AGENDA C-3
JUNE 2010

MEMORANDUM

TO: Council, SSC and AP Members

FROM: Chris Oliver
Executive Director

ESTIMATED TIME
2 HOURS

DATE: June 1, 2010

SUBJECT: Scallop Annual Catch Limits

ACTION REQUIRED

Initial Review of analysis to establish scallop ACLs

BACKGROUND

In June 2009 the Council tasked staff to begin analyses necessary to bring FMPs into compliance with new annual catch limit (ACL) and accountability measure (AM) requirements for ending overfishing of federal fisheries under the revised guidelines for National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Compliance with ACL requirements for the Alaska Scallop FMP requires substantive changes to that FMPs primarily in order to incorporate an ABC control rule into the annual specifications process as well as to address the necessary approach to manage non-target scallop stocks. The Council reviewed the preliminary review draft of this analysis in April 2010. The analysis has been revised to address SSC suggestions on the preliminary analysis. Per Council direction outside of re-estimating MSY to include discards, there was no additional modification to the current suite of alternatives and options. The initial review draft of the Scallop ACL analysis was mailed to you on May 24th. The executive summary of this analysis is attached as Item C-3(a). At this meeting the Council will take initial review of this analysis with final action scheduled for October 2010 in order to meet the statutory requirements for implementation by the start of the 2011 scallop fishing season.

Executive Summary

The Fishery Management Plan (FMP) for Alaskan Scallops governs scallop fisheries in federal waters off the State of Alaska. The FMP management unit is the U.S. exclusive economic zone (EEZ) of the Bering Sea, Aleutian Islands, and the Gulf of Alaska, and includes weathervane scallops and other scallop species not currently exploited.

There are five alternatives for setting annual catch limits (ACLs) and three options for treatment of non-target stocks contained in this analysis. The proposed action is to establish ACLs to meet the requirements of the revised Magnuson Stevens Fishery Conservation and Management Act (MSA). These ACLs are to be established based upon acceptable biological catch (ABC) control rules which account for the uncertainty in the overfishing limit (OFL) point estimate. To meet the ACL requirements, ABCs will be established under the Scallop FMP such that ACL = ABC and the guideline harvest levels (GHLs) must be established sufficiently low so as not to exceed the ACL. Determinations of GHLs are delegated to the State following the criteria in the FMP.

This action must be implemented prior to the start of the 2011 fishing year on July 1, 2011. Management actions for the Alaskan scallop fisheries must comply with applicable Federal laws and regulations.

This environmental assessment analyzes a range of alternatives to implement Annual Catch Limits (ACLs) in the Alaskan Scallop Fishery to meet regulatory requirements. Five alternatives are examined: Alternative 1: Status Quo; Alternative 2: Set ACL equal to the upper end of the Guideline Harvest Ranges (GHRs) plus estimated discard mortality; Alternative 3: Set ACL equal to 90% of the upper end of the GHR plus estimate discard mortality; Alternative 4: Set ACL equal to 75% of the upper end of the GHR plus estimated discard mortality. For Alternatives 2–4, the OFL was redefined to include estimates of discard mortality in the directed scallop fishery, the groundfish fisheries, and agency surveys. Alternatives 2–5 also include two options: establishing a statewide ACL and establishing ACLs by region. Three additional options are considered for the treatment of non-target scallop stocks. These include: option 1 – remove non-target stocks from the FMP; option 2 – move non-target scallop stocks to an ecosystem component category under the FMP (and do not establish ACLs for these stocks); and option 3 - Set ACLs for non-target scallop stocks.

The impacts of the alternatives upon scallop resources, fishery participants, habitat, marine mammals, and other groundfish resources are discussed in the analysis. Based on historical catch patterns, Alternatives 2 through 4 are unlikely to constrain the fishery when ACLs are applied statewide, but may constrain the fishery in some regions at times of high scallop abundance when region-specific ACLs are applied. To determine the relative risk of overfishing by each of the alternatives, a probability approach was employed to estimate the relative risk of exceeding the OFL under each of alternatives 2-4. This approach also considers additional, unmeasured scientific uncertainty and its relative impact on the perceived overfishing.

