BSAI Groundfish Plan Team
Final Report
AFSC- Seattle, WA
September 24, 2008

Loh-Lee Low (AFSC), Chair
Mike Sigler (AFSC), vice-chair
Grant Thompson (AFSC), Special Envoy to the SSC
Jane DiCosimo (NPFMC), Coordinator
Dave Carlile (ADF&G)
Mary Furuness for Andy Smoker (AKRO)
Brenda Norcross (UAF)
Leslie Slater (USFWS)
Dave Barnard for Ivan Vining
Kerim Aydin (AFSC)
Brenda Norcross (IPHC)
Lowell Fritz (NMML)
Theresa Tsou (WDFW) absent

The BSAI Groundfish Plan Team convened on Wednesday, September 24, from 9 am to 4:30 pm. Up to 34 members of the public and AFSC attended parts of the meeting. The teams identified the following team assignments (*pending Council approval of nominees) for leading discussions and preparing the SAFE Report introduction summary section. Specific species assessment leads will be identified prior to the November 2008 Plan Team meeting.

Pollock: (EBS, AI, Bogoslof)	**Grant Thompson**, Mike Sigler, Lowell Fritz, Kerim Aydin, Loh-lee Low
Pacific cod:	**Mike Sigler**, Loh-lee Loh, Dana Hanselman*, Lowell Fritz, Leslie Slater, Kerim Aydin, Brenda Norcross
Sablefish:	**Dave Barnard***, **Dave Carlile**, Leslie Slater, Henry Cheng
Flatfishes (7):	Dave Carlile, Dave Barnard*, Brenda Norcross, Henry Cheng*
	Carlile: Greenland turbot, yellowfin
	Norcross: Rock sole, Alaska plaice, Other flatfish
	Barnard: Flathead sole
	Cheng: Arrowtooth flounder
Rockfishes (4):	Dana Hanselman*, Kerim Aydin, Henry Cheng*, Mary Furuness
	Hanselman: Pacific Ocean Perch, Other rockfish
	Aydin: Northern, and Shortraker/Rougheye
Atka mackerel:	**Lowell Fritz**, Mike Sigler, Grant Thompson
Other Species (5):	Kerim Aydin, Mary Furuness*, Jane DiCosimo, Alan Haynie*
	Aydin: sculpins and squid
	Furuness: sharks and octopus
	DiCosimo: skates

BSAI rougheye rockfish Paul Spencer summarized several studies relevant to whether BSAI rougheye rockfish complex management should be split between the Bering Sea and Aleutian Islands. The rougheye complex is composed of two species, (true) rougheye rockfish and blackspotted rockfish. Major results of these studies follow.

1) Both species' abundance is low in the Bering Sea, whereas blackspotted rockfish abundance is higher and rougheye rockfish abundance is lower in the Aleutian Islands.

2) Phenotypic differences occur between regions
   a) Size at age is larger for intermediate (10-20) ages of blackspotted rockfish in the Bering Sea compared to the Aleutian Islands
   b) Young, small fish are more abundant in the Bering Sea compared to the Aleutian Islands

3) Genotypic differences occur between regions
   a) Central Aleutian blackspotted rockfish are genetically different from eastern Aleutian blackspotted rockfish
   b) Eastern Aleutian and western Gulf of Alaska blackspotted rockfish are genetically similar
   c) Bering Sea and western Gulf of Alaska blackspotted rockfish are genetically similar
   d) The overlap implies that eastern Aleutians and Bering Sea are somewhat similar.
   e) The only clearly different sample analyzed was that spanning the eastern and central Aleutian Islands.

The Team recommends not splitting rougheye complex management between the Bering Sea and Aleutian Islands at this time. Bering Sea blackspotted rockfish appear to be part of a larger area stock that includes the western Gulf of Alaska and possibly the eastern Aleutian Islands. The only clearly different sample analyzed was that spanning the eastern and central Aleutian Islands, where abundance is greater there and presumably less susceptible to overexploitation for the population overall (though local depletion could occur). The team requested both combined and separate area assessments from the author for November.

Pollock Steve Barbeaux summarized the winter 2008 AI pollock study. The objective of this study was to investigate whether cooperative biomass assessments and surveys could be an effective way to manage fisheries at the local scales that are important to predators such as Steller sea lions. The 2008 study was composed of four parts: 1)a nighttime acoustic survey 173°-178° W Longitude on board the R/V Oscar Dyson from 16-29 February, 2) an aerial survey of Steller sea lion rookery and haulouts from 173°-179° W longitude conducted on 23-29 March, 3) Steller sea lion scat sampling of haulouts and rookeries from 173°-179° W longitude on 30 March – 9 April, and 4)a nighttime cooperative acoustic survey 174°-178° W longitude using F/V Muir Milach, 23-27 March over the same transects as R/V Oscar Dyson survey. Some data have been processed, but only preliminary biomass estimates are available at this time. We now understand that night time surveying provides a better estimate of pollock total biomass without the need to use a dead zone estimator like previous years. The acoustic dead zone may harbor over 50% of the pollock biomass during daytime and therefore we propose that all future acoustic surveys of Aleutian Islands pollock be conducted during the night. All of the data have not yet been processed and therefore it is too early for conclusions on the primary objectives of this study.

