, resulting in a potential harvest of 3% of the desirable kelp. If this harvest is concentrated in a small number of areas, as it has been in the past, users may find desirable kelp hard to locate and conflicts may occur among users. The estimate for the amount of desirable kelp needs to be improved. This can be accomplished by visiting more beds to sample more blades. It appears that the width of kelp blades does not vary at a site over the season, so a kelp bed can be evaluated at any time during the spring and early summer.

We observed few lasting effects of harvesting on kelp beds. This experiment was limited in scope and duration and should be monitored, continued, and expanded in spring of 2000. The effects of harvesting the same bed every year as well as harvesting only once need to be assessed. In addition, the effect of harvesting on the kelp bed community needs to be evaluated. Given the high growth and production rates of *Macrocystis* elsewhere (Lobban 1978a, 1978b, Coon 1982, Wheeler and Druehl 1986, Jackson 1987), it is anticipated that kelp recovery from harvesting should be completed by the end of summer for harvests in March or April.

Based upon the preliminary results of this study, there was sufficient kelp in March 1999 to support the currently proposed Sitka Sound ROK fishery assuming total harvests would be in the neighborhood of several hundred tons. Conflicts between users may occur over access to high quality kelp, but these conflicts may encourage harvesters to locate currently unused high quality beds. The effects of harvesting on kelp and associated communities appears minimal or negligible, but this needs to be verified by further research.



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Open Pounds and the Traditional Subsistence Fishery

The photo below was taken during the 1998 experimental fishery. Subsistence users set their hemlock branches near the open pounds. The pounds were anchored and tied in such a way as to not impede subsistence activities from taking place. There is concern that more pounds fishing will impede the subsistence fishery but there will still be plenty of area to suit the needs of both user groups.



There are plenty of fish available to both open pounds and subsistence users. Using the 27% conversion ratio from the ADFG report, 185 tons of herring can produce around 100,000 pounds of spawn on kelp (SOK). The current amount necessary for subsistence (ANS) for the Traditional fishery is between 136,000 and 227,000 pounds. Using the same conversion for SOK and comparing to the current ANS the total amount of herring needed to meet ANS would be between 250 and 420 tons. The amount of herring required for the upper end of ANS represents less than 1% of the forecast biomass in 2015. Also, the SOK fishery would not remove additional herring from the biomass increasing opportunity for subsistence needs to be met. Put simply, there is plenty of fish and area for everyone to coexist.

Herring Spawn-on-Kelp

An Update of Market Variables Affecting Demand in Japan



Jumbo No.1 Product



Seasoned Product

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1. Executive Summary

This report provides a concise review of market and economic factors influencing the current and future demand for BC Spawn on Kelp in the Japanese market.

The world's second largest economy is undergoing 'moderate' deflation for the first time in 40 years. This was before the calamitous events of and since September 11 this year.

Key feature that will affect demand for BC Spawn on Kelp (SOK) are:

- ❖ Higher priced food products are under pressure to deliver value, quality and supply consistency
- ❖ In the face of poor economic conditions, high debt and consumer purchasing shifts, several of the major sales channel members and sectors for food products in Japan are suffering declining sales and profitability.
- ❖ Seafood consumption in Japan appears to be holding its own against dramatic increases in beef and pork sales over the past decade (at least) as Japan strives to adopt more western eating habits.
- ❖ Japan's customary gift giving seasons remain intact, but 'givers' are seeking lower priced goods and are purchasing gifts for more occasions.
- ❖ BC's SOK production remains in a market leadership position, but faces pressures to deliver more consistent quality. The US and Russia are the two countries that could significantly increase production.
- ❖ Few reprocessors of SOK in Japan dominate the 'front end' distribution
- ❖ The total supply of SOK to Japan is relatively small and must be inventoried to permit rear round supply, resulting in limited attention to market growth in consumption.
- ❖ Price of imported SOK appears to be both a function of classical supply and demand as well as the appetite of the importers (trading companies and reprocessors) to attain annual market share goals
- ❖ Very little if any BC or Canadian 'branding' is carried forward to the end user in Japan.

Opportunities and recommendations include:

- ❖ Japan is the market of choice for any increased BC production in future
- ❖ The market can absorb more product and if increases are modest over time, may result in minimal price declines, if any, and increased consumption across all sales channels
- ❖ Production of thinner SOK could offer an opportunity to increase sales due to higher perceived value; new production techniques may be required

- ❖ BC producers and primary processors need to improve quality consistency in concert with buyer requirements – work with the market players, they are BC's only customer!
- ❖ ROK is a relatively healthy convenience food and can be promoted as such
- ❖ A super premium quality product, fresh light brine or no brine ROK could be tested for a high end application, delivered by air freight, in-season
- ❖ The Japanese market is complex and tradition bound – don't try to outsmart the market; work with market 'partners' for a win-win strategy to increase sales and consumption, should the need arise
- ❖ Carrying forward BC/Canadian identification and possible producer 'branding' to the end-user should be investigated as both a defensive and offensive strategy
- ❖ The BC SOK industry stakeholders should consider maintaining its market leadership through supply and market expansion to avoid being beaten to the punch by Alaskan and/or Russian competitors
- ❖ Resources should be found to investigate other markets for BC SOK, as a defensive strategy.

2. Project Scope

The focus of this report is to provide an overview of the most important economic and demographic drivers of demand and consumption for seafood, and Spawn-on-Kelp (SOK) specifically, from the perspective of this consultant.

The report presents a compendium of market information to incorporate into a broader assessment of the SOK industry being proposed by E. Blewett & Associates in their assignment for Fisheries & Oceans Canada.

An extremely tight time frame permitted for this project limited the number of market and SOK production contacts and their feedback; therefore the results are presented on a best efforts basis.

Opportunities and constraints of increasing consumption of SOK are described and Conclusions and Recommendations are presented.

3. Current and Market Situation

❖ Japan Economic overview

Japan's economy has been in difficulty for some time and has just entered its fourth recession in 10 years. Japan is the world's second largest economy yet



has the unenviable record of currently having the highest public debt (which includes massive bad debts at the nation's banks) in the western industrialized world.

In March, 2001, the Government of Japan admitted a state of 'moderate' deflation of its economy, for the first time in the last 40 years.

Prior to September 11, 2001, the world's powerhouses of the US, Europe and Japan were struggling to lift out of a global meltdown. Since that time, all indicators are pointing negative.

Experts say that Japan's woes are deeply rooted; business and industry needs an overhaul, but they caution that now is not likely the time to tackle painful reforms, given the severity of the economic slump in Japan, as well as with its major trading partners.

Some significant economic indicators in Japan, relevant to this report, are:

- o Consumer prices and consumer spending has fallen for three consecutive years
- o Japan's retail industry is undergoing restructuring pressures: Mycal, Japan's 4th largest retailer, filed for bankruptcy protection in September, one of the largest corporate failures in Japan's history.
- o Job cut fears are softening consumption, particularly on high priced goods, causing an upswing in personal savings
- o Hopes for Japan's economic recovery, both broad and related to its consumers appetite for high priced goods, is closely linked to the condition of the US economy.
- o The consumer trend to a more Western diet is ongoing, particularly among the nations' young and those with higher disposable income. Many of the more traditional Japanese products (including food products), are declining.

❖ Sales channel trends

Due to the economic conditions outlined above, the retailing sector is exhibiting structural changes. Discount chains are strengthening their presence, while foreign retailers such as Costco and Carrefour are continuing their aggressive entry into the Japanese market and thus, are accelerating the severity of competition in the retailing sector.

Hardest hit have been the general merchandise sector, which includes supermarkets, which saw a 5.3% decline in total sales versus the previous year. Convenience stores are still flourishing but sales and operating profit appear to have peaked or are weakening.

In the foodservice sector, take-out lunchboxes and delis are becoming a driving force due to the changes in people's lifestyle and consistent with the savings minded Japanese consumer attitudes.

It is indicated in several industry reports (e.g. DFAIT Japan Fisheries Market Report, May 2001), weak economic conditions are seeing declining consumption at higher priced restaurants and sushi bars.

On a brighter note, there is an increasing trend to eating out dining at chains and independent restaurants specializing in 'revolving belt' sushi outlets (Nihon Shinbun Kyokai [NSK], October 21, 2001).

Japan's heritage of gift giving continues. It is customary to give gifts to business associates, colleagues, friends and family members. Some notable characteristics of gift giving in Japan are:

- ❖ Historically, the two key gift giving periods are summer season called "Ochugen" and a winter season called "Oseibo".
- ❖ Poor economic conditions have seen a decrease in terms of both the number of gifts given and their value, particularly during the winter season. Despite this trend, gift giving is still a large 'industry' (\$US 90 billion in 1999), with food products composing approximately 20% of this total.
- ❖ There is a trend to give more gifts more often (at other times of the year) and on more occasions.
- ❖ Typically, gifts are of higher quality and traditionally high image brand names have been important.
- ❖ Seasonal gifts are sold primarily through speciality wholesalers to upscale Department Stores, upscale Retail stores and speciality gift stores. Increasingly, the convenience store sector has started carrying a limited selection of gift items.

❖ Seafood consumption trends

Seafood consumption in Japan remains among the highest in the world and continues to rely heavily on imported products (\$US 16 billion), with Canada's share in 12th place (547 million, 3.4% of seafood imports).

Seafood imports by Japan will likely continue to increase in volume in future years due to declining domestic fishery and aquaculture supplies as well as high seas catches. The changing appetites of Japanese consumers for convenience foods and healthy eating can continue to be fulfilled by seafood products as producers, reprocessors and the retail/HRI sectors satisfy these demands through new product development and branding programs.

❖ Beef, pork and poultry trends

Consumption of beef, pork and poultry have increased dramatically in Japan during the past 10 years consistent with the changes in demographic makeup and an appetite for western foods. Time trends in food intake, indicate an increase in meat consumption of 13% compared to 3% in seafood consumption (1990-1997, Japan National Survey by Ministry of Health and Welfare)

The recent mad cow disease scare in Europe has spread to Japan. Short term impact is seeing a dramatic fall off in beef consumption. To date, no increase in seafood consumption has been noted (Bill Atkinson News Reports, Oct. 22, 2001)

❖ Roe-on-Kelp production & consumption trends

Production and Price trends:

- According to DFAIT/Ni-Ka Online, imports of herring Spawn-on-Kelp decreased substantially (by 32.6%) in terms of volume from 869 mt in 1999 to 586 mt in 2000. A sharp decline in imports from the United States from 329 mt in 1999 to 34 mt in 2000 was the major reason for this decrease in the total import. Reflecting the decrease in the quantity, the average import price for both Canadian and US products has recovered slightly from 1,876 yen per kg (C.I.F.) in 1999 to 2,118 yen per kg in 2000 for imports from Canada and from 1,357 yen per kg in 1999 to 2,160 yen per kg in 2000 for imports of the US.
- **Note:** there are some interpretation questions in these statistics that remain unresolved. For example, the US fishery statistics indicate production from both Alaska and San Francisco was 236 mt in 1999 and 87 mt. in 2000 (0 from Alaska). Comparing these figures to those above indicates possible carryovers in production within the US, or inaccurate import statistics. Similar analysis has not been tested in other years or for other countries production versus import statistics.
- Embassies and Fisheries Departments were contacted in countries that have prior SOK production (Finland, Iceland, Sweden, Norway, Atlantic Canada, S. Korea and Russia). Responses are as follows:
 - Atlantic Canada: Newfoundland had reserved a quota of 200 mt for 1999/2000, but reports no landings in recent years. More information may be forthcoming.
 - Russia: embassy staff report no knowledge of a fishery for this product, more information may be forthcoming, but statistics are poor, particularly for exports.



- S. Korea reports no knowledge of production
 - Finland, Iceland, Sweden and Norway have yet to respond
 - Note: time may provide insights to the lack of information, but it appears that export statistics of this product are not readily available, or perhaps non-existent due to small production quantities in these countries.
- A significant buyer of BC, Alaska and San Francisco SOK that I spoke to indicated no recent production from Iceland, Sweden, Norway or S. Korea. He did indicate, however, that:
- Finland produced 26 mt in 1999, 12 mt in 2000 and none reported to date in 2001.
 - Russia produced 42 mt in 2000 and none reported to date in 2001.
 - Russia has been encouraged to develop a fishery and has produced limited and intermittent quantities in recent years. Poor weather, ice, inadequate resources and training have impeded development of a fishery there, to date.
 - The San Francisco fishery is of limited herring biomass, so there is little likelihood of increase SOK production in future.
 - The area with the largest potential to increase production, outside of BC), is Alaska. Much of the herring roe fishery in Alaska is frozen in the round and exported to Japan and China for processing into brined roe for Japan. The prices received by herring roe harvesters in Alaska is significantly below what could be obtained if they transferred their quota to SOK. Alaskan fishery regulators would support this, but some of the existing herring permit holders are reluctant to support a conversion initiative, to date.

Consumption trends

- Due to poor economic conditions in Japan, the traditional sales channels for this product have been shifting from high-end Japanese restaurants, sushi bars and gift items to less expensive venues. In addition:
- Poorer quality product is being processed into less expensive retail packs for department store and grocery store consumption (including seasoned products) in greater quantity than the past.

- "Japanese trade people engaged in importing, distribution or processing hold that the development of the market in this direction will be the only way to increase (sales) prospects for this product in the Japanese market". (DFAIT Japan Fisheries Market Report, May 2001)

❖ Currency factors

BC Herring SOK is purchased in Canadian dollars. The value of the Japanese yen to the Canadian dollar during the time of purchase of SOK could influence the price paid in BC and the resulting selling prices in Japan (in Yen/kilo).

This consultant was not provided with BC selling prices to determine if this factor is 'in play' in price determination. However, analysis of the movement in the value of the dollar vs. the yen was tracked back to 1995 and average import prices of a number of seafood products in yen per kilo were examined:

- It appears that there is little, if any, relationship between the strength or weakness in the yen and the selling prices of a number of seafood products in the Japanese market (salted herring roe, Ikura, King Crab, Northern Shrimp).
- The highest prices in yen/kilo in Japan for SOK was in 1995; this was also the year in which the yen was strongest against the dollar, compared to subsequent years. This price effect may have resulted in higher prices paid to harvesters in BC.
- In Japan, other factors are believed to be of greater influence in determination of the end-user price:
 - supply and demand
 - market share goals of importers and reproprocessors
 - quality of the annual 'pack' on average
 - 'in-market' factors such as inventory levels, disposable income, reduced demand for higher priced food products and reduced expenditures on eating out at high end restaurants

❖ Roe-on-kelp purchasing dynamics

BC SOK permit holders are restricted to an 8 ton quota. Permit holders are also required to weigh their product after brining and are given a 6% overage allowance for brine uptake.

It was reported to this consultant that a 'scandalous' practice that has gained in popularity is to obtain an official weight prior to brining, then brine the product and boost the weight. This allows the 'real' quota to be exceeded. However, to maintain maximum roe quality, the product must be brined as soon after harvest as possible. The delay in brining caused by the aforementioned practice decreases quality. It was reported that this practice is generally carried out with

the knowledge of all parties. Japanese buyers have difficulty in detecting quality deterioration due to 'sampling error' at time of inspection of sample lots.

❖ Dominance of few re-processors

Few Japanese reprocessors exist for SOK. Current information indicates that Taniya continues in a dominant position (estimated at 70%) in reprocessing and supplying to all sales channels in the Japanese market.

Despite this dominance, other reprocessors vie for market position and influence the price paid to trading companies/importers in any given year. It was reported that the major historic buyer of SOK, Taniya continues to be the major force today.

❖ Channel player health

The distribution system in Japan from raw material purchase (BC SOK) to trading company to re-processor to wholesalers and major channel players has not been simplified for this product – the health of each segment makes a difference to the operation and health of the whole.

The Japanese food retail and food services sector is both in transition and under serious price and profitability stress due to the weak Japanese economy, high debt and shifting consumer purchasing behaviour. Current reports of business failures and poor financial performance are common

Change will be the 'constant' over the near future, at least. If the sales channel members responsible for sales of SOK were to experience serious financial difficulties or were to shift their product focus, further price erosion could take place.

❖ Supply size

The supply of SOK is relatively small compared to other seafood imports and food products in Japan. This low volume characteristic results in a reluctance by channel players below and including the reprocessors to spend much time and/or marketing funds on channel expansion, regional distribution expansion or internal promotion. This relationship if further aggravated, under current economic conditions, by the positioning of SOK (BC's in particular) as a high priced/luxury product.

❖ SOK Branding

There is very little if any producer/exporter brands or country of origin labelling of SOK being carried forward to the end-user in Japan. (Note: on the cover of this



report is a photo of seasoned ROK, (Cheena brand), which shows a display window in the shape of a Canadian flag. It is not known if this product is marketed in Japan – Cheena has gift shops in Vancouver, catering to Japanese tourists).

Brands are extensively used by reprocessors, importers, food distributors and retailers in Japan that form the basis of building awareness, preference and consumer promotion activities.