The requirement to account for all removals necessitates taking into account the scallop discard mortality in directed and non-directed fisheries. The combination of progressively more conservative ACLs (moving from Alternative 2 to Alternative 4), combined with providing a sufficient buffer to allow for incidental catch not to exceed the ACL, would provide additional conservation against overfishing for the scallop resource but has greater potential to constrain the scallop fishery. Alternatives 3 and 4 provide for additional conservatism by further buffering against the uncertainty in the estimation of the OFL. Alternative 5 incorporates both quantitative and qualitative measures of uncertainty in providing a buffer between the OFL and the ACL, with greater uncertainty resulting in a larger buffer. None of the alternatives are likely to impact other groundfish resources, habitat, or prohibited species.

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AGENDA C-3
Supplemental
JUNE 2010

Eric Olson, Chairman
North Pacific Fisheries Management Council
605 W. 4th Avenue, Suite 306
Anchorage, Alaska 99501-2252

RECEIVED
MAY 28 2010

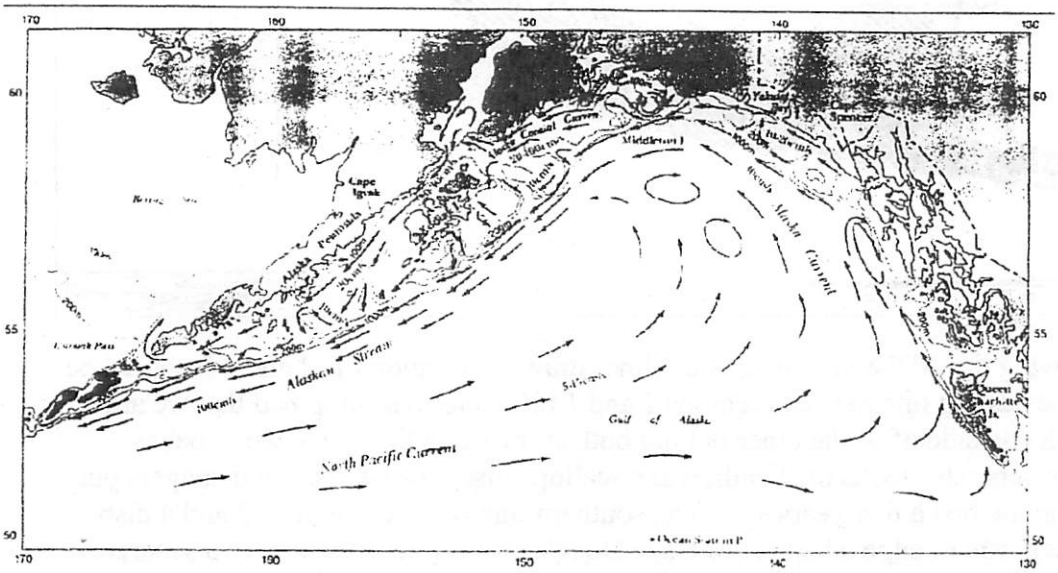
May 25, 2010
RE: Agenda item C-3, Scallop ACL

Dear Mr. Chairman
The Alaska Scallop Association (ASA) believes that the Weathervane Scallop stocks of the entire State of Alaska are of one genetic stock and most likely are one genetic stock throughout their entire range from northern California, through Oregon, Washington, British Columbia and Alaska.