Lowell Fritz summarized 2008 Steller sea lion survey. The objective was to develop tools to manage fisheries at local scales 1) through cooperative research with industry and 2) assessing local impacts of fishing on prey availability for top trophic level consumers. Pollock has a relatively low frequency of occurrence overall in the diet of Steller sea lion in the AI (annual, broad area average is < 10%), but could be a larger part of the diet for a limited time in central Aleutian Islands near pollock spawning aggregations.

Loh-lee Low reported that the Donut Hole will remain closed to international fishing.

Jim Ianelli reported on a catch estimation workshop held in September that discussed how to incorporate uncertainty of catch-at-age into the models. This was a follow-up workshop as part of a bilateral program between Norway and the US (Alaska and NE Science Centers) designed to compare and contrast methods and approaches used in these regions. Several aspects of this work coincides well with recommendations coming from the CIE report on Aleutian Island pollock and Atka mackerel fisheries (see Joint Plan Team minutes).

Flatfish Tom Wilderbuer summarized his plans for a split sex model for yellowfin sole and northern rock sole in November 2008. The Team endorsed this approach.

BSAI skates. Olav Ormseth summarized nine changes to the BSAI skate model since last year, based on SSC recommendations. These include 1) The steepness of the Beverton-Holt stock-recruit relationship was fixed at 1.0; 2) Natural mortality rate (M) was fixed at 0.12 (compared to 0.13 in the 2007 assessment); 3) The standard deviation of log recruitment was fixed at 0.3; 4) Catch and survey length composition data were updated, and 4-cm length bins were used instead of 5-cm length bins; 5) Knife-edged age selectivity was fixed at 4 years in the survey and the trawl fishery and 6 years in the longline fishery; 6) Survey catchability (Q; estimated independently) was reduced from 0.836 to 0.81 to reflect the fact that the shelf survey does not sample the Aleutian Islands portion of the B. parmifera population; 7) Sample size (N) for length composition data was based on the number of hauls sampled, rather than the total number of length measurements; 8) Reweighting of the length composition and length-at-age data was performed so that actual and effective N are more nearly similar; and 9) The alternative model starting in 1958 was eliminated. The Plan Team endorsed the changes to the model and noted that the Council will be reviewing a proposed FMP amendment in 2009 to separate BSAI skates form the other species assemblage.

EIT Survey Taina Honkelehto, AFSC MACE, summarized the results from Summer 2008 echo integration-trawl survey (EIT) of Bering Sea walleye pollock, which was conducted June 2 to July 31 aboard the Oscar Dyson. This survey has historically been conducted by the Miller Freeman. The survey was conducted during daytime hours. Acoustic data was collected along transects spaced 20 nmi apart, from Bristol Bay to west of Cape Navarin, Russia. Eight of 31 transects were in Russian waters. Opportunistic midwater and bottom trawling targeted pollock to identify and classify acoustic backscatter. At night they made supplemental survey trawls and collected physical oceanographic samples. They also tested equipment including a lowered transducer to measure TS of an acoustic buoy, and with a multibeam echosounder. They also trawled on macro-zooplankton and micro-nekton layers (principally euphausiids)—for a large, multi-institutional project, the Bering Sea Integrated Ecosystem Research Program (BSIERP). They also conducted a series of paired codend experiments to examine effects of codend mesh size on catch composition. Summary results follow: 1) EBS summer shelf waters were cold –3rd cold year in a row (2006-2008); 2) 86% of midwater pollock biomass was west of 170◦W in the US (higher % than 2007 (81%); numerically dominated by age 2s); 3) 2008 US EEZ midwater pollock biomass was 0.94 M mt (~½ of 2007 biomass (1.8 M mt)); 4) 2008 Russia midwater biomass was 0.03 M mt compared to 2007 estimate of 0.10 million t); and 5) Proportionally more EIT survey pollock biomass has declined in midwater than near bottom, compared w/earlier years.

BSAI Pacific cod split Olav Ormseth summarized eleven studies relevant to whether BSAI cod management should be split between the Bering Sea and Aleutian Islands. Major results of these studies are that: (1) cod differ genetically in the North Pacific and the difference grows steadily greater the farther the cod are apart (genetic isolation by distance); (2) cod are a keystone species in the Aleutian Islands region; (3) cod grow faster in the Aleutian Islands; (4) large cod are more abundant in the Aleutian Islands region than in the Bering Sea; (5) cod spawning occurs in distinct, relatively small areas; and (6) adult and juvenile cod commonly move between the Gulf of Alaska and Bering Sea but very little between either of these two areas and the Aleutian Islands. A life history consistent with these results is as follows. As adults, cod move between the Gulf of Alaska and Bering Sea, but very little between these two areas and the Aleutian Islands. Ocean currents from the Gulf of Alaska likely supply larvae to the Aleutian Islands, Bering Sea