4. Opportunities and Recommendations

4.1. Market Expansion: Japan or beyond?

Any market expansion strategy, in this case to expand consumption/sales, would either focus on methods to expand existing market(s) or expand current or future distribution into new markets

A marketers' primary analysis of these options would focus on cost and benefit of the alternative strategies. Typically, the cost of developing a new market(s) would be far higher, complex and time consuming (years) than an existing market.

Primary reasons to look to new markets for SOK would be due to:

- o Major impediments to market expansion in current market including economic factors (e.g. negative price elasticity which would see dramatic declines in price if supply were increased)
- o Market research that indicate probable or defined interest to purchase by buyers and/or consumers in new markets (we haven't done this research beyond a few phone calls!)

It is my recommendation to focus on the Japan market, at least in the short term, to increase the market position of BC SOK or if required, to increase consumption.

Good or bad, there is a single market 'heritage' of consumption in this market aside from limited consumption of this product in other countries by Japanese expatriates and some eating establishments and gift shops catering to tourists and 'adventurous' diners.

- o Quick investigation I did of consumption in nearby Asian countries turned up nothing (e.g. sushi bars in Korea that cater to Japanese tourists/business people do not currently offer roe-on-kelp – this despite that Korea eats many different fish roe products). Further investigation might prove this market to be of some potential, who knows!

4.2. Supply and price relationship appears to be 'economically' elastic, with limits

Information from interviews suggest that an increase in supply of uniform 'high' quality SOK from BC, if in small increments, should not see a significant decrease in prices received.

Should this be achievable, the market can be grown without negative impact on prices received by BC producers.

4.3. Supply is very small in total in a large market

Despite the current price sensitivity to higher price goods in Japan, the quantity of SOK in the Japan seafood scene barely hits the radar screen.

Some observers believe that there is plenty of room for Japan market expansion of SOK across all sales channels, including the higher priced gift and upper end restaurant/sushi bar sectors.

Further, in order to present marketing and promotion opportunities for sales channel members in Japan, increased supply would be required, particularly as year round supply is essential to retaining consumer loyalty and purchase.

4.4. Retail marketing of SOK has been limited by limited supply and price

Marketing of SOK at the retail supermarkets has been limited, mainly due to price and the margin requirements of retailers. This channel has/is being used for lower priced product and seasoned product but has hardly been touched due to high historic prices and limited supply. This channel requires consistent and substantial supply to obtain shelf space and maintain 'listing's' or 'rental space' within the store.

If an economical production method could be developed to produce SOK with thinner roe coverage, it would be possible to offer less expensive product to this major consumer sales channel.

4.5. Japan's image of Canadian food products is positive

Japanese consumers have a high regard for 'western' and Canadian products, though price and quality have become increasingly important.

In order to differentiate BC SOK, a branding opportunity is presented to identify Canadian production.



4.6. BC SOK is variable in quality

Despite quality grades set by BC processors and purchased by Japanese buyers after inspection, it was reported that quality is inconsistent within the set grade standards.

More stringent quality guidelines at time of inspection and purchase in BC could be implemented to improve quality consistency and reduce reprocessor costs of misgrades and grading in general in Japan.

4.7. Health and time-conscious consumers are increasing

Japan is tracking other western industrialized consumers in paying increasing attention to healthy foods that are easy and quick to prepare (e.g. low(er) fat and salt, microwaveable, etc.)

SOK fits the bill. It is effectively ready to eat. Brined herring roe by comparison is more time consuming to prepare and has to be soaked, washed and is typically re-seasoned prior to eating.

These features could be positively promoted.

4.8. Fresh-by-air SOK – possible?

High-end restaurants in Japan pay very high prices for the freshest products. Though I'm not aware if it has been attempted, it would be feasible to transport fresh product with little of no brine added to Japan via air cargo without suffering significant quality loss.

This would only be possible during the production season and likely for a limited quantity, but this may offer an additional 'top-end' channel to operate in (e.g False Pass/Copper River Sockeye – the first of the season).

4.9. Don't try to outsmart this market

One might be tempted to look at expanding consumption and/or to increase price of SOK by leapfrogging the distribution system, jump in with BC producer branded product and market product directly to the highest priced sales channel.

Don't! Money down the drain.

It is my conviction that the best means to create a winning marketing strategy in a foreign land with a product like SOK, is to work with trusted 'partners' in Japan to co-devise the most sensible and cost effective marketing strategy. The plan



must be win-win for all parties if it is to succeed and may indeed require some adjusting on the production and fishery management side in BC as well.

4.10. Beat 'em to the punch – keep BC's market leadership

BC is the market leader of SOK in Japan.

BC has seen eroding market share of its once leading 'wild' seafood products. SOK is an interesting product as a wild resource is utilized to produce finished product attributes that can be controlled and manipulated similar to true aquaculture practices.

It was described to me that both Alaska and Russia have the potential to increase production of SOK, given adequate resources and dedication. This may be a 'soft' challenge. If BC doesn't rise to the challenge, someone else may facilitate the growth of our competitors.



ROK Marketing Questions and Answers

There have been market studies for roe on kelp (ROK) but the studies were completed over a decade ago. The market conditions surrounding herring roe products, both sac roe and ROK, have not changed much since these reports were written. In order to provide updated information a longtime broker of herring roe products was contacted. The following are questions and answers from the discussion:

How much of a market would be available for this “new” ROK product?

In 2004, there was an abundant supply of ROK coming out of BC/SE AK. I think in 2005 it was around 800 ton total supply. That volume was a real challenge for both seller and buyer. The sales prices were quite low and allowed for entry into new consumption markets. ROK became something that was accessible at pubs and such places versus something that was so expensive as to be served only at weddings and high end sushi bars.

New consumption channels arose and the 800 tons of supply did not appear so daunting as indeed the carryover inventory the following year was not as severe due to increased consumption.

The advantage ROK has over Herring Roe is that the image of ROK is not as heavily wedded to New Year’s season consumption. As well, the combination of kelp with herring roe seems to be more appealing to some consumers than herring roe by itself. I seem to notice more sushi menus offering ROK in a visible manner versus herring roe.

Also, the supply of ROK is much smaller than Herring Roe. The Herring Roe market is sometimes said to be around 10,000mt. The supply of ROK tends to be in the 300mt to 500mt range. Total supply is much less than Herring Roe and increasing the supply of ROK, in terms of overall supply, is a much smaller number and should be easier to deal with - especially if we are talking about ROK being a staple of the sushi market which is a very robust and successful market in Japan.

The sushi market utilizes the thinner coverage production. The sushi restaurant market in Japan is thriving. (4,010 sushi restaurants in 2014)

The one thing I would caution is, the market for raw materials to use as sushi toppings is relatively deep - but it is price sensitive.

To come back to your question, I think there is market space for additional ROK product but it will be price sensitive in the short term. I would think that as the popularity and demand for ROK increases, gradual price increases are possible as long as supply does not have the wild swings that we have seen in the past.

The large harvest of 2005 then reduced harvests in 2006 and 2007 whereby in those two successive years the price doubled each year but the market shrank to match the available supply.

Would the additional product produced in Sitka be a detriment or complement to the products currently produced in SE roe herring fisheries?



Anything that decreases the availability of sac roe going to the Japanese market would be positive for the market. Allocating available resources from sac roe to ROK should be a net benefit. We are currently going through a period of suffocating oversupply on the sac roe side. This year's ROK supply was also quite abundant, being at least double of the year previous and this has had a deleterious impact on pricing but as mentioned previously the overall volume of ROK is much different than herring roe and poses different and I would say less daunting challenges. Let's remember that the supply of ROK really only comes from BC and SE AK whereas herring roe comes from more sources and in greater volumes. (Let's not forget herring roe also comes from Atlantic Ocean sources)

Thus, even though we had a sudden surge in ROK production this season that was over double of last season's harvest the volume is still manageable with the market taking a longer term view on consumption such as 18 months versus 12 months. Once again, the scale of volume we are talking about is much different for ROK versus Herring Roe. (2014 estimated harvest: Herring Roe – 8,400mt / ROK – 600mt)

What is the long term outlook for sac roe and ROK products?

The long term outlook for herring roe is stable consumption with we would hope growth due to the available supply of herring roe. Recent history would suggest that we will not see explosive growth in herring roe consumption. Closed Pound ROK or Open Pound ROK will likely be viewed the same in the market and would be compared by current quality attributes which assign value.

Is it safe to assume that if the sac roe price increases then the egg on kelp market would also see a corresponding increase?

Although they are different products per se, there is a linkage between the pricing of herring roe and ROK since they are similar products. This year would have been a good test case to see what kind of price differential would be possible had the harvest of ROK been limited. But, it is generally thought that the pricing of the two products cannot be vastly different.

Will adding ROK in Sitka will not be a detriment to already existing ROK fisheries in SEAK.

The history of ROK pricing may make this difficult. Because the ROK market is small in terms of volume and buyers, the price is quite sensitive to volume when the volumes are limited. The past 10 years have seen some volume swings and foreign exchange movements that have led to a wide range of pricing for SE AK ROK. The current context of high volume and the comparative weakness in the yen will make it hard to take the position that additional ROK from Sitka will not soften the market further. (although it looks like there are resource issues in Hoonah, Ernest Sound and Tenakee which may make SE AK ROK a scarce commodity even with a Sitka ROK fishery)

The market will not be taken away. There is room for market expansion, although the near term impact may be lower pricing until the market adjusts to the increased volume.



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TO WHOM IT MAY CONCERN

Subject: Sitka Sound Roe Herring Open Pound Fishery

I have been invited to provide testimony on the subject of SOK production in Sitka Sound. I would consider it a privilege. It is my sincere hope that the views expressed here may promote healthy discussion and perhaps, lead to the adaptation of policies which will benefit all in the industry.

I have been involved with SOK for the past 20 years. During those 20 years, my company has gained valuable knowledge and experience into the workings of the SOK market. In 1999, we purchased 260 tons of SOK from California, B.C., and southeast Alaska, including Sitka.

It is my understanding that if the full potential of roe herring is utilized, Sitka may one day become the leading SOK-producing region of the world. I have heard concerns expressed that such increase in supply would disturb the delicate balance of supply-and-demand and produce a negative impact on the already fragile market, and bring hardship to the existing permit holders of SOK. These are legitimate concerns and one must not take them lightly.

However, I am of the opinion that, reducing the supply to keep the price up can work only under certain market conditions - but not now. In the present market climate, it will only mean repeating the same mistake that already has led the SOK industry to its current predicament.

To explain further, first let us examine the reasons for the current downturn in the SOK market. In my opinion, the present difficulty is in large part due to reaction to excessively high prices of the past.



To elaborate on this point, I have attached two graphs following.

The dollar values used are the mean average prices for closed pound SOK from B.C. They show a dramatic price increase that peaked in 1995, only to be followed by an equally precipitous price drop, which continued unabated to 1999. The expression, "Where the mountain is high, the valley is deep", encapsulates the essential behavior of the SOK market.

Graph 1 shows the combined supply of SOK from all the North American production areas. Here the rising prices up to 1995 seem to correspond with decreasing supply. In the same token the declining price curve from 1996 coincides with increasing supply for that period. Here, a superficial examiner of this graph may jump to a hasty conclusion that this is the evidence of increased supply driving down the prices. However, he must be cautioned not to be so hasty.

Graph 2 shows same price curves. However, it is different from Graph 1 in that it shows only the closed pound production from B.C. and southeast Alaska. Here the supply of thick product was fairly consistent through the same period of great price upheaval.

Granted, there was a sizable supply increase in 1997. However, during the years that followed the declining price curve continued despite supply reached a plateau.

It is reasonable to conclude, then, that it was not the over-supply that affected the price of SOK, but some other factors were at work.

The single most important factor that has been driving the price down, in my opinion, is the economic recession in Japan. During the bubble economy years that lasted until early 1990's, Japanese consumers displayed great appetite for luxury. Consumption of expensive foods, including SOK, rose to record levels, and as those commodities became objects of speculation, the prices soared. But as the bubble burst, realities of economic recession set in, and the consumers backed off.

Take for example the kazunoko (herring roe) market. Despite the fact that the 1999 supply of kazunoko was the lowest in twenty years at less than 10,000 tons, the year-end gift kazunoko market plummeted. Conversely, lower-priced kazunoko in the form of consumer pack fared relatively well. Total consumption appeared to have been at par with supply.



The same situation manifested itself with SOK. Movement of thick SOK (Jumbo & No.1 from B.C. and Alaska) was extremely sluggish, and the prices were down to record low levels. Thinner product, on the other hand, sold well, because prices were low enough to appeal to consumers.

These examples show that the market is constantly evolving, and that how important it is to stay in tune with the consumers' needs.

There are four main ingredients to successful marketing. They are:

- Healthy demand
- Consistent supply
- Reasonable price
- High quality

Of these, a healthy demand has to be ranked as the highest importance. If the high prices of recent years have alienated the consumers away, what the SOK industry must accomplish now is to find way to recapture the lost customers and generate new demand. Aside from making the product more appealing in terms of both price and presentation, the key is to make SOK accessible to a greater number of consumers. The task of generating demand is not a difficult as it may seem. For SOK possesses inherently superior product appeal. For instance, nine of ten people who actually tasted SOK will show a decided preference for SOK over kazunoko. This is an evidence enough that there is a huge potential for an untapped consumer market for SOK.

However, the size of the market can only be as big or small as the volume of supply. In this sense, the very limited supply that gave SOK the exclusivity in niche market is a fundamental weakness that prevent it from acquiring wide popularity. This point is clearer when one compares the supply of SOK against herring roe. In 1999, the total supply of herring roe was 10,000 tons, while SOK was just over 500 tons, barely 1/20th of kazunoko. This means that only a very few consumers had ever tasted SOK. Indeed, the majority of Japanese are even aware of its existence. The solution, then, seems to be to increase supply, while maintaining reasonable price and quality.



To this end, proposed alternative harvesting in the form on SOK in Sitka can make a significant contribution, especially if the open pound method is used. In the market where thick product by closed pounds dominates, thinner product by open pound will provide just enough diversity. It is possible that, instead of competing, producers of open pound and closed pound SOK can complement each other. By having the ability to offer rich variety of product, the SOK industry collectively will enjoy a greater chance of success in the task of opening wider market, and cultivating the greater demand in the process.

In conclusion, I believe that, if managed properly, open pound SOK fishery in Sitka Sound offers a promising alternative for better utilization of available resources. Even though critics may have legitimate reasons to worry about the over supply, benefits far outweigh the detriments. Perhaps, in consideration to existing permit holders the initial quotas should be set at a moderate level, but with mechanism to increase gradually as more demand is generated.

Thank you for the opportunity to voice my opinion. It is my sincere hope that the new management plan for SOK in Sitka Sound will be formulated with the greatest care for the future benefit of all.

Respectfully yours,

A handwritten signature in black ink, appearing to read "Ed Furumori".

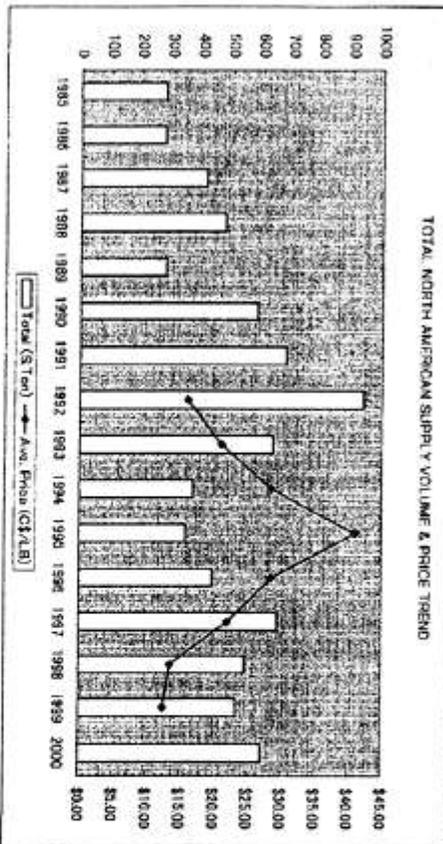
Ed Furumori



Graph 1 - TOTAL NORTH AMERICAN SUPPLY

	SF	B.C.	PWS	Hoanah	Crang	Norton	Silva	Unit	S.Ton	TOTAL
1985		208	71							279
1986		157	120							277
1987		213	200							413
1988	20	234	221							475
1989	47	235	0							282
1990	107	247	219	12						585
1991	47	311	310	13						681
1992	84	308	495	23	26					839
1993	47	302	266	14	6					638
1994	35	289	0	33	17					374
1995	13	282	0	29	25					349
1996	107	294	0	0	37					438
1997	186	347	34	65	23					655
1998	36	357	12	86	22	8				548
1999	36	360	0	65	35					517
2000	90	367	0	75	20					602

Low	Mid range	High
\$10.85	\$15.00	\$16.00
\$14.00	\$20.00	\$21.00
\$22.50	\$26.00	\$28.50
\$35.00	\$40.00	\$41.00
\$25.00	\$28.00	\$28.50
\$17.00	\$21.00	\$22.00
\$6.00	\$12.00	\$13.50
\$8.68	\$10.00	\$12.50



Elderwood Trading Co., Ltd.