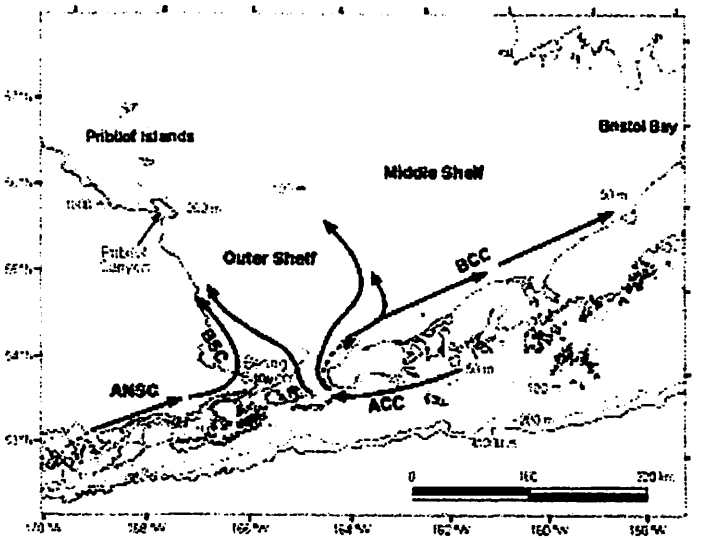
Weathervane Scallop larvae float in the water column in the spring and summer for 30 to 40 days (Turk 200) foraging on plankton. During this drift, larvae are at the whims of the existing currents.

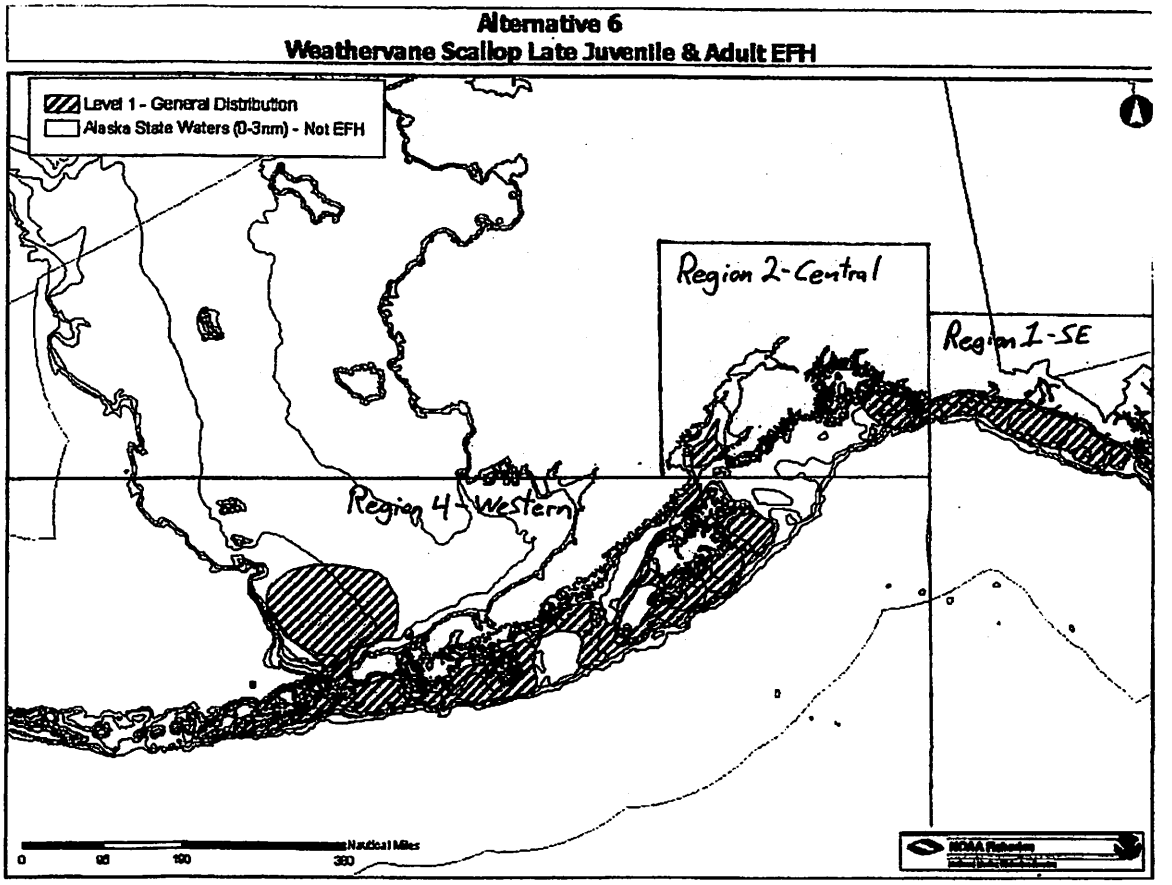
Fecundity; We could not find any studies on the number of eggs carried by female Weathervanes. The Japanese Scallop (*Patinopecten yessoensis*), is very similar to the Weathervane Scallop (*Patinopecten caurinus*). The yessoensis female is known to produce 8 to 18 million eggs, **http://www.dfo-mpo.gc.ca/aquaculture/ref/searanching-pacagemarin-eng.htm#tphp.**
Atlantic Scallops *Placopecten magellanicus* are estimated to carry 1 million to 270 million eggs (Langton *et al.* 1987) depending on scallop size and maturity.