9/13/2000



Kent Barkhau
123 riggs rd
Sitka AK, 99835
907-738-0234
sitkakent@gmail.com
February 3, 2015

Alaska BoF Commissioners

Dear Alaska BoF Commissioners:

I write to you to express our family's opinion on proposals before the Board very important to us. Two proposals that are particularly important to our family are proposals 175 and 176. Decisions on these two proposals could affect our future as salmon trollers and our ability earn a living by providing the highest quality salmon to the markets. Markets that recognize the high value of the troll caught fish we deliver.

Proposal 175 is an effort to reallocate fish by those whom would like to have more fish for themselves at the expense of the troll fleet. The Board of Fish's 1994 findings (94-148-FB) making allocations to gear groups is good work and needs no revisiting simply because we have yet to succeed in implementation. We should not be initiating any efforts to reallocate fish from that put forward by the BoF 94-148-FB but should focus on providing oversight and direction to the implementation of those 1994 BoF Findings. **Our family opposes Proposal 175.**

Our family supports Proposal 176 because it adds oversight to a sound management plan, a management plan that provides a framework to attain allocation goals. We hope that though this oversight hatcheries and their boards will be strongly guided and supported in making meaningful and timely progress towards these goals. This proposal will serve and protect all three gear groups. Once again, **our family supports Proposal 176.**

We also would like to express our support for proposals 188 and 226. These proposals we view as small steps toward goals set forth by the Board of Fish's 1994 findings (94-148-FB). Proposals such as these, and the time and effort needed to bring them before the BoF, as well as the time spent considering them at board meetings would be unnecessary if Proposal 176 were adopted.

We are long term residents of Alaska with a strong commitment to our State, region and community. We hope you will give consideration to our input and are grateful for the opportunity to provide it.

Sincerely,

Kent Barkhau



Submitted By
Brian Lynch
Submitted On
2/6/2015 2:09:24 PM
Affiliation
Self

Alaska Department of Fish and Game
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: SE FINFISH PROPOSALS 224 AND 228

Dear Board of Fisheries Members:

I urge you to **SUPPORT Proposal 224**, trip limits, as proposed by Alaska Trollers Association. This proposal would provide another tool the Department could use to ensure that the commercial king salmon Pacific Salmon Treaty quota (quota) and the State troll allocation can be achieved during any year when a portion of the PST quota remains but is insufficient to provide for an orderly competitive fishery that could risk exceeding the quota/troll allocation.

This provision would likely be infrequently used (possibly only during coho fishery extension years) but, when applicable would avoid the Department having to forgo allowing available harvest and significant economic value in order to avoid exceeding the king salmon allocation or the quota. An additional benefit of implementation of such a regulation would be the reduction of incidental (catch and release) mortalities associated with king salmon non-retention specifically during periods when harvestable quota/allocation still remains.

Although the Department opposes this proposal, as the former SEAK Troll Fishery Mgt. Biologist (2001-2010) I believe the reasons for opposition as presented in the Staff Comments, RC2, are excessively cautious and diminishes the Department's own excellent historical record and continuing ability to manage the king salmon harvest within Treaty quota limits.

The "Department Comments" cite the challenge in establishing a "trigger point" when a competitive fishery could not be allowed. Table 17 of *Annual Management Report for the 2013 Southeast Alaska/Yakutat Salmon Troll Fisheries* (FMR 14-10) gives the days fished, king salmon harvest, catch/day and number of vessels participating in the summer troll fishery. From this table it is apparent that any remaining allowable harvest of $\leq 5,000$ king salmon would result in considerable risk of exceeding the Treaty quota and would be a reasonable "trigger point" to consider but would also need to be evaluated on an annual basis.

The "Department Comments" also cite the uncertainty in the cumulative king salmon harvest as an impediment to establishing a trip limit. However, if the 2014 summer fishery is used as an example, there were four weeks between the end of the first and second king salmon openings to determine the second opening harvest target. In this case if four weeks was sufficient time to establish the second opening harvest rate and harvest target, then sufficient time would have been available to determine if any available harvest remained after the second summer opening (which there wasn't) and implement a trip limit. I also want to point out that there are many more fish tickets from the first summer opening and late Spring Fishery fish tickets that need to be processed prior to a second summer opening than would require processing for a trip limit fishery following the second summer opening. The Department could also take a very conservative approach in determining a trip limit by maximizing the number of potential vessels participating (i.e. the maximum number of vessels participating in the summer opening to date) and minimizing the available harvest (i.e. 80% of the Department's estimated remainder). If the Department still has concerns about accurate catch estimates, particularly in determining the FAS vessel catch, provisions of FAS reporting and landing requirements, 5AAC 29.145(b) requiring catch call-in, could be implemented for the second king salmon opening (FAS fish tickets are often the last tickets to be received).

Variable number 3, cited in "Department Comments" (king salmon catch rate) is simply unnecessary to establish a trip limit. Catch rate is unnecessary in determining a trip limit since the fishery trip limit target is determined by the available harvest and number of vessels participating. It should be irrelevant how long a troller requires to reach the trip limit, the only concern should be if they did not exceed that limit during the open fishery period.

I am also confused by Variable number 4, as to why a trip limit fishery would require a unique permit process. As pointed out above, by taking a very conservative approach in estimating available catch and vessel participation it would be unnecessary to establish the "exact" number of vessels participating to avoid exceeding the quota/allocation. Besides being an unnecessary and costly administrative burden, a permit system would also require an additional two-day fair start closure or vessel hold inspections which would also be costly and burdensome. **A permit system would not aid enforcement** since a trip limit would be the maximum number of king salmon that could be delivered and would be documented on a fish ticket regardless if sold or retained for Personal Use (5AAC 39.130(c)(10)). Anyone landing king salmon in excess of the trip limit would be subject to enforcement action. One possible "drawback", absent a two-day fair start closure or hold inspection, the News Release announcing a trip limit fishery would need to open the fishery "immediately" with no prior notice in order to avoid early illegal harvest. Although this may annoy some trollers, the fact that the trip limit would remain in effect until the closure of the summer fishery, that concern should be minimal.



In conclusion, the Department staff is perfectly capable of implementing a trip limit fishery within the current system utilizing existing data sources and I urge the Board to support this proposal.

I urge you to **OPPOSE Proposal 228**, mandatory 10-Day regional troll closure beginning August 1, as proposed by the City of Angoon. Also, please note **that The Department also opposes this proposal** because, as stated in the Department's Comments: "The department's management flexibility would be reduced." and "The proposal closure could reallocate coho salmon among user groups."

The Department very clearly lays out that sufficient numbers of coho are making it into inside waters for escapements and that it is uncertain, and unlikely that subsistence harvest would even benefit by this action. A similar proposal was submitted for the 2012 SE Alaska/Yakutat BOF meeting and, although the Department was neutral on that particular proposal, the data presented by the Department demonstrated that the length of or timing of a closure has little or nothing to do with how well inside fisheries capitalize on that closure. In fact, the data actually show that the inside commercial gillnet fisheries fare better, as far as achieving and exceeding their allocation, during years with closures of two days or less (RIR 1J12-01, RC2, p.279). This publication can be found online at

<http://www.adfg.alaska.gov/FedAidPDFs/RIR.1J.2014.11.pdf>. Using the inside drift gillnet catches as a surrogate for the Angoon area subsistence fishery, establishing a set closure length at the same time each year would realize no noticeable benefit and, as noted in the Department Comments could reallocate coho among user groups and, in turn, require reduced harvest for inside user groups (drift gillnet) in order to maintain the long term Board allocations delineated in 5AAC 29.065.

In conclusion, we simply cannot predict when coho will move to inside waters and avoid harvest by the outside troll fishery.

Thank you for the opportunity to submit my comments.

Sincerely,

Brian Lynch

Petersburg, AK



Submitted By
Clay Bezenek
Submitted On
2/6/2015 12:58:53 PM
Affiliation

Phone
907-617-4785

Email
Saltybezenek@gmail.com

Address
1617 water st
Ketchikan, Alaska 99901

I'm submitting this letter Concerning prop 209.

I am opposed to #209 as written.

#209 will create economic hardship for me, as we will see less time on the water because of it.

the fleet has NOT had ample time to discern this problem, and #209 isn't the solution.

respectfully,

Clay Bezenek



Submitted By
Eric Bezenek
Submitted On
2/6/2015 1:17:46 PM
Affiliation
SE Gillnet permit holder

Phone
425-457-4845
Email
ebezenek@gmail.com
Address
1617 Water St.
Ketchikan, Alaska 99901

My name is Eric Bezenek, and I apposeProp # 209 as written.

Our fishery works fine as is, and no modifications are needed.

Respectfully,

Eric Bezenek



RE: Proposal 227

Dear Chairman Johnstone and Board of Fish Members,

My name is John Dimond and I am writing this letter to convey my concerns about the potentially high volume of juvenile Chinook salmon (*Oncorhynchus tshawytscha*) being caught in the Homeshore area during the later months of June. I currently have graduated University of Alaska Fairbanks with a B.S. in Fisheries, have worked in the commercial fishing industry since I was a kid, and am hoping to pursue a career in the department of fish and game here in Alaska. Having taken part in the fishery on and off over the past four years I have seen how many juvenile Chinook salmon have been caught (and the high mortality associated with their catch) and am writing this letter to raise awareness about the issue.

The chum troll fishery that takes place in the Homeshore area is a relatively new fishery that has only recently become a management consideration. The first records for this fishery by the department of Fish and Game were in 2010. The overall effort exerted in this fishery is quite high (up to and exceeding 100 boats/day in odd years) and given the novelty of the fishery, little is known about the potential impacts it may be having on these juvenile Chinook salmon that are being caught as by catch. During my personal experience in this fishery I observed a varying degree of by catch, anywhere from 0 to upwards of 8-9 juveniles being caught on any given day. For the sake of conservative assumption, an average of 2-3 fish a day, with an average of 88 boats per week fishing over the 6 week season in 2013 (Annual area management report for summer troll fishery in southeast Alaska in 2013), that would give a range of 7,392-11,088 juvenile king salmon being caught in a year of high fishing intensity.

To give this number some context, the initial summer treaty quota for Chinook salmon harvest in 2013 was 87,111 Chinook salmon. Given the novelty of this fishery, nothing is known about the origin of these fish, or potential impacts their harvest may be having on surrounding areas' Chinook salmon runs. In 2012, the escapement estimate for Chinook salmon on the Taku River was only 19,539 Chinook salmon, and on the Chilkat river escapement estimates have only ranged from 2600-5900 over the past 10 years.

Given the extreme importance of Chinook salmon management in Southeast Alaska, the high fishing pressure that is exhibited in this fishery, and its novelty, I would recommend efforts be taken to better understand their origin as well as gain a better understanding of exactly how many fish are being caught and the mortality rate they incur.

I thank you for your time and concern in this matter and hope to raise awareness about this issue.

Best Regards,

-John Dimond



Submitted By
Eric Jordan
Submitted On
2/6/2015 2:33:23 PM
Affiliation
F/V I Gotta

Phone
9077476743
Email
ericsarahjordan@gmail.com
Address
103 Gibson Place
Sitka, Alaska 99835

ATTN: BOF COMMENTS
2015

Boards Support Section

February 6,

Alaska Department of Fish and Game

PO Box 115526

Juneau, AK 99811-5526

Fax: 907-465-6094

Dear BOF and Boards Support,

I am writing to support BOF proposals #176 and #226 on pages 119, 120, and 150, of the 2014/2015 BOF proposed regulation changes book. I support these proposals because I am a lifelong SE Alaska salmon troller and chums are an important part of my business.

The following comments are solely my own.

#226 I have read the staff comments on proposal #226 and have discussed them with Grant Hagerman and Patti Skannes, troll management biologists. I have been involved with both the development and regulatory language for the Districts 12 and 14 Enhanced Chum Salmon Troll Fisheries Management Plan since its inception. I spent two weeks in Ketchikan in 2012 negotiating with fishermen groups, BOF members, and ADF&G staff on the language of 5 AAC 29.114. This plan is a great success story of successful fishermen, BOF, and ADF&G collaboration. The changes I have suggested are minimal but important.

(a)The purpose of the management plan in this section is to give the department direction for the **MANAGEMENT** [ORDERLY DEVELOPMENT] of enhanced chum salmon troll fisheries during the directed troll fisheries in Cross Sound, Icy Strait, and Northern Chatham Strait, while providing for the conservation of wild stocks.

This fishery has been developed and management is a more appropriate term. I think the staff is comfortable with this change based on my conversations with them.

(c)Notwithstanding the provisions of 5 AAC 29.090, the spring troll fisheries in District 14 will be managed to minimize the harvest of wild chum salmon and may be closed **to the retention of chum salmon** by emergency order based on wild chum salmon abundance.

This is a crucial change in my opinion. Without this addition we could face an unlikely situation where the whole troll fishery in 12 and 14 could be closed to conserve wild chum salmon. The troll fishery on enhanced chum salmon comes after a long pre-existing Alaska Chinook hatchery access fishery in Districts 12 and 14 with very little chum by-catch. It was never the intention of chum trollers that closure of the chum troll fishery could close the Alaska Hatchery Chinook fishery. In fact, the purpose of proposing this plan was to recognize and manage the emerging chum troll fishery independently of the existing Alaska Hatchery Chinook troll fishery.

I have read the staff comments and discussed it with them. I am hopeful their position will evolve before the BOF meeting. The two fisheries, while both troll fisheries, are distinct fisheries in everything from gear, speed, lures, areas where the fleets work, whether the fish are dressed or not, and unloading services. Very few chums are encountered while targeting Chinook and very few Chinook are encountered while targeting chums. It would be an injustice if this amendment is not adopted; and, in the unlikely event the chum troll fishery was closed, ADF&G was mandated to close Alaska Hatchery Chinook opportunity also.

[(E) THE PROVISIONS OF THIS SECTION DO NOT APPLY AFTER DECEMBER 31, 2014.]



PC 60
2012

Section E needs to be either omitted or amended to some future date. I suggest eliminating it. If further amendments to this plan need to be made in the future I am confident the department or fishing groups will propose them. If not, having to reset the sunset date implies a temporary fishery and obligates the BOF to take action again on this successful plan.

*#176 This proposal addresses the long term problem where the troll fleet is about 10% below its allocated value of SE enhanced salmon harvest value. The shortage amounts to millions of dollars a year and tens of millions over the last 20 years. I support the concept of this idea but not all the specific details. My position is simple: **The BOF needs to direct the Northern SE Regional Planning team to present a plan for trollers to be within their allocated range as soon as possible.** I believe it undermines BOF policies, plans, and regulations when they are not enforced, particularly over a long period of time.*

I am one of the founders of NSRAA and its second employee. I was hired to lead the successful campaign in 1977 to convince northern SE salmon fishermen to vote to tax themselves 3% to pay for investments in salmon enhancement. When we were organizing NSRAA one of the biggest worries of fishermen was that they would be paying 3% tax and not getting their share of the enhanced fish. I understand trollers pay about an average of 27% of the enhancement tax in SE each year and get 17-20% of the enhanced salmon value.

I have served three terms on the NSRAA Board over the years, in 1979 -80 as a hand troller, and since 2010 as a power troll rep. It has been extremely frustrating to me that NSRAA is unable to find a way to improve the troll harvest value while NSRAA has done an amazing job of working collaboratively to provide trollers their allocated share of NSRAA enhanced salmon value.

*Bottom Line: **The BOF needs to direct northern SE salmon fishermen, the hatchery managers, and the RPT to develop a plan to rectify this inequity ASAP.***

Thankyou for serving on the BOF and considering my comments.

Sincerely,

Eric Jordan

FV I Gotta

103 Gibson Place

Sitka, AK 99835

(907) 738-2486



To whom it may concern

Hello my name is Steve Vlahovich. I have fished in the District 1 gillnet fishery for the past 33 years. I oppose proposal 209. Proposal 209 will directly impact the SE Alaska gillnet fishery as we know it today.

This proposal will directly impact the natural production of native salmon in SE Alaska. It will also have a direct impact on Trans Boundary Rivers which are protected under the U.S. Canada treaty. These rivers include the Taku in Juneau the Stikine in Wrangle along with the Nass and Skeena rivers in British Columbia.

Proposal 209 will also directly undermine the Alaska Department of Fish and Game and their current management practices which in my opinion are working better now than when I started in this fishery.

The fishery as we know it today is not broken. Please do not consider 209.

Regards Steve Vlahovich

Owner/Operator

F/V Colleen A



United States Department of the Interior

NATIONAL PARK SERVICE

Alaska Region
240 West 5th Avenue, Room 114
Anchorage, Alaska 99501

IN REPLY REFER TO:

1.A.2 (AKRO-RNR)

Mr. Karl Johnstone, Chairman
ATTN: Alaska Board of Fisheries Comments
Alaska Department of Fish and Game
P.O. Box 115526
Juneau, Alaska 99811-5526

Dear Chairman Johnstone:

A few proposals before the Board of Fisheries (BOF) for the February 23 to March 3, 2015 meeting in Sitka may affect or have the potential to affect finfish resources in National Park System lands and waters in Southeast Alaska. The National Park Service (NPS) is the managing agency for Wrangell-Saint Elias National Park and Preserve, Glacier Bay National Park and Preserve, Klondike Gold Rush National Historical Park, and Sitka National Historical Park, which are all wholly or partly within the Southeast and Yakutat management areas. We share with you the desire to implement sound management strategies for the fishery resources in these management areas.

Attached are the NPS comments on proposals #89, #155, #161, #162, and #216, which may potentially affect finfish resources within the Yakutat and Dry Bay areas within Wrangell-Saint Elias National Park and Preserve and Glacier Bay National Park and Preserve. We would appreciate your review and consideration of our comments. If you have any questions about these comments, please contact Bud Rice, Management Biologist, (907) 644-3597.

Sincerely,

Debora Cooper
Associate Regional Director

Enclosure



cc:

Sam Cotten, Acting Commissioner, ADF&G
Pat Pourchot, Special Assistant to the Secretary for Alaska
Tim Towarak, Chair, Federal Subsistence Board
Glen Haight, Executive Director, Board of Fish and Game
Jeff Regnart, Director, Commercial Fisheries Division, ADF&G
Charles Swanton, Director, Division of Sport Fish, ADF&G
Hazel Nelson, Director, Division of Subsistence, ADF&G
Rick Obernesser, Superintendent, Wrangell-Saint Elias National Park and Preserve
Philip Hooge, Superintendent, Glacier Bay National Park and Preserve
Guy Adema, Natural Resources Program Manager, NPS
Mary McBurney, Subsistence Program Manager, NPS
George Pappas, Fisheries Division Chief for the Office of Subsistence Management
Bud Rice, Management Biologist, NPS
Joel Hard, Deputy Regional Director, NPS
Bert Frost, Regional Director, NPS



**NATIONAL PARK SERVICE (NPS) COMMENTS ON
ALASKA BOARD OF FISHERIES PROPOSALS
for the
SOUTHEAST ALASKA AND YAKUTAT MANAGEMENT AREAS**

**State of Alaska
Board of Fisheries Meeting
February 23 to March 3, 2015
Sitka, Alaska**

PROPOSAL 89 - 5 AAC 34.107. Description of golden king crab fishing areas within Registration Area A; and 5 AAC 34.115. Guideline harvest ranges for Registration Area A. Create new commercial golden king crab fishery area in Cross Sound, as follows:
Add 5 AAC 34.107(h) Cross Sound Area: all waters of Area A west of District 14 and north of the latitude of Imperial Pass.

Brown (golden) crab are found outside existing fishing areas. A new area west of the Icy Straits area would allow opportunity to harvest those crab and learn more about their abundance and distribution.

Existing State Regulation:

5 AAC 34.107 (b). Description of golden king crab fishing areas within Registration Area A. These regulations currently state that commercial golden king crab fishing is authorized in all waters of District 14 in Icy Straits. District 16 is not currently listed.

Existing Federal Regulations:

A new or expanded fishery is prohibited by 36 CFR Part 13.1130 (c). A golden king crab pot fishery has occurred in Glacier Bay National Park. However, the expansion of this fishery into the outer coast park waters within District 16 would, in the view of the park, constitute an expanded fishery.

Is a similar issue being address by the Federal Subsistence Board (FSB)? No.

Impact to NPS-qualified subsistence users/fisheries: None.

Federal Subsistence Board regulations generally do not apply on State marine waters, and no federally-authorized subsistence fishing is authorized in Glacier Bay National Park.



NPS position/recommended action: The NPS requests that park waters in district 16 be excluded from this proposal if enacted.

The NPS opposes this proposal for outer coast park waters because this would constitute an expansion of the fishery which is prohibited by 36 CFR Part 13.1130 (c). Allowing this fishery without modification would result in a conflict with established federal regulation and court cases regarding jurisdiction of the marine waters of Glacier Bay National Park.

Proposal 155 – 5 AAC 47.030. Methods, means, and general provisions – Finfish. This proposal would allow party fishing in Southeast Alaska saltwater fisheries as follows:

When two or more persons, who are licensed or otherwise authorized to sport fish in the salt waters of Southeast Alaska, are angling for finfish aboard a vessel in these waters, fishing by all authorized persons aboard may continue until combined limits of finfish are taken and possessed aboard the vessel. The reason for this proposal is to allow friends and families who are fishing from a boat to continue fishing until the combined limits for all persons on board has been reached. Children would be able to catch fish for their parents. Guests would be able to catch fish under the limits of other licensed persons on board. States of Washington and California have regulations allowing ocean boat limits.

Existing State Regulation:

5 AAC 47.030. Methods, means, and general provisions – Finfish. These regulations do not speak to this option directly, except they state in subsection (b) Sport fishing may be conducted only by the use of a single line per angler, and not more than six lines may be fished from a vessel. Therefore, it appears other anglers cannot fish for a licensed angler with additional lines.

5 AAC 75.995. Definitions:

(4) "bag limit" means the maximum legal take of fish per person per day, in the area in which the person is fishing, even though part or all of the fish are immediately preserved; a fish when landed and not immediately released becomes a part of the bag limit of the person originally hooking it;

Existing Federal Regulations:

In 50 CFR Part 300.65 NOAA marine halibut fishery limits are currently set for charter anglers at one halibut per angler not including Guided Angler Fish in Southeast Alaska (Area 2C, which includes Glacier Bay proper), and no fish between the length of 44 inches and 76 inches can be retained. In Area 3A, outside waters from Cape Spencer across Southcentral Alaska, no more than 2 halibut can be retained by each charter angler with one fish of any size and the second fish must be less than 29 inches in length. Unguided anglers in both Area 2C and 3A can retain up to 2 halibut of any size per day. If boat limits were authorized in state regulation but not in federal regulation, this regulatory inconsistency would likely cause confusion among anglers targeting federal and state managed fisheries.



Proposal 155 could potentially also increase the area total harvest and exceed current sport harvest projections for those fisheries where harvest projections are currently based on individual bag limits.

Is a similar issue being address by the Federal Subsistence Board (FSB)? No.

Impact to NPS-qualified subsistence users/fisheries: None.

Federal Subsistence Board regulations generally do not apply on State marine waters, and no federally-authorized subsistence fishing is authorized in Glacier Bay National Park.

NPS position/recommended action: **Oppose.**

The NPS opposes this proposal because it is likely to cause confusion and inconsistency with the NOAA federal regulations regarding individual angler based halibut bag limits in Glacier Bay National Park. This proposal fails to address legal responsibility for an over limit situation if individual anglers are unwilling to accept and retain fish caught by others.

Proposal 161 – 5 AAC 47.023. Special provisions for season, bag, possession, annual, and size limits, and methods and means for the fresh waters of the Southeast Alaska Area. This proposal would prohibit multiple hooks in all fresh waters in the Yakutat Management Area as follows:

Allow for single hook only sport fishing in all fresh waters of the Yakutat area, Cape Fairweather to Cape Suckling, from January 1 to December 31. The reason for this proposal is to reduce incidental mortality of fish.

Existing State Regulation:

5 AAC 47.023. Special provisions for seasons, bag, possession, annual, and size limits, and methods and means for the fresh waters of the Southeast Alaska Area

(a) Unless otherwise specified through an emergency order issued under AS 16.05.060 , the special provisions in this section apply to the fresh waters listed. The special provisions are exceptions to the general provisions specified in 5 AAC 47.022 and 5 AAC 47.030, and modify the general provisions only to the extent specified in this section.

(b) In the freshwater drainages in the Yakutat vicinity that are crossed by the Yakutat road system and all streams draining into Yakutat Bay between Ocean Cape and Point Latouche:

(1) except as provided in (5) of this subsection,

(A) only unbaited, artificial lures may be used;

(6) in the Situk River drainage,



(E) only single hooks may be used;

5 AAC 47.030. Methods, means, and general provisions - Finfish

(a) Unless otherwise provided in 5 AAC 47.021, 5 AAC 47.023, 5 AAC 47.055, or by emergency order issued under AS 16.05.060 , the provisions in this section apply to finfish sport fishing in the Southeast Alaska Area.

(i) Only unbaited, artificial lures may be used in fresh water from November 16 - September 14.

Existing Federal Regulations:

50 CFR §100.27(e)(13) Southeastern Alaska Area. The Southeastern Alaska Area includes all waters between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance.

(iv) In areas where use of rod and reel is allowed, you may use artificial fly, lure, or bait when fishing with rod and reel, unless restricted by Federal permit. If you use bait, you must retain all Federally-regulated fish species caught, and they apply to your applicable daily, seasonal, and annual harvest limits for that species.

50 CFR §100.14 Relationship to State procedures and regulations.

(a) State fish and game regulations apply to public lands and such laws are hereby adopted and made a part of the regulations in this part to the extent they are not inconsistent with, or superseded by, the regulations in this part.

Is a similar issue being addressed by the Federal Subsistence Board? Yes. The intent of both of these proposals will be addressed by the Federal Subsistence Board through Fisheries Proposal FP15-01 at their January 2015 meeting. Proposal FP15-01 proposes establishing the definition of a hook in statewide Federal subsistence regulations. Creating a definition for a hook to include multiple points (proposals 161 and 162) with or without a barb (proposal 162) in Federal regulation would allow Federally-qualified subsistence users to continue to use multiple barbed hooks in Federal subsistence fisheries where rod and reel are a legal methods and means to harvest fish if State managed fisheries are restricted to use of a single or single barbless hook. Adoption of FP15-01 would permanently address situations where Federally-qualified subsistence users are restricted to State fisheries regulations by default regarding the use of multiple barbed hooks.

Impact to Federal subsistence users/fisheries: Yes. Southeast Alaska and Yakutat areas Federal subsistence fisheries methods and means regulations are the same for taking of fish under State of Alaska sport fishing regulations (5 AAC 47), unless specifically modified in Federal regulation. Current Federal regulation authorizes Federal subsistence users to use rod and reel as a legal method and means as well as allows the use of flies, lures, and bait in these fisheries. At the time of the publication of this document, Federal regulations do not address the number of points a hook may have or restrictions on the use of barbed hooks. Adoption of either



proposal 161 or 162 could, by default, restrict the few Federal subsistence fishermen fishing in the Dry Bay Preserve portion of Glacier Bay National Park and Preserve and southerly parts of Wrangell-Saint Elias National Park and Preserve with a rod and reel to some combination of single or barbless single hooks.

Single and barbless single hooks are used to minimize injury to fish in catch-and-release sport fisheries, and are not as effective as barbed multiple hooks in retaining fish for harvest. In general, the requirements for single or single barbless hooks have been used to reduce angler efficiency and mortality of targeted or incidentally hooked fish. Requiring the use of single or single barbless hooks by Federally-qualified subsistence users would reduce their ability to efficiently harvest fish.

NPS position/recommended action: **Support.**

The NPS supports this proposal because it would improve conservation of fishery resources, and adoption of FP15-01 would provide for multiple and barbed hooks for Federally-qualified subsistence fishermen to more efficiently catch and retain fish.

Proposal 162 – 5 AAC 47.023. Special provisions for season, bag, possession, annual, and size limits, and methods and means for the fresh waters of the Southeast Alaska Area. This proposal would prohibit multiple hooks and barbed hooks in all fresh waters of the Yakutat Management Area as follows:

Restrict sport fishing in all fresh waters of the Yakutat area; Cape Fairweather to Cape Suckling, to single barbless hook only, with the exception of two single barbless hooks may be used in tandem when bait is allowed. The reason for this proposal is conservation. A similar proposal was adopted for sport fishing on the popular Situk River, which met with favorable results and no complaints from sport fishermen. This proposal would extend this rule to all other fresh water areas in the Yakutat Management Area to reduce incidental mortality of fish.

Existing State Regulation:

5 AAC 47.023. Special provisions for seasons, bag, possession, annual, and size limits, and methods and means for the fresh waters of the Southeast Alaska Area

(a) Unless otherwise specified through an emergency order issued under AS 16.05.060, the special provisions in this section apply to the fresh waters listed. The special provisions are exceptions to the general provisions specified in 5 AAC 47.022 and 5 AAC 47.030, and modify the general provisions only to the extent specified in this section.

(b) In the freshwater drainages in the Yakutat vicinity that are crossed by the Yakutat road system and all streams draining into Yakutat Bay between Ocean Cape and Point Latouche:

(1) except as provided in (5) of this subsection,



(A) only unbaited, artificial lures may be used;

(6) in the Situk River drainage,

(E) only single hooks may be used;

5 AAC 47.030. Methods, means, and general provisions - Finfish

(a) Unless otherwise provided in 5 AAC 47.021, 5 AAC 47.023, 5 AAC 47.055, or by emergency order issued under AS 16.05.060, the provisions in this section apply to finfish sport fishing in the Southeast Alaska Area.

(i) Only unbaited, artificial lures may be used in fresh water from November 16 - September 14.

Existing Federal Regulations:

50 CFR §100.27(e)(13) Southeastern Alaska Area. The Southeastern Alaska Area includes all waters between a line projecting southwest from the westernmost tip of Cape Fairweather and Dixon Entrance.

(iv) In areas where use of rod and reel is allowed, you may use artificial fly, lure, or bait when fishing with rod and reel, unless restricted by Federal permit. If you use bait, you must retain all Federally-regulated fish species caught, and they apply to your applicable daily, seasonal, and annual harvest limits for that species.

50 CFR §100.14 Relationship to State procedures and regulations.

(a) State fish and game regulations apply to public lands and such laws are hereby adopted and made a part of the regulations in this part to the extent they are not inconsistent with, or superseded by, the regulations in this part.

Is a similar issue being addressed by the Federal Subsistence Board? Yes. The intent of both of these proposals will be addressed by the Federal Subsistence Board through Fisheries Proposal FP15-01 at their January 2015 meeting. Proposal FP15-01 proposes establishing the definition of a hook in statewide Federal subsistence regulations. Creating a definition for a hook to include multiple points (proposals 161 and 162) with or without a barb (proposal 162) in Federal regulation would allow Federally-qualified subsistence users to continue to use multiple barbed hooks in Federal subsistence fisheries where rod and reel are a legal methods and means to harvest fish if State managed fisheries are restricted to use of a single or single barbless hook. Adoption of FP15-01 would permanently address situations where Federally-qualified subsistence users are restricted to State fisheries regulations by default regarding the use of multiple barbed hooks.

Impact to Federal subsistence users/fisheries: Yes. Southeast Alaska and Yakutat areas Federal subsistence fisheries methods and means regulations are the same for taking of fish under State of Alaska sport fishing regulations (5 AAC 47), unless specifically modified in Federal regulation. Current Federal regulation authorizes Federal subsistence users to use rod



and reel as a legal method and means as well as allows the use of flies, lures, and bait in these fisheries. At the time of the publication of this document, Federal regulations do not address the number of points a hook may have or restrictions on the use of barbed hooks. Adoption of either proposal 161 or 162 could, by default, restrict the few Federal subsistence fishermen fishing with a rod and reel in to some combination of use of single or barbless single hooks.

Single and barbless single hooks are used to minimize injury to fish in catch-and-release sport fisheries, and are not as effective as barbed multiple hooks in retaining fish for harvest. In general, the requirements for single or single barbless hooks have been used to reduce angler efficiency and mortality of targeted or incidentally hooked fish. Requiring the use of single or single barbless hooks by Federally-qualified subsistence users would reduce their ability to efficiently harvest fish.

NPS position/recommended action: **Support.**

The NPS supports this proposal because it would improve conservation of fishery resources by reducing incidental mortality of returning spawning fish, and adoption of FP15-01 would provide for multiple and barbed hooks for Federally-qualified subsistence fishermen to more efficiently catch and retain fish.

Proposal 216 – 5 AAC 30.331. Gillnet specifications and operations. This proposal would clarify gillnet specifications in the East River in September as follows:

5 AAC 30.331(a)(1)(F) is amended to read:

(a) Set gillnets with mesh size smaller than eight inches.....:

(1) in the Yakutat District

(F) East River, one net not to exceed 20 fathoms, except starting in the first **Sunday** [MONDAY] in September, two nets not to exceed 20 fathoms each and an aggregate length not to exceed 40 fathoms;

At the 2003 Southeast Alaska Board of Fisheries meeting, the opening day for all fishing periods in the Yakutat Area was changed from Monday to Sunday in 5 AAC 30.320. *Fishing periods*. At that time, 5 AAC 30.331. *Gillnet specifications and operations* (a)(1)(F) was not changed to reflect the new opening day. As a result, the department must issue an emergency order each year effecting an allowable gear change for East River from Monday to Sunday for the first fishing period in September. This proposal corrects that oversight.

Is a similar issue being address by the Federal Subsistence Board (FSB)? No.

Impact to NPS-qualified subsistence users/fisheries: No.