When observing the well documented oceanographic currents coupled with the literally billions and billions of weathervane larvae floating in these currents, it is easy to see how beds and regions would be genetically linked. Obviously there is eddying and circuitous currents as well allowing beds to be partially self sustaining or larvae would always be carried downstream and never reseed the farthest up stream beds, but clearly some years depending on fluctuating tides, currents and their velocities all or much of the larvae would be carried off downstream to the next bed and beyond.

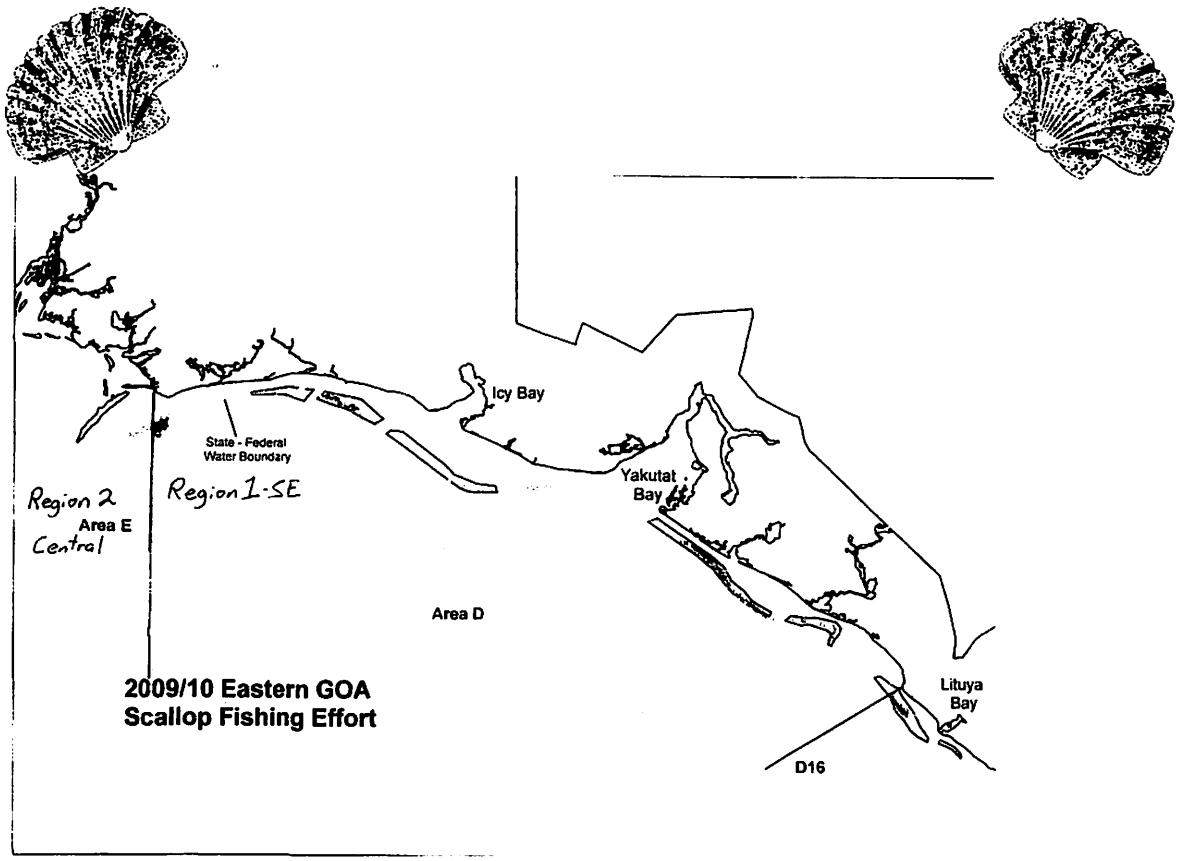


Major features of ocean circulation in the Gulf of Alaska. From Reed and Schumacher (1987),





When reviewing the ADF&G management lines drawn for regions 1, 2 and 4 it should be noted that the eastern line between regions 2 and 1 bifurcates a scallop bed that we are forced to fish one side of or the other but not both at the same time. Are we to believe these are two separate stocks of Weathervane scallops just because fishery managers put a line through the bed a few years ago? The southern line between regions 2 and 4 also separates the northern edge a bed off of Cape Douglas.... Again, are these two separate scallop stocks on either side of this **bureaucratic** line?



The Gulf of Alaska and Bering Sea larval and post larval drift in currents is well documented in other more studied North Pacific species such as Halibut and Pollock. One example is:

1989 Gilbert St-Pierre, "Resent studies of pacific halibut postlarvae in the Gulf of Alaska and Eastern Bering Sea" This quote below from St-Pierre's summary is interesting.

"The inshore edge of the Alaskan Stream and the Alaska Coastal Current are the principal forces behind the westward drift of halibut larvae in the Gulf of Alaska and the eventual transport of a large portion of them into the Bering Sea, especially by the Alaska Coastal Current through Unimak Pass. By the beginning of June, large concentrations
were found on both sides of the Alaska Peninsula and the Aleutian Islands. The largest concentrations were found in Unimak Pass, in the area north of Unimak Island in the Bering Sea, and in the waters to the south and north of the Aleutian Islands, especially in the vicinity of sea passages which connect the Gulf of Alaska and Bering Sea waters.

The evidence of interrelation between the halibut of the eastern Bering Sea and the
Gulf of Alaska is apparent and clearly shown by the data obtained during the 1986 postlarval
halibut survey. The results of the plankton survey support the hypothesis that a large portion of the halibut population found along both sides of the Aleutian Islands, including those from the nursery area in the eastern Bering Sea (southeastern flats), originate from spawning in the Gulf of Alaska."

These two charts, below illustrate how Weathervane Scallops from California to the Bering Sea could potentially be linked via larval drift and the prevailing current patterns.