NPS position/recommended action: **Support.**



The NPS supports this proposal because it would correct an inconsistency in state regulations, reduce confusion and improve compliance among area fishermen, and reduce law enforcement compliance checks where the NPS assimilates state law and regulation.



Alaska Longline FISHERMEN'S ASSOCIATION

Post Office Box 1229 / Sitka, Alaska 99835 907.747.3400 / FAX 907.747.3462

Alaska Department of Fish and Game
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

February 6, 2015

Dear Members of the Board,

I am submitting these comments on the Southeast Alaska groundfish proposals to be considered at your February/March 2015 meeting in Sitka. These comments are submitted on behalf of the Alaska Longline Fishermen's Association (ALFA), which is a non-profit association of over 100 vessel owners and deckhands committed to sustainable fisheries, healthy marine ecosystems and strong coastal fishing communities.

Proposal 131-134 Permitting pots in the Southeast sablefish fisheries: ALFA does NOT support any of these proposals. Most locally-based longline boats do not have the capacity to carry groundfish pots safely, nor could most vessel owners afford to reconfigure their boats to carry groundfish pots. Experience with pot gear in the Southeast area during the early 1980s established that pots and longlines could not co-exist in this area without significant gear conflicts, gear loss and resource waste. Southeast has a narrow shelf/slope and strong currents; the first concentrates fishing effort spatially and the second causes gear set at sablefish depths (250-500 fathoms) to drift considerably before settling to the bottom. Longlines fished near each other have comparable drift, but even when two longline do become entangled they can be retrieved when hauled carefully. The same is not true of a longline tangled with a groundfish pot. The hydraulics on the Southeast longline boats cannot lift groundfish pots, nor can the groundline used by longliners withstand the strain. In a conflict between longline and pot gear, longline gear will be lost every time, along with the fish caught on the longline. These conflicts would be compounded in Chatham, where fishing grounds are limited and the currents are particularly strong.

Both Northern and Southern Southeast Inside areas have been successfully harvested by longline gear for decades. Although sperm whales have occasionally occurred in these waters, communication between permit holders and whale researchers has facilitated avoidance. In short, these proposals do not address an existing problem; instead the introduction of pot gear promises to create a host of resource issues and problems.



Proposals 136-137: Establish reasonable limits for personal use sablefish harvest in State waters- ALFA SUPPORTS these proposals. The Board of Fisheries generally sets limits on personal use fisheries at an amount typical of family use. No limit on personal use has been established for the State water sablefish fisheries. At present, personal use fishermen can set miles of longline gear and retain all sablefish harvest, an opportunity that was not widely recognized until recently. The reported amount of personal use/subsistence catch doubled from 2012 to 2013, and can be expected to continue to increase rapidly unless some reasonable limits are implemented. ALFA supports establishing an annual personal use limit of 50 fish, and limiting the number of permits that can be fished from one vessel to four. We also support limiting personal use longline gear to 350 hooks, as suggested in Proposal 137. A limit on catch and gear should minimize unwanted bycatch and handling of sablefish above a harvester's personal use needs while still providing ample harvesting opportunity to meet those needs.

As the Board may be aware, the NSEI and SSEI sablefish fisheries are fully prosecuted and rigorously managed under an equal share system. Despite this careful management, the total quotas have been consistent reduced over the past decade. The NSEI Equal Share Quota has been reduced from approximately 5 million pounds to 1 million pounds in response to a decreased forecast for exploitable biomass and survey catch per unit effort declines. Although the stock is not overfished, current stock indices demand conservative management. Establishing a reasonable limit on personal use harvest is consistent with Board policy in other fisheries and consistent with the department's conservative management of the commercial fishery.

Thank you for the opportunity to comment. We look forward to hosting the Board in Sitka and will be in attendance to provide additional comment at your February/March meetings.

Sincerely,

Linda Behnken
(Executive Director, ALFA)



Submitted By
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Submitted On
2/7/2015 10:17:26 AM
Affiliation
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Proposal 136 and 137: Support

These proposals attempt to set guidelines for personal use harvest of blackcod, which would provide ample personal use needs while at the same time prevent excess harvest causing unwanted bycatch and handling of blackcod.

Fifty fish equals about 250 pounds of dressed sablefish, or a generous 750 servings of fish. This seems more than adequate for a person's personal use needs with a little extra to give to friends.

350 hooks is equal to 2 skate of commercial gear, the average amount of gear needed to catch at least 50 fish at one time.

At this time there is no limit on harvest or gear so a person could set unlimited amounts of commercial type gear and catch thousands of pounds of fish. These proposals would prevent this excess harvest while allowing a generous personal use harvest.

Dick Curran

Sitka, AK



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2/7/2015 9:12:15 AM
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Proposal 131: Do Not Support

This proposal would allow pot fishing in Chatham Strait. The Chatham fishery is efficient and well run at this time. There is no reason for a "fix". I caught my quota there in 2014 in 12 hours - it doesn't get any easier than that.

Allowing pots in Chatham would increase gear conflicts and gear loss. The terrain is steep and the currents strong. Logline gear tangled with lost pots usually breaks off, the area becomes a gear graveyard.

Strong currents in Chatham would easily drag the larger buoys required for heavy pot lines below the surface much of the time. This makes it more difficult to identify pot locations, increasing gear conflict and loss - this has happened with brown crab pots there.

One reason given for allowing pots in Chatham is whale depredation. I have been fishing in Chatham since 1985. I saw one sperm whale in Chatham 3 years ago and lost 5 or 6 fish to the whale. I don't consider whales a problem yet in Chatham and we are members of SEASWAP and the whale sighting network which allows us to avoid whale conflicts. Others could join the network.

I believe the Chatham blackcod fishery is working fine as is. Allowing pots would be a detriment to a well run fishery.

Thank you for the opportunity to comment.

Dick Curran

Sitka, Alaska



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2/7/2015 9:32:57 AM
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Proposal 159: Support

I support reasonable annual limits for nonresidents sport fishing for all marine species (salmon, halibut, groundfish, shellfish). Visitors to Alaska should be able to have a nice experience, take some fish home, but have reasonable bag limits. This will help provide resources for Alaskans and also for visitors into the future. Every state they come from has bag limits on their sport fisheries. No need to wait for a crisis, by species, to enact reasonable limits, let's plan for the future.

I suggest a tag on all non resident sport fish to help manage and track catches but also provide revenue for sport fish management, in this time of dwindling government revenues.

Thank you for the opportunity to comment

Dick Curran

Sitka, Alaska



Submitted By
Al Wilson
Submitted On
2/8/2015 3:35:27 PM
Affiliation

~~As lifetime resident of Alaska since 1935 and as a stakeholder in the health of our marine environment, I am commenting on several proposals that directly impact the subsistence lifestyle my family and I enjoy. I feel strongly on these issues below and ask that you take my comments to heart as someone who has seen and lived a lifetime in the areas in question.

Proposals 114 and 115—I support this region-wide proposal to require herring stocks to be above their minimum stock biomass for five consecutive years before a sac-roe fishery (seine or gillnet) can occur. Removing fishing pressure for an extended period of time will allow these stocks a greater opportunity to build back to historic levels and ensure sustainable biomass. The closures of all sac-roe fisheries except Sitka Sound this year shows that depleted stocks need more time to recover.

Proposal 116 – I do not support this proposal that would require a fishery if minimum biomass threshold is reached. A F&G needs to have the flexibility to make decisions based on science and recognition that there are unknown factors that contribute to the health of the herring biomass – such as the largest unknown this year “where are the 3 year olds?” It is likely the model they use for biomass determination is flawed in some areas that support the need for caution and the ability of A F&G to have the leeway to make the conservative decision.

Proposals 117—I do not support this proposal which would reduce the Amount Necessary for Subsistence (ANS). The results of A F&G division of Subsistence herring harvester survey shows that the ANS is achievable, and that there is a high frequency of needs not being met. The proposer has not produced a peer recognized scientific paper that backs up their statements and conclusions. In addition, there has been consistent effort by the Sitka Tribe in conjunction with A F&G to document ANS harvest as accurately as possible.

Proposals 119 and 120—I do not support this proposal to close the subsistence only area in Sitka Sound. This proposal would remove existing protections that make it possible for subsistence harvesters to meet their needs and protects a traditional spawning area.

Proposal 121—I support this proposal to increase the size of the subsistence only zone in Sitka. Although the closure has helped subsistence harvesters to meet some of their needs, even more importantly, it gives the herring a protected area to spawn where the commercial fleet cannot go in and disturb them, then scoop them up and decimate the biomass. The “core spawning area” should be protected.

Proposal 122—I do not support this proposal to reduce the biomass threshold for the Sitka stock from 25,000 tons to 20,000 tons. This proposal would remove existing conservation measures enacted by the Board of Fisheries and will be detrimental to the health of the herring biomass.

Proposal 125—I support this proposal to reduce the harvest rate to 10% and to place a cap on the commercial sac-roe harvest at 10,000 tons. This will increase the economic value of the roe harvested and leave more herring in the water to support the ecosystem and subsistence harvesters.

PROPOSAL 233 – I support this proposal. I agree with the proposer’s comments. I do not believe that this proposal will threaten the power troller catch or increase the hand troll ability to catch fish. It simply allows for older folks or those with injuries that don’t want to completely give up fishing to be able to continue a few more years without being forced to go to the power troll level. This is a permitted fishery so there won’t be any additional boats. I hope you will support this proposal.

Thank you for your consideration of my comments.



FV SYLVIA

Murray R Hayes
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February 8, 2015

ADF&G Board Support
PO Box 115526
Juneau, AK 99811-5526

Dear Board of Fish,

I have been a SE AK salmon troller for 40 years. I am a serious Chum fisherman and a member of Alaska Troller's Association and Chum Trolle'rs Association. The chum fishery is a great alternative to ocean trolling and a great way to harvest hatcher chums.

The purpose of this letter is to ask you to support three proposals. I will bullet them and give a brief description below. The intent of these proposals is to help stabilize the troll chum fishery and help trollers get their fair share which is stipulated in the hatchery catch sharing plans.

Please support:

- 176 NSRAA and DIPAC submit annual reports to Board of Fish on how they would get more fish to the gear group that is furthest behind.
- 188 Give Troller's exclusive use of SE Cove July 9 to July 30.
- 226 Icy Straits Troll Fishery (May and June) go from "experimental" to standard fishery.

Thank you for your consideration,

Murray Hayes



Murray R Hayes



Submitted By
Kim Elliot
Submitted On
2/9/2015 8:33:44 AM
Affiliation

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~~Introduction: I have been a resident of Alaska since 1959, mostly in Sitka and the Kenai Peninsula. My background includes working as a troll fish deckhand; ADF&G fish tech in Craig in the 1970's; as a herring roe technician during a sac roe fishery serving on a 150' herring sac roe fishery processor in the 1980's; for NSRAA tagging salmon at Deer Lake; for NOAA at Little Port Walter helping with research studying the effects of oil spills on salmon spawn both in the 1990's; I hold a 100 ton US Coast Guard license and served as a Naturalist and Captain for Allen Marine in Sitka as well as a charter fishing captain with my own business. I am now semi-retired. In retirement I serve as deckhand for my husband who has a hand troll permit. I have lived a subsistence lifestyle my entire life and am intimately familiar with Sitka Sound. Because of that background I hold the subsistence seat with the Sitka ADF&G Advisory Committee. I hope all this experience will give some weight to my words as I submit my personal comments to you on the following proposals.

Proposals 114 & 115 – identical: I support these region-wide proposals to require herring stocks to be above their minimum stock biomass for five consecutive years before a sac-roe fishery (seine or gillnet) can occur. Removing fishing pressure for an extended period of time will allow these stocks a greater opportunity to ensure sustainable levels. The closures of all sac-roe fisheries except Sitka Sound this year shows that depleted stocks need more time to recover, particularly in view of the recent ADF&G biomass reports quoted below which all reflect a reduction in herring biomass throughout Southeast Alaska and VERY POOR recruitment of 3 year olds.

On November 21, 2014 - "SITKA SOUND HERRING FISHERY ANNOUNCEMENTS: Sitka The Alaska Department of Fish and Game announced today the preliminary guideline harvest level (GHL) for the 2015 Sitka Sound sac roe herring fishery is 8,712 tons based on a 19.7% harvest rate of a forecast mature biomass of 44,237 tons. The department uses an age structured analysis (ASA) model which uses a long time series of abundance and age composition data from department surveys conducted during and following the spring fishery. Herring abundance is estimated using aerial surveys designed to map the length of shoreline receiving spawn, and dive surveys which estimate the density of eggs and the average width of the spawn. **The department mapped 50 nautical miles of herring spawn in the Sitka Sound area during the spring of 2014, compared to the recent 10-year average of 60 nautical miles.** The estimated post-fishery spawning biomass in 2014 was 51,321 tons and the total sac roe harvest was 16,957 tons. An additional 121 tons were harvested in personal use and test fisheries for a total mature population biomass of 68,399 tons, which was below the forecast of 81,663 tons. Samples of the spawning herring in 2014 resulted in an age composition of **1% age-3**, 39% age-4, 10% age-5, 8% age-6, 15% age-7, and 27% age-8+. **Contributing to the forecasted decline of the Sitka Sound mature herring biomass was very low numbers of age-3 recruit herring in 2014. Poor recruitment of age-3 herring was also observed for most other herring stocks in Southeast Alaska.** The forecast indicates that the Sitka mature biomass in 2015 will consist of 17% age-3, 5% age-4, 33% age-5, 5% age-6, 6% age-7, and 34% age-8 and older herring. The forecast and GHL for the 2015 fishery will be finalized using average weight-at-age from samples obtained in the winter test fishery, to be conducted in late-January or early-February, 2015. The final forecast will be announced in late-February or early-March."

On January 16, 2015 - "2015 SOUTHEAST ALASKA GILLNET SAC ROE HERRING FISHERIES UPDATE: Seymour Canal (Section 11-D): There will be no commercial fishery. The spawning biomass is forecasted to be 1,666 tons which is below the threshold of 3,000 tons necessary to conduct a fishery. **Hobart Bay/Port Houghton (District 10): There will be no commercial fishery.** The spawning biomass is forecasted to be 110 tons which is below the threshold of 2,000 tons necessary to conduct a fishery. **Kah Shakes/Cat Island (Section 1-F): There will be no commercial fishery.** No significant spawn event occurred in the Kah Shakes/Cat Island area in 2014 to warrant biomass assessment. **West Behm Canal (Sections 1-E and 1-F): There will be no commercial fishery.** The spawning biomass is forecasted to be 3,849 tons which is below the threshold of 6,000 tons necessary to conduct a fishery."

On December 2, 2014 - "HOONAH SOUND HERRING SPAWN-ON-KELP POUND FISHERY ANNOUNCEMENT Sitka. . . The Alaska Department of Fish and Game announced today that **no commercial spawn-on-kelp pound fishery will occur in Hoonah Sound during the 2015 season.** The forecast mature biomass for Hoonah Sound is 721 tons which is below the threshold necessary to conduct a commercial fishery. During the 2014 season, the forecast mature biomass was 833 tons and the department documented 3.2 nm of spawn. No fishery occurred during the 2014 season."

All of the foregoing ADF&G reports are relevant to most of the proposals I will comment on and I believe they reflect a trend in the herring biomass that is alarming. Particularly in view of the fact that ADF&G has no idea there is a problem until the 3 year olds don't show up in their samples. Because they don't have a way of sampling the 1 to 2 year olds until they join the schools of herring at 3 years of age they have no clue until 3 years later if something has happened to decimate the herring and yet they intend to continue harvest in what areas are left that still have a few fish. If for the next 2 years the 3 year olds do not show up a major reduction of herring biomass should be expected and 5 years from now there will be little or no 8 year olds which now are now the largest percentage expected to return.



I urge your review of the peer reviewed report "Identifying Essential Habitat (Source vs. Sink Habitat) for Pacific Herring (*Clupea pallasii*) in Sitka Sound Using Otolith Microchemistry Restoration Project 080834, Final Report by Heather Meuret-Woody & Nate Bickford. I will not include the report here in an attempt to keep my comments as brief as possible – link to it is at:

<http://www.evostc.state.ak.us/Store/FinalReports/2008-080834-Final.pdf> **Within this report there is significant information that indicates herring return to spawn where they started out** as well as other information you should have before you when making your decisions regarding herring proposals for Sitka Sound. My comments continue below:

Proposal 116 – I do not support this proposal that would require a fishery if minimum biomass threshold is reached. ADF&G needs to have the flexibility to make decisions based on science and recognition that there are unknown factors that contribute to the health of the herring biomass – such as the largest unknown this year “where are the 3 year olds?” It is likely the model they use for biomass determination is flawed in some areas that support the need for caution and the ability of ADF&G to have the leeway to make the conservative decision.

Proposals 117—I do not support this proposal which would reduce the Amount Necessary for Subsistence (ANS). The results of ADF&G Division of Subsistence herring harvester survey shows that the ANS is achievable, and that there is a high frequency of needs not being met. The proposer has not produced a peer recognized scientific paper that backs up their statements and conclusions. In addition, there has been consistent effort by the Sitka Tribe in conjunction with ADF&G to document ANS harvest as accurately as possible.

Proposals 119 and 120 (identical)—I do not support these proposals to close the subsistence only area in Sitka Sound. This proposal would remove existing protections that make it possible for subsistence harvesters to meet their needs and improve the spawning opportunity to help sustain the biomass.

Proposal 121—I support this proposal to increase the size of the subsistence only zone in Sitka Sound. Although the closure has helped subsistence harvesters to meet some of their needs, even more importantly, it gives the herring a protected area to spawn where the commercial fleet cannot go in and disturb, then scoop them up and decimate the biomass, particularly in view of the above information provided. In this case the “core area” which should be protected.

Proposal 122—I do not support this proposal to reduce the biomass threshold for the Sitka stock from 25,000 tons to 20,000 tons. This proposal would remove existing conservation measures enacted by the Board of Fisheries and will be detrimental to the health of the marine ecosystem. Again based on my comments above.

Proposals 123 & 124 – I do not support the cooperative fishery concept. I used to think that this would be a good idea as I thought it would be better for the herring population. I no longer think that is so. As the fishery is now operated they have to open areas that allow all the boats to access herring. Changing to a cooperative fishery would enable them to wait until the very last minute before herring spawn close in to shore and I believe this would disrupt the spawn. They could also have fewer boats out there but much more time to find the premium schools of herring. I know that even when out in a small boat the herring move away from a boat to continue their spawning.

Proposal 125—I support this proposal to reduce the harvest rate to 10% and to place a cap on the commercial sac-roe harvest at 10,000 tons. This will increase the economic value of the roe harvested and leave more herring in the water to support the ecosystem. There are other northern areas that wish to sac-roe harvest that have not harvested their full quota in past years due in some part due to market saturation.

Proposal 141 – I support this proposal regarding allowing commercial fishermen using troll gear in Sitka Sound to retain up to two lingcod per trip for personal use. I agree with the proposer’s comments and I do believe the local lingcod population is healthy enough to sustain this small amount that might be retained.

PROPOSAL 233 – I support this proposal. I agree with the proposer’s comments. I was also pleased to hear that the Alaska Trollers Association does not object to this as it has in the past. I have done my share of hard manual labor over the years which resulted in injuries to my shoulder joints that make cranking the heavier weight used for hand troll gurdies very difficult for me. I do not believe that this proposal will threaten the power troller catch or increase the hand troll ability to catch fish. It simply allows for older folks or those with injuries that don’t want to completely give up fishing to be able to continue a few more years without being forced to go to the power troll level. This is not a completely new regulation it just extends it from winter only, to spring and summer as well. This is a permitted fishery so there won’t be any additional boats. Last but not least, it is fun to land a fish with a rod and reel! There are many more arguments to support this change but I have given you the most important.

I appreciate the work to be done by the members of the Board of Fisheries and I hope you will agree with me on the foregoing proposals. Thank you.

Respectfully, Kim



Submitted By
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2/8/2015 3:26:58 PM
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~~As a resident of Sitka since 1959 and as a stakeholder in the health of our marine environment, I am commenting on several proposals that directly impact the subsistence lifestyle my family and I enjoy.

Proposals 114 and 115—I support this region-wide proposal to require herring stocks to be above their minimum stock biomass for five consecutive years before a sac-roe fishery (seine or gillnet) can occur. Removing fishing pressure for an extended period of time will allow these stocks a greater opportunity to build back to historic levels and ensure sustainable biomass. The closures of all sac-roe fisheries except Sitka Sound this year shows that depleted stocks need more time to recover.

Proposal 116 – I do not support this proposal that would require a fishery if minimum biomass threshold is reached. A F&G needs to have the flexibility to make decisions based on science and recognition that there are unknown factors that contribute to the health of the herring biomass – such as the largest unknown this year “where are the 3 year olds?” It is likely the model they use for biomass determination is flawed in some areas that support the need for caution and the ability of A F&G to have the leeway to make the conservative decision.

Proposals 117—I do not support this proposal which would reduce the Amount Necessary for Subsistence (ANS). The results of A F&G division of Subsistence herring harvester survey shows that the ANS is achievable, and that there is a high frequency of needs not being met. The proposer has not produced a peer recognized scientific paper that backs up their statements and conclusions. In addition, there has been consistent effort by the Sitka Tribe in conjunction with A F&G to document ANS harvest as accurately as possible.

Proposals 119 and 120—I do not support this proposal to close the subsistence only area in Sitka Sound. This proposal would remove existing protections that make it possible for subsistence harvesters to meet their needs and protects a traditional spawning area.

Proposal 121—I support this proposal to increase the size of the subsistence only zone in Sitka. Although the closure has helped subsistence harvesters to meet some of their needs, even more importantly, it gives the herring a protected area to spawn where the commercial fleet cannot go in and disturb them, then scoop them up and decimate the biomass. The “core spawning area” should be protected.

Proposal 122—I do not support this proposal to reduce the biomass threshold for the Sitka stock from 25,000 tons to 20,000 tons. This proposal would remove existing conservation measures enacted by the Board of Fisheries and will be detrimental to the health of the herring biomass.

Proposal 125—I support this proposal to reduce the harvest rate to 10% and to place a cap on the commercial sac-roe harvest at 10,000 tons. This will increase the economic value of the roe harvested and leave more herring in the water to support the ecosystem and subsistence harvesters.

PROPOSAL 233 – I support this proposal. I agree with the proposer’s comments. I do not believe that this proposal will threaten the power troller catch or increase the hand troll ability to catch fish. It simply allows for older folks or those with injuries that don’t want to completely give up fishing to be able to continue a few more years without being forced to go to the power troll level. This is a permitted fishery so there won’t be any additional boats. I hope you will support this proposal.

Thank you for your consideration of my comments.

Signe



Mr. Chairman and Alaska Board of Fisheries members. I'm Richard J Davis, a 51 continuous year resident of Juneau, and I've commercial fished salmon and halibut throughout Southeast Alaska, without interruption since 1973. Angling is also a lifelong hobby.

Thanks for this opportunity to comment on the Southeast Alaska and Yakutat finfish proposals.

I firmly support the goals and objectives of the Alaska Trollers Association.

I oppose and urge the Board to reject proposals; #113 an isolated and seemingly unscientific, and emotional request for a marine sanctuary.

#157 please leave the minimum size limit for Chinook salmon at the existing 28".

#174 Put the departments' current Taku River Chinook management methods into plan language, if a "plan" is essential.

#175,#176 these two proposals fiddle, or tinker with enhanced salmon allocation, and fail to grasp the vast complexities inherent in reapportioning gear group harvests of hatchery salmon. Overly ambitious and colossal in scope, the proposals authors appear to disregard every element of fisheries management except dollar value.

#193 relegating the salmon seine fishery in districts 12 and 14 to one day per week would be disastrous.



#194,#195 I'm unconvinced that salmon seining in Lisianski Inlet is crippling local coho stocks, or chronically eclipsing coho troll opportunities. Perhaps ADF&G will enlighten us?
#200 what statistical or scientific data exists, that demands or justifies closing the salmon seine fishery within 3000 feet of the Admiralty Monument?

#201 Another proposal dictating to ADF&G how to manage a commercial fishery, absent compelling science.

#220 While the winter chinook troll fishery has a 44,000 fish ceiling, please resist changing the winter boundary lines.

#223 Shuffling portions of summer troll chinook harvest between the open periods of the season, is not a popular idea, nor supported by more than a few individuals. Further, the proposal doesn't contain a management cost savings, nor is it a generator of additional product value.

#228 A mandatory 10 day August troll fishery coho closure erases the use of a closure as a management tool for conservation or allocation, as currently applied.

#230 Reducing fishing time available to trollers in area 15-C during the summer will mainly effect only the harvest of hatchery chum salmon. If left unaltered, the troll effort in Lynn Canal will definitely not concentrate unless chums do. If chums are scarce or not feeding there with persistence, trollers won't be there in July or August.

#231 This proposal needs some statistical backing, or substantiation as a necessity by the ADF&G.

I support, and encourage you to adopt proposals;



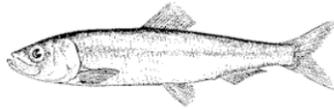
#224 An excellent management tool for harvest of small remaining quantities of summer troll chinook.

#229 Expands area for trollers to fish chum salmon in Icy Strait.

Sincerely, Richard j. Davis
2347 Kevin Ct.
Juneau Alaska 99801



SOUTHEAST HERRING CONSERVATION ALLIANCE



P.O. BOX 61
Sitka, Alaska 99835
Tel. No. 907-738-3509

February 6, 2015

Board of Fisheries

February 23 – March 3, 2015
Sitka, Alaska

Dear Vice Chairman Kluberton and Board of Fish Members:

The Southeast Herring Conservation Alliance (SHCA) submits these comments on proposals you will be considering at the upcoming meeting concerning fisheries in southeast Alaska. SHCA is a 501 (c)(6) not for profit and represents the interests of fishermen, processors, tender men, crew, and families associated with herring fisheries throughout southeast Alaska. SHCA members participate in the Sitka Sound herring sac roe fishery and other herring fisheries in Southeast. Forty-four sac roe permit holders of the 48 total permits are SHCA members. Membership is defined by dues paid by the permit holders. SHCA looks forward to working with the board this year on proposals pertaining to our fishery.

Re: Opposition to Proposals 118, 121, 125; Support for Proposal 117, 119, & 122

A general comment first: it has been reported at the board in past meetings that herring are important to the diet of Chinook salmon as predator. A recent study by Ms Iris Kemp *Evaluating potential for resource competition between juvenile salmon and Pacific herring* demonstrates that adult herring have a major impact on juvenile Chinook as a prey item. A quote from the abstract “Because herring were much more abundant than salmon species, the population-level consumption by herring exceeded consumption by salmon, sometimes by orders of magnitude. If shared prey items are a limiting resource, there is considerable potential for herring to negatively affect salmon growth, particularly for Chinook salmon.”

Oppose Proposal 118 – to provide harvest to 50% of annual GHL, and then cease fishing until 25% of forecast spawn miles are realized.

This proposal is another attempt to curtail the herring fishery. If adopted the effect would be taking the GHL each year and cutting it by half. Once the herring begin spawning there are fewer and fewer fishery opportunities and if the fishery waits until 25% of the spawn occurs then there will likely be no



opportunities. The proposer ties the rationale for this proposal to subsistence needs not being met. I address the subsistence issues below in #121 and #117; the comments are detailed and in consideration of space and time will not repeat them in this section.

This proposal was voted down by Sitka ADF&G Advisory Committee meeting.

Oppose Proposal 121 – Expand closed area to fishing north to Starrigavin.

In late January 2015 the Federal Subsistence Board shutdown additional area adjacent to the Board of Fish closed area near Makhnati. This action was taken against the advice and recommendation of the Office of Subsistence Management staff biologists and against testimony by the State of Alaska.

An approximately 10 square mile area was closed to fishing at the 2012 board of fish meeting. This was a political decision not a conservation decision. The proposer's contention is twofold: 1) sac roe harvests near or in the core area negatively affect subsistence egg on hemlock branch harvest, and 2) removing the core area from the fishery management unit will assure ANS. Both contentions lack supporting evidence and are contrary to conclusions in the Subsistence Division 2002-2010 Report No. 343 (Holen D., et.al. 2011), and the 2014 report soon to come out, both of which in part states that the more significant reason as being "participation in the subsistence harvest has declined in recent years". In fact, the 2014 report states ANS was met in 2014. In 1985 Gelmech and Gelmech published a report stating that herring egg subsistence in Sitka Sound is practiced by a small proportion of the community. Twenty-five years later as stated in the Subsistence Division Report No. 343, that small number of harvesters has declined further. Five well known "high harvesters", who were fishermen (sac roe & salmon) and harvested herring eggs for Sitka and outlying communities have either retired or died. The reports' graph and table on page 24 and 25, respectively, tell the story of the decline in participation. The report also speaks to the desire to receive herring eggs which has remained nearly constant.

The real question, then, is whether expansion of the core area or any part of the core area is necessary to provide a "reasonable opportunity" for subsistence, as defined in AS 16.05.258(f). That term is defined as "...allows a subsistence user to participate in a subsistence hunt or fishery that provides a normally diligent participant a reasonable expectation of success..." Reasonable opportunity is available every year. Based on ADG&G survey transects heavy spawn densities have been documented at locations along the road side and/or within several miles of the Sitka road system in all years of the past decade (see attached ADF&G spawn maps or raw survey data). According to the Subsistence Report No. 343 the ANS guideline has been met six of the nine years documented in the report. In 2005, 2007, & 2008 when the lower ANS guideline was not reached it was not due to lack of reasonable opportunity, but rather reduced effort & participation, weather, and/or fuel costs, not to mention the reported numbers are not transparent. Spawn distribution does have a role in success, as the herring do not spawn with the same intensity at all given locations every year. Additionally, Report No. 343 calls into question their reported numbers by acknowledging the methodology was changed in 2010. The report does not discuss what the overhaul in methodology means to previous subsistence harvest estimates. The change certainly begs validation of, or qualification of previous results. Much additional work needs to be done to develop a scientifically defensible and transparent methodology.



SHCA's work in 2009, 2010, 2012, 2013, & 2014 demonstrates there is reasonable opportunity for subsistence harvest of herring in Sitka Sound. Determining the total weight of herring eggs (actual measured weights) required to meet needs is a different question, but based on our work it appears to be closer to 50,000 lbs for Sitka (see attached Herring Eggs on Branches Program 2009).

In the past decade, the department has made a serious effort to stay out of the core area when possible; it has not always been possible. However, the vast majority of openings have been conducted outside the core area based on ADF&G reporting. From 2002 to 2012, approximately 80% of the sac roe harvest has been taken outside the 'Core Area' and of course since 2013 all harvest has occurred outside the closed Core Area. Regardless, the core area has had abundant spawn in all years. It is the one constant. In some years herring spawn in the Redoubt area or Deep Inlet but other years they do not; however, ADF&G spawn maps show consistent spawn in the core area every year and year after year. Certainly there is variability in the spawn density but Kasiana, Middle, Crow, and a portion of the roadside consistently have annual spawn.

This proposal is intended to diminish the fishery and the harvest. The proposers claim that subsistence needs cannot be met with the current sac roe fishery management plan. This is patently untrue and there is good evidence to demonstrate otherwise. In 2008 – 2010 and 2012 - 2014 the herring fishermen, processors, tender men, and community members got behind a program to help meet this need. SHCA's herring egg harvest is supplied to ADF&G Subsistence Division each year and used in their analysis of the egg harvest.

If subsistence harvest information is used to curtail a fishery then that information needs to be transparent and verifiable, similar to commercial harvest data. There is no information to support that subsistence opportunity has been diminished in recent years. To the contrary, given increasing stock abundance and review of ADF&G spawn maps depicting spawn distribution, one can only conclude that subsistence opportunity is now greater than it has been since the department began managing the Sitka Sound herring stock in the 1970s.

The ability and desire to get out and collect the eggs may have declined for a variety of reasons, but there are groups and individuals ready to help with meeting that desire. SHCA data and reports have demonstrated there is reasonable opportunity.

This proposal was voted down at Sitka ADF&G Advisory Committee meeting.

Oppose Proposal 125 – change harvest formula from $2 + 8(\text{spawning biomass in tons}/25,000)$ to a maximum harvest rate of 10% with a maximum harvest of 10,000 tons.

There is no justification for changing the harvest formula. The formula is consistent with large biomasses of herring elsewhere in Alaska and coastal Canada from the Strait of Georgia to Prince Rupert, where herring is also increasing in biomass. Populations of herring with lower total biomass are managed with the "8+2" formula in Alaska for good reason; they are small populations, perhaps less resilient, and require a more conservative management regime. One size does not fit all, and should not. The "2+8"



formula used by ADF&G in Sitka Sound is actually conservative for the large population size. In ten of the past eleven years the “2+8” formula resulted in a 20% harvest rate and yet during that same period of time the population has grown from an estimated 52,985 ton biomass to 145,042 tons and back down to the 50,000 ton range. In the past three years the biomass has turned down due to two weak three year old age classes (2012 and 2014). However, the 2013 age threes were strong and a review of the historical data shows the 3 year old component has had multiple years of strong, weak, and moderate recruitment.

The conservation and protection built into the formula is in the harvest threshold side of the equation. Currently no harvest can occur in the Sitka Sound sac roe fishery until the biomass reaches 25,000 tons (adopted by Board of Fish in 2009); as the biomass rises above 25,000 tons the formula provides for a harvest rate that begins at 10% and rises to a 20% harvest rate maximum. Most herring stocks in southeast Alaska are considerably smaller than the minimum threshold of the Sitka Sound stock. The minimum threshold enabling a fishery has increased for the Sitka stock from 6,000 tons in 1977 to 7,500 tons in 1983 and then was raised to 20,000 in 1997 as the biomass continued to increase. This was viewed as a conservation action even though there was not a biological need or a recommendation made for either the 20k or 25k ton threshold by ADF&G. By way of compromise to minimize loss of commercial harvest, the board adopted the “2+8” formula at the 1997 meeting. In 2009 the Board of Fish again increased the minimum threshold, this time to 25,000 tons for added conservation at lower stock levels, though there was no conservation need demonstrated or supported by ADF&G. This was done at a time when the herring expanded to nearly 90,000 tons in stock biomass.