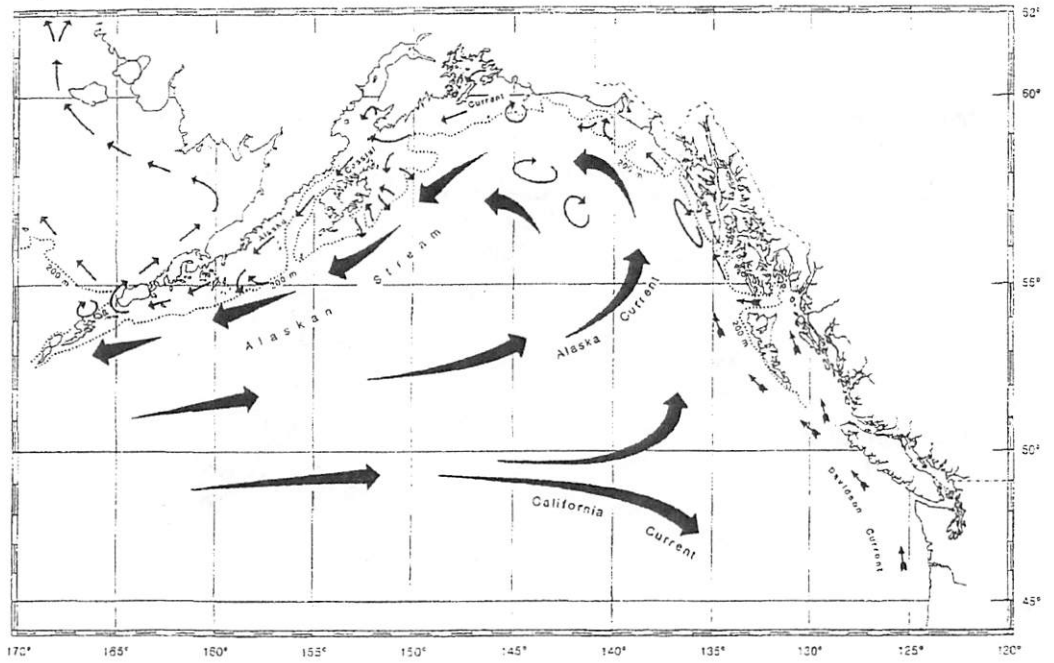


Figure 2. General circulation and current patterns in the northeast Pacific. Adapted from Thompson (1981), Schumacher and Reed (1983), and Reed and Schumacher (1986).

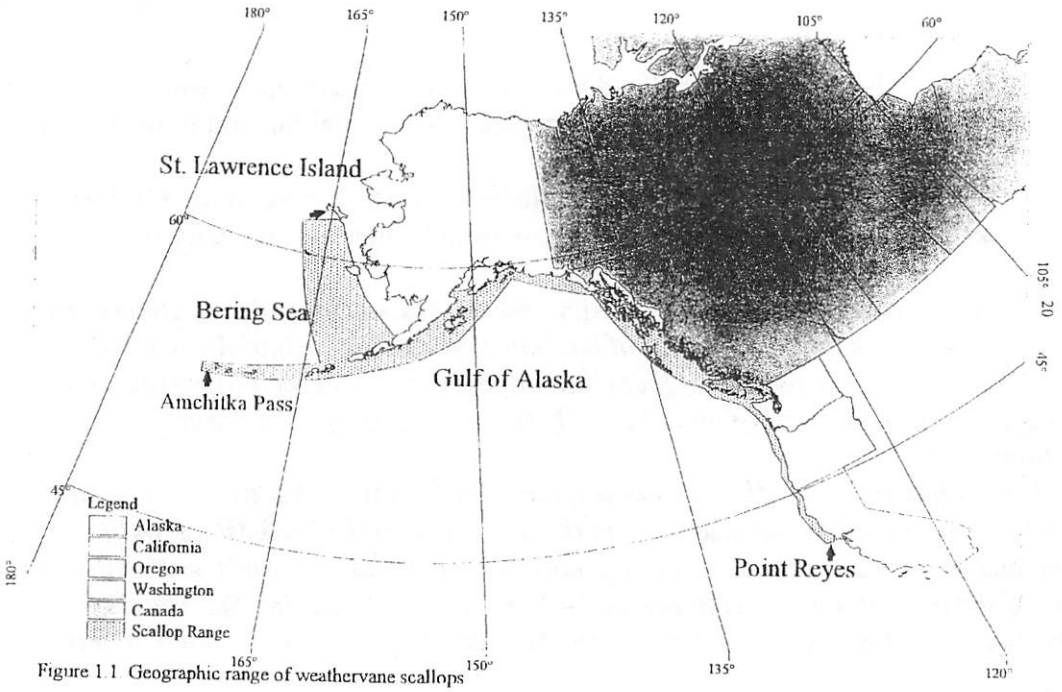


Figure 1.1 Geographic range of weathervane scallops

Alternatives 2, 3 and 4, all have two sub-options for either making Statewide ACLs or 3 separate regional ACL's. The ASA members ask the council to remove the regional option as these are not three different Scallop stocks but rather one statewide stock. When considering a species ACL we should be considering **biological** borders not **bureaucratic** borders.

Sincerely, Jim Stone, President