There is no biological basis for changing the formula. ADF&G has been meticulous in seeking outside consultants and experts to review its ASA model, including UA professor Ted Cooney and a recent P.hD candidate at UW. In fact, in 2011 Canada’s Department of Fisheries and Oceans invited ADF&G to participate in a two day workshop with DFO modelers and biologists to meet with modeling experts from the University of Washington (Dr. Andre Punt) and University of British Columbia (Dr. Steve Martell) in Nanaimo, B.C. (per. comm. Dr. Sherri Dressel). The scope of the workshop included model functions, inputs, outputs, mortality factors, precautionary approach, and many esoteric modeling factors. The Canadian herring model was reviewed and frequent questions were asked of the Alaska team to bore into model criteria. Based on this review it is apparent the department is doing its due diligence to keep abreast of the latest modeling recommendations and science. (No publicly available document produced by ADF&G)

This proposal seeks to harm the fishery, which in turn would harm anyone associated with the fishery – the communities of Sitka, Petersburg, Craig, Kake, Craig, Hydaburg, and Ketchikan; crew, tender men, processors and associated service providers. In fact it would hurt STA members as many are fishermen and crew (6%). In a survey conducted in 2009 it was found 74% of the permit holders were Alaskan, 18% permit holders were Alaska Native, and 29% Alaska Native when including spouse, family & permit holder.

This proposal was voted down at Sitka ADF&G Advisory Committee meeting in December 2014.



Support Proposal 117 – Change ANS in Sitka Sound to reflect true harvest weights. Establish an accounting system for herring egg harvest in Sitka Sound through sampling program.

The fundamental reason for this proposal is the ANS range (136,000 to 227,000 lbs) for herring eggs in Sitka Sound is not based on scientifically defensible data or data that is transparent. More to the point, the ANS guideline is being used by some, to claim the sac roe fishery is the reason ANS cannot be met. Based on SHCA's work in 2008 – 2014 collecting and delivering eggs in Sitka, this is simply not true. Our work outlined in previously submitted reports, show needs can be and were met, and as important, reasonable opportunity is extant. In order to truly document the harvest of herring eggs and what quantity (by weight) meets those needs, a new methodology is required with greater scientific and statistical rigor than the current household survey methodology. SHCA understands that subsistence harvest throughout most of the State of Alaska does not require a permit or have "creel type censuses" to document harvest. However, Sitka Sound herring eggs and the sac roe fishery is a unique situation and demands a unique solution.

A study design that provides scientifically defensible data could be relatively simple. The herring egg harvest including tree preparation is done in a short period of two weeks in late March or early April. The eggs are primarily brought across one of six docks in Sitka – Starrigavan, Eliason, Thompson, ANB, Crescent, and Sealing Cove harbors. Based on experience in 2009 - 2014 the majority of herring eggs transit the Eliason dock due to its drivable ramp and work float but also the dock's central location in Sitka, as well as proximity to the core herring spawn areas to the north (i.e., Kasiana, Middle Islands).

In order to estimate harvest quantity, Subsistence Division samplers could observe/sample the docks for harvesters shortly after the first major spawn event. Harvesters could provide information to samplers or, less invasively, samplers could estimate weight of harvest, number of harvesters, and size of containers used to transport the harvest, and frequency. All docks should be surveyed although proportional sampling could be done much as the king salmon creel survey methodology. The majority of eggs cross the docks in a seven day period, and therefore the duration of the survey can be short.

Estimating effort could consist of two elements: 1) interviewing harvester as they transit the docks as outlined above and 2) observations on the core subsistence areas for number of branch sets, size of branch sets, number of harvesters making sets, and size of harvest vessels. Success rate should be estimated by combining effort with harvest amounts, lost or stolen branch sets, and weight of eggs per set.

Support Proposal 119 Eliminate the closed area adopted at the 2012 board of fish meeting.

In late January 2015 the Federal Subsistence Board shutdown additional area adjacent to the Board of Fish closed area near Makhnati. This action was taken against the advice and recommendation of the Office of Subsistence Management staff biologists and against testimony by the State of Alaska. Now that the feds have closed all federal waters around Makhnati for protection of subsistence and conservation the 2012 'Core Area' can be rescinded.



The reasons for establishing the Core Area closure was arbitrary and capricious and patently not necessary for successful subsistence herring egg collection. SHCA demonstrated success in 2009, 2010, and 2012 (three years without a Core Area closure) with herring egg harvests of 30,000 to 70,000 pounds. These harvests were made available to the community of Sitka. While the demand remained high for most of a week eventually the demand slowed. In all years we had more eggs than the number of people showing up to receive them. Excess eggs in each year were returned to the ocean.

Supporting evidence can be found in conclusions in the Subsistence Division 2002-2010 Report No. 343 (Holen D., et.al. 2011), and the 2014 report, both of which in part state a significant reason being “participation in the subsistence harvest has declined in recent years”. In fact, the 2014 report states ANS was met in 2014. In 1985 Gelmech and Gelmech published a report stating that herring egg subsistence in Sitka Sound is practiced by a small proportion of the community. Twenty-five years later as stated in the Subsistence Division Report No. 343, that small number of harvesters has declined further. Five well known “high harvesters”, who were fishermen (sac roe & salmon) and harvested herring eggs for Sitka and outlying communities have either retired or died. The reports’ graph and table on page 24 and 25, respectively, tell the story of the decline in participation. The report also speaks to the desire to receive herring eggs which has remained nearly constant.

The real question, then, is whether expansion of the core area or any part of the core area is necessary to provide a “reasonable opportunity” for subsistence, as defined in AS 16.05.258(f). That term is defined as “...allows a subsistence user to participate in a subsistence hunt or fishery that provides a normally diligent participant a reasonable expectation of success....” Reasonable opportunity is available every year. Based on ADG&G survey transects heavy spawn densities have been documented at locations along the road side and/or within several miles of the Sitka road system in all years of the past decade (see attached maps). According to the Subsistence Report No. 343 the ANS guideline has been met six of the nine years documented in the report. In 2005, 2007, & 2008 when the lower ANS guideline was not reached it was not due to lack of reasonable opportunity, but rather reduced effort & participation, weather, and/or fuel costs, not to mention the reported numbers are not transparent. Spawn distribution does have a role in success, as the herring do not spawn with the same intensity at all given locations every year. Additionally, Report No. 343 calls into question their reported numbers by acknowledging the methodology was changed in 2010. The report does not discuss what the overhaul in methodology means to previous subsistence harvest estimates. The change certainly begs validation of, or qualification of previous results. Much additional work needs to be done to develop a scientifically defensible and transparent methodology.

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In the past decade, the department has made a serious effort to stay out of the core area when possible; it has not always been possible. However, the vast majority of openings have been conducted outside the core area based on ADF&G reporting. From 2002 to 2012, approximately 80% of the sac roe harvest has been taken outside the ‘Core Area’ and of course since 2013 all harvest has occurred outside



the closed Core Area. Regardless, the core area has had abundant spawn in all years. It is the one constant. In some years herring spawn in the Redoubt area or Deep Inlet but other years they do not; however, ADF&G spawn maps show consistent spawn in the core area year after year. Certainly there is variability in the spawn density but Kasiana, Middle, Crow, and a portion of the roadside consistently have annual spawn.

Closing the Core Area was intended to diminish the fishery and the harvest. The proposers claim that subsistence needs cannot be met with the current sac roe fishery management plan. This is patently untrue and there is good evidence to demonstrate otherwise. In 2008 – 2010 and 2012 - 2014 the herring fishermen, processors, tender men, and community members got behind a program to help meet this need. SHCA's herring egg harvest is supplied to ADF&G Subsistence Division each year and used in their analysis of the egg harvest.

If subsistence harvest information is used to curtail a fishery then that information needs to be transparent and verifiable, similar to commercial harvest data. There is no information to support that subsistence opportunity has been diminished in recent years. To the contrary, given increasing stock abundance and review of ADF&G spawn maps depicting spawn distribution, one can only conclude that subsistence opportunity is now greater than it has been since the department began managing the Sitka Sound herring stock in the 1970s when the biomass was ten percent of today's biomass.

The ability and desire to get out and collect the eggs may have declined for a variety of reasons, but there are groups and individuals ready to help with meeting that need. SHCA has demonstrated there is reasonable opportunity prior to the closing the 'Core Area'. It is reasonable and fair to eliminate the closure area and allow ADF&G to manage the fishery for the benefit of all, including subsistence harvest.

Support Proposal 122 Lower the threshold to harvest to 20,000 tons herring biomass, the 1997 to 2008 regulatory minimum threshold.

The change to 25,000 ton threshold was done at the 2009 board of fish meeting based on sentiment not biology and should be rolled back to 20,000 tons. The conservation and protection built into the formula is in the harvest threshold side of the equation. Currently no harvest can occur in the Sitka Sound sac roe fishery until the biomass reaches 25,000 tons (adopted by Board of Fish in 2009); as the biomass rises above 25,000 tons the formula provides for a harvest rate that begins at 10% and rises to a 20% harvest rate maximum. Most herring stocks in southeast Alaska are considerably smaller than the minimum threshold of the Sitka Sound stock.

The minimum threshold enabling a fishery has increased for the Sitka stock from 6,000 tons in 1977 to 7,500 tons in 1983 and then was raised to 20,000 in 1997 as the biomass continued to increase. This was viewed as a conservation action even though there was not a biological need or a recommendation made by ADF&G. By way of compromise to minimize loss of commercial harvest, the board adopted the "2+8" formula at the 1997 meeting. In 2009 the Board of Fish again increased the minimum threshold to 25,000 tons for added conservation at lower stock levels, though there was no conservation need demonstrated or supported by ADF&G. This was done at a time when the herring



expanded to nearly 90,000 tons in stock biomass. These earlier thresholds (6,000 tn & 7,500 tn) when herring fisheries still occurred annually suggests those thresholds were adequate for sustainability.

SHCA members and associate members will be at the Sitka meeting; we would welcome the opportunity to talk with board members about the fishery, these proposals and to answer any questions. We would also like to serve on the board committee formed to address these proposals.

Thank you for your time and commitment to the board process and the opportunity to comment.

Sincerely,

Steve Reifensstuhl
Executive Director SHCA

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Sac Roe Fishery Participation Survey 2009. Theresa Allen Olson and Southeast Herring Conservation Alliance.



Submitted By
Terry Friske
Submitted On
2/8/2015 7:02:18 PM
Affiliation

As a member of CTA and ATA I would like to go on record as opposing prop 175, and supporting
props: 176, 188, and 226.



**The Written Testimony of James Carter Hughes, FV Astrolabe,
Thombson Harbor, Sitka
Feb. 6, 2015**

Mr. Chairman and members of the Alaska State Board of Fisheries:

My name is Carter Hughes and I am a troller from Sitka Alaska. I have been in the Alaska commercial fishing industry since 1984 and the skipper of a troller since 1994. I also possess about 10,000 lbs of sablefish and halibut IFQs located in SE Alaska waters. I have a 37 foot fishing vessel and my perspective is that of a small boat owner operator. I will address a couple of longline issues and quite a few troll issues. I will divide the troll issues into two categories. Those categories are proposals that address the issue of access to enhanced fish, i.e. hatchery fish, and proposals that address other troll management concerns.

With regard to the longline proposals, I **support proposals 136 and 137**. These proposals seek to establish a 50 fish annual limit on the personal use sable fish fishery and a 350 hook limit on the gear deployed. 50 sablefish is plenty of fish to supply a family for a year, especially since there are other fish, salmon, rockfish, etc. for personal use options. There have been large cuts made to the State commercial sablefish fisheries in the past few years and a 50 fish limit leaves an abundant supply of these fish for the households that utilize these permits without encouraging wanton waste or black market behavior. The 350 hook limit is appropriate because it restricts the excess deployment of gear and unnecessary hook and release of overage. There is clearly some sort of conservation concern in the SE AK sablefish fisheries or the ADF&G would not have been making such large cuts in the commercial quotas in the past few years. Again, these restrictions will not deter households from having plenty of access to sablefish; they will merely foster prudent fishing and food use practices. And now, on to the troll salmon proposals.

I will first address the various non-enhanced fish related proposals that will affect the troll fishery. I am **opposed to proposals 220 and 221** that seek to move the boundary lines of the winter king salmon troll fishery out in the Yakutat area. I am an avid participant in the winter king salmon fishery. I have been fishing winter kings since 1994. I am currently fishing in the Sitka area, the most productive area this winter, although Yakutat is typically every bit as productive, if not more per vessel effort. The winter fishery has had a uniquely privileged situation for over 20 years in that it is guaranteed 45,000 kings (plus the AK hatchery produced kings since 2012 – typically between 3 and 5 thousand fish a year) regardless of the overall SE AK king salmon quota determined by the Pacific Salmon Treaty (PST) abundance index. The winter king troll quota does not float with abundance it is stable despite fluctuations in the annual total number. Opening up more area on the ocean would simply result in the quota being caught sooner and likely presage requests to scavenge fish from the summer fisheries. I object to any and all attempts to expand the winter king troll fishery any more than it has already grown. The fishery is plenty lucrative for participants, especially in the Sitka and Yakutat areas.



I support the ATA proposal 224 for a trip limit mop up provision for catching leftover kings left on the table after the second (August) opener. I only support the use of trip limits for the purpose of catching the last few thousand kings that are left over, if there are any, after the August opener. Allowing for this will give a small but useful amount of income to the troll fleet. It will also help protect the State against claims from Canada and the Lower 48 that we can't catch the fish because they "aren't there."

I support proposal 223, that changes the percentages between the July and August kin openers from 70% in the July opener and 30% in the August opener to 60% in the first and 40% in the second. This will only occur if the abundance index is over 1.6, a situation that has existed 8 times out of the past 20 years. The larger number in the second opener allows for people to take kings as by catch as they target the larger late summer coho. The kings tend to be larger this time of year as well, which makes them more valuable. It gives a second chance to those vessels that missed the fish in the first opener. The claims of PST concerns mentioned by some trollers (different stocks being fished because of the percentage shift) have not been expressed by ADF&G. The department remains impartial on this through out the years, and this proposal has been coming up for about 17 years. Quite frankly, I think the objections are coming from those that benefit from a derby styl fishery in the first opener. Those folks that want to get as much as they can in the first opener and go longlining for the rest of the summer, head south and king fish or tuna fish in the lower 48 waters (i.e. non residents) or have very large vessels that freeze there catch at sea and would just as soon catch all the kings and be done with it.

I oppose 228, a proposal that mandates a ten day closure for the troll fleet from August 1 to August 10. There is already a management process the ADF&G uses for determining the appropriate length and timing of closure required to allow coho to move to inside waters. It has proven quite effective over the years. Department data will back this claim up. I find it distressing that a small village community would try to close a whole region, much of which has no potential to impact their systems of concern, to trolling, a small vessel hook and line fishery. This proposal is draconian. Refer to ADF&G comments opposing this proposal. It will reduce management flexibility. The closure that is requested is unlikely to achieve the goals that are desired and yet it will be a serious economic blow to the troll fleet. Now I will move on to the proposals that concern access to enhanced fish.

The SE AK troll fishery has been harvesting below its designated value of enhanced salmon range (27% -32%) for most of the past 20 years, since the regulations were implemented. These regulations were not implemented at the request of the troll fleet but at the request of the gillnet fleet. The gillnet fleet has been harvesting significantly above their designated range during this period of time. That said, I support proposal that seek to maintain or increase opportunity for trollers to access hatchery produced fish and oppose those proposals that curtail efforts by trollers to harvest hatchery produce fish. Hatcheries are not the exclusive cash cow for the net fisheries; they were built to provide fish for all users of salmon in the region. The status of the troll fleet and its access to enhanced fish is that of a second class citizen. All gear groups pay a 3% tax on all fish that are landed, whether or not they are produced by an Alaska hatchery facility. We pay



27% of the enhancement tax and harvest 20% of the value of enhanced fish. The troll underage is used as justification for starting new enhanced fish projects and yet trollers are typically denied meaningful opportunities to harvest the fish being produced. The lack of access is egregiously acute in the northern SE AK region. In particular, troll access to Terminal Harvest Areas (THAs) is not permitted in the northern regional hatcher associations in any meaningful way. There is never a block of days provided as there is for net fisheries. Where THA access is allowed it is only for one or two days a week. The troll openers are really not designed to provide troll access but to allow for fish to build up for the next net fishery opener. This is not the case with the southern Southern Southeast Regional Aquaculture Association (SSRAA). In fact they have an excellent example of management practices that address the troll underage issue in that area.

SSRAA has displayed an exemplary and effective effort in managing there access for troll salmon harvest, especially with the Neets Bay chum fishery, but also with robust programs producing king and coho salmon. Trollers typically harvest enough salmon to achieve a value that approaches or falls with in the allocation range (27 - 32%). This is primarily due to having a meaningful access to the THA and special harvest areas, especially for chum salmon.

This is not the case with the northern regional hatchery associations, Northern Southeast Regional Aquaculture Association (NSRAA) and Douglas Island Pink and Chum (DIPAC). Although options and suggestions have been placed before the hatchery boards that determine policies and priorities of salmon production, trollers concerns tend to be ignored. We sit in the back of the bus and are told to shut up. We are told that it is our lack of ability to catch the fish in significant numbers in the mixed stock fisheries that is the problem. In fact the real problem is lack of access to terminal harvest areas. Despite the example of success displayed by SSRAA, No substantial allowance for THA access has been provided by DIPAC or NSRAA. Our suggestions for equitable treatment are ignored.

Having spoken my mind on the situation, I would rather work with in the current syste of management and work on rectifying the situation through the BOF and hatchery association boards, i.e. I don't want to tear down the house, I just want to repair it. I will now address proposals that are pertinent to enhanced fish access. I **oppose proposal 175**, which is effectively saying that it is better to change the management and access percentages to reflect the current privileged position the net fisheries instead of trying to deal with the troll underage. This is a tear down the house proposal. I **support 176** which speaks to the underage concerns of any gear group, not just the troll fleet. If either the seign fleet or the gillnet fleet were in the position of the troll fleet, the northern regional hatchery associations would be doing something about it and if they were not then this proposal would address their access deficit as well. This is a fix the house proposal.

I **support proposal 184**. It provides a fine example of how SSRAA is being proactive in addressing a gear group consistently beneath its range on the value of enhanced fish harvested, in this case trollers.



I **oppose proposal 187** which allows for a gillnet rotation in the SE Cove THA based on a perceived threat of a future underage in enhanced salmon harvest. This is USAGs attempt to invest in “futures of potential enhanced fish underage”. I find it interesting and ironic that the gear group that has been over its level of enhanced fish harvest for most of the past 20 years wishes to have access to a terminal harvest area and yet is unwilling to address the access concerns of the gear group that has been under its allocation range for the same period of time. It’s this sort of flagrant bias that must be addressed and pro 176 will be the way to do that.

I **support proposal 188** because it provides for a meaningful access option in Southeast Cove to address the troll underage.

I **support proposals 225, 226, 227 and 229**, which deal with the District 12 and 14 chum salmon spring troll fishery. This fishery targets hatchery produced chum, primarily produced by DIPAC and has been very helpful in increasing the value of the enhanced fish percentage harvested by trollers. It is an important piece of the puzzle in solving the enhanced fish value underage. Of these proposals 226 and 227 would be preferable to 225, which is just a placeholder proposal. Proposal 229 provides for a transit corridor between two currently unconnected areas between Icy Straits and the Admiralty Island shore. It would allow for trollers to transit from one area to another without pulling their gear.

I **oppose proposal 230**, which is a proposal to restrict troll access in Area 15-C. There is not a lot of troll effort there. However, if a troll fishery, targeting hatchery produced chums, were to develop it would help bring the trollers in to their range in the enhanced fish sharing agreement. The “anecdotal evidence” of king salmon mortality concerns is not backed by any data. Sport fishing is not much different from trolling and they troll even slower. If it’s true for trollers it’s probably true for sport fishing as well.

I **oppose proposal 231**, which would restrict an area in the Neets Bay troll chum salmon fishery, the most successful enhanced fish fishery for the troll fleet. The authors of the proposal resort to anecdotal evidence and bring no data to the table to support their argument

Thank you all for taking the time to read this document. Thank you for the public service you provide by serving on the BOF. It is a lot of work performed by truly dedicated individuals. Again I thank you for taking on this responsibility. Thanks again for trying to sort out all the complicated concerns and agendas of the many varying interests involved in the fisheries of this unique state.

Sincerely,
James C Hughes
FV Astrolabe
CO SPC 507 Katlian St
Sitka, 99835





February 9, 2015
Alaska Department of Fish and Game
Board of Fisheries
PO Box 115526
Juneau, AK 99811

Dear Board of Fisheries Members,

RE: Comments on February Southeast Finfish Proposals February 23-March 3, 2015

Petersburg Vessel Owners Association is composed of almost 100 members participating in a wide variety of species and gear type fisheries. An additional thirty businesses supportive to our industry are members. Our members fish throughout Alaska from Southeast to the Bering Sea. Targeted species include crab, herring, salmon, shrimp, halibut, sablefish, and cod.

PVOA's mission statement is to:

"Promote the economic viability of the commercial fishing fleet in Petersburg, promote the conservation and rational management of North Pacific resources, and advocate the need for protection of fisheries habitat."

Proposal 113: oppose

There is no biological reason to create a conservation area here. There are no endangered species in these waters that would be protected by it. There are many commercial and sport fisheries in and around this area currently. We don't want the commercial, sport, and personal use fishermen for sea cucumber, bottom fish, crab, shrimp, and salmon to lose this opportunity.

Proposal 114 and 115: oppose

Herring stocks are cyclical and this could prevent the herring sac row fishery from opening on seasons with sufficient return to support a fishery because past stocks were low. Herring return to spawn for up to seven years. These proposals could decrease the amount of management the department has over this fishery. We would like them to have the maximum amount of flexibility so they can best manage the fishery.

Proposal 116: support

When the returning biomass of herring exceeds the minimum threshold there needs to be a fishery. There are a lot of fishermen with major investments in this fishery and the current wording of the regulation leaves the possibility that the fishery wouldn't be opened.

Proposal 117: no position

Proposal 118: opposed



The goal of the herring sac roe fishery is to harvest the herring before they have spawned. The market on these herring is primarily for their eggs. Forcing the department to wait to open the fishery to the remaining 50% of the GHL until after 25nm of spawn would result in higher levels of spawned out fish being caught. This would greatly reduce the quality of the herring sent to the market. It is also likely that the GHL would not be caught every year under this management plan. Young herring spawn the latest and this proposal could create excessive fishing of the younger recruit stocks. Once again, we want the department to have more flexibility to manage the fishery than this proposal would allow for.

Proposal 119: support

This area was closed to allow for subsistence harvest of roe on branches. There has been very minimal effort from the subsistence users. In some years there has been no effort. There is a large amount of herring that returns to this area. This area should be open to commercial fishermen that would utilize it.

Proposal 121: oppose

There is already little to no subsistence use of district 13. There is no reason to expand this closed area. A lot of herring return to this area. Closing it to the commercial sector could hinder their ability to catch their full GHL. Also, it should be up to the department to manage and close areas when they deem it necessary.

Proposal 122: support

The GHL of this fishery was raised five years ago without science to support the decision. This decision also was not made by the department. There is no science to suggest that lowering it would harm the sustainability of the fishery.

Proposal 123 and 124: no position**Proposal 125: oppose**

There is no reason to reduce the GHL of this fishery to 10,000 or lower. The stocks can sustain a higher harvest rate and there are a lot of fishermen with large investments in this fishery. This would have a huge economic impact on our fishermen. In other herring fisheries it has always been up to the department to determine the minimum spawning biomass and manage the fishery from there. We don't support this proposal that would decrease the department's flexibility in managing the fishery.

Proposal 126: oppose

This has been a fishery in the past and created more product than the market could support. The product from these open pounds in this area was of lower quality than the product from closed pounds. It would adversely affect the current pound fisheries by introducing an influx of inferior product. None of our members that currently participate in the roe on kelp fisheries in other districts want to participate in this proposed district.



Proposal 127: oppose

The department manages the amount of herring taken in the pound fishery by managing how many structures are used. The management of the number of pound structures is done through the amount of blades allowed per permit by pen. The more permits fished in a single pen, the more blades allowed per permit. This would eliminate the department's current management plan. It would also encourage the use of more pounds and therefore increase the harvest of herring for this fishery. We believe this would result in more stress on the stock and decrease the sustainability of the fishery.

Proposal 129: no position

Proposal 130: no position

Proposals 134 and 135: support

PVOA supports legalizing pots to fish sablefish quota. Whale depredation is a major issue in southeast Alaska. Our fishermen lose a large portion of their catch to whales feeding off their gear as they haul it. The amount of fish lost to these whales is not measurable for management purposes and it is wasted.

Sablefish pots would also reduce bycatch, including birds. Birds occasionally attack the bait on longline hook gear as it is being set and become snarled. Very small fish will be released through the mesh used on pots. Escape rings would allow non-directed species to swim out while the pot is on the bottom, avoiding the trauma of being hauled to the surface before being released. Small recruit stock sablefish would also escape this way with fewer traumas. Non-directed species that are too large to swim out of an escape ring would be spared the injury from biting a hook. Pot fishing would eliminate these issues.

When a hook and line set is lost the hooked fish suffer predation. Fish in a lost pot can potentially survive. Escape rings would allow small fish to leave the pot and survive. Larger sablefish and other species of fish could survive to leave the pots through a biodegradable panel. This would ensure fish in lost pots would not be wasted.

If this passes our fishermen would like there to be one season for both gear types rather than the two in place at this time. This is because almost all of our sablefish fishermen also target salmon. Two seasons could force them to choose between the sablefish and salmon fisheries and potentially have an economic impact on them.

Proposal 136: support

Fifty fish per household is a lot to harvest, care for, and consume in a year. We support this proposal and feel like it is in excess of what is actually taken for personal use.



Proposal 137: oppose

We have members with autobaiter systems that would like to be able to use their equipment to make a subsistence set. Since you cannot run both types of gear, our members with autobaiter gear don't have hand bait sets similar to what is being proposed. We would like them to be able to use the gear they currently own to be able to make subsistence set.

Proposal 138: support

We support requiring logbooks so that the department gets more information to better manage the fishery.

Proposal 139 and 140: no position

Proposal 141: support

We feel that trollers in the LAMP should be able to retain and enjoy two lingcod per trip. Under the current regulations it is hard for a troller near Sitka to keep a lingcod for personal use because they may have to cross through the LAMP or enter it to unload. Consequently, a lingcod kept outside the LAMP but on board at these times would be illegal.

Proposal 142: no position

Proposal 143: oppose

It is expensive to buy or build mechanisms that help release non-pelagic rockfish at depth. We don't feel personal use fishermen should have to be burdened with this investment. The current regulation requiring retention of non-pelagic rockfish ensures that the stocks are conserved and not over fished.

Proposal 144: oppose

We would like to see these rockfish retained rather than wasted. These non-pelagic rockfish cannot survive to return to the bottom after being pulled to the surface. The current required retention and bag limit prevents sport fishermen from releasing dead rockfish all day. It helps conserve the rockfish stocks so they do not become depleted.

Proposal 145: support

We support this proposal so that the department can have this as regulations instead of continuing to issue emergency orders on these areas every year.

Proposal 146: support

This would give the department a better feel for the amount of subsistence use coming out of districts 12 and 14. We want the department to get this information to help influence their management. The department published *Customary and Traditional Uses of salmon and Options for Revising Amounts Reasonably Necessary for Subsistence Uses of Salmon in Districts 12 and 14, Southeast Alaska* proposing six options for establishing a separate ANS for each



district. We support the department taking ten years to determine the subsistence harvest levels. We feel ten years is appropriate due to the cycle lengths of different salmon species. Pink salmon have a two year return while Chinook salmon have a five to six year cycle.

Proposal 147: oppose

This is already in effect. Passing this proposal would be redundant.

Proposal 156: no action

Proposal 157: oppose

There is no reason to believe that chinook salmon are getting smaller. We want to see these salmon grow to legal size. Legalizing the taking of smaller Chinook salmon would increase the amount of king salmon eligible to be retained. This would affect the Pacific Salmon Treaty with Canada. Our cap could be reached sooner, increasing the amount of Chinook salmon that are caught, traumatized, and required to be released.

Proposal 173, 192, 193, 199, 200: oppose

Petersburg Vessel Owner's Association opposes these proposals that seek to reduce fishing opportunities that have traditionally been available to our fishermen. There is a very large fleet of seiners that participates in these areas proposed for closures at different times that have large investments in this fishery. Many fishermen have large boat, gear, and permit loans. Closing these waters could result in economic hardship to fishermen dependent on the salmon stocks.

These proposals would displace a lot of boats. Forcing the fleet out of such a large area would condense them to the remaining open waters. These areas may not be able to sustain the increased fishing efforts on their stocks. Icy Strait and Chatham Strait is a large corridor allowing fish to enter the inside waters of southeast from the ocean. Some years a major portion of the run arrives through this corridor.

There is no conservation issue in these areas. If there were it should be closed to everyone. Commercial fishermen are not taking fish away from the people of Angoon; they still get their personal use and subsistence fish. Our user groups truly are not in competition with each other.

The department has always done a really good job of managing the salmon stocks in these areas. They determined openings and closures in these areas in a way that prevents overfishing and conserves the stocks. They use tools such as test fisheries throughout Chatham Strait to influence their decisions. We feel it should continue to be up to the department to determine what areas are open to salmon fishing and when. They have the education, science, and experience to properly manage these salmon stocks. PVOA opposes these proposals that would reduce the department's flexibility to manage salmon.



Proposal 174: oppose

There are no conservation issues here and therefore no reason to reduce commercial fishing time in the area. If the department ever felt that overfishing could become a problem they have the ability to temporarily close this area through emergency order.

Proposal 175 and 176: oppose

We oppose these proposals because our organization is happy with the current *Enhanced Salmon Allocation Management Plan*. We do not see a need for regulatory change here.

Proposals 183, 186, 187, 190, 201, 207: support

Petersburg Vessel Owner's Association is in support of the proposals coming from Southeast Alaska Seiners and United Southeast Alaska Gillnetters. A lot of time, planning, and compromise went into these proposals and all our members are happy with them.

Proposals 182, 185, 225: Support

Our organization is in support of the proposals coming from the Joint Southeast Regional Planning Team. These proposals are presented to help the board address the sunsets occurring in 2014.

Proposal 188: oppose

This goes against the agreements between gear types in proposal 187.

Proposal 189: support

This proposal corrects an error. We support the department in correcting the regulations so that they match the management strategy currently in place regarding Hidden Falls.

Proposal 191: oppose

These issues are dealt with in proposal 190 which PVOA supports. We are therefore opposed to this proposal.

Proposal 194 and 195: oppose

This is not a conservation issue and therefore there is no reason to close these waters to anyone. Commercial fishermen are not taking fish away from the people of Pelican; they still get their personal use and subsistence fish. The department only opens this area when there is a surplus of fish to support a commercial fishery. There is no competition between the user groups in this area.

Proposal 196 and 197: oppose

It should be up to the department to set statistical areas. These are tools the department uses to define management areas and are the smallest level of a district. We need to leave setting



statistical areas up to the department so that they can implement their management plans best.

Proposal 201: oppose

PVOA is opposed to closing Basket Bay. This area is not usually open to purse seiners; however, we don't want to permanently lose the opportunity to fish there someday.

Proposal 202: oppose

Our membership feels that these regulations are clearly defined and don't need to be rewritten.

Proposal 204-205: oppose

Only the FAA can ground a plane. Planes would still fly during seine openings under the pretense of delivering parts. It is also not possible to ban communications between boats and planes. This proposal does not seem enforceable to us. Furthermore, we would like to point out that this has been proposed to the fish board in the past and failed.

Proposal 206: support

The new wording of the regulation eliminates the confusion between the lines of 15-C and 15-B.

Proposal 208: oppose

Reducing the mesh size will not reduce the number of kings caught in this area during non-king openings. It will increase the number of smaller kings caught. These are primarily hatchery kings returning to Anita Bay and do not count against the Pacific Salmon Treaty fish.

Proposal 209: no action

Proposal 210: support

This may lead to an increased pink salmon catch in both clear and muddy water because the net would be less visible to the salmon. These nets are already legal in both Cook Inlet and Puget Sound. They may also be more cost effective to our fishermen.

Proposal 224: no action

Proposal 227: oppose

This is contrary to the proposal we supported coming from the Joint Regional Planning Team. We support proposal 225, and therefore oppose 227.

Proposal 228: oppose

The proposed closure is during the peak of the season and would result in a huge loss of revenue to our trollers. We don't want our fishermen to lose this opportunity when there is no



conservation issue. Our trollers are not creating a competition for fish with the subsistence users. The department only opens commercial fisheries when there is an excess of stocks, after subsistence use, to support a fishery.

Proposal 230: oppose

We don't want to see district 15-c closed to troll beginning July 1. There is room for both gear groups to work together.

Thank you for your time and considering our comments. Petersburg Vessel Owner's Association had several long meeting to discuss these proposals and what we feel is best for the industry. Our organization will have representatives present at the meetings and we are happy to answer any questions.

Respectfully,

A handwritten signature in blue ink that reads "Megan O'Neil".

Megan O'Neil
Executive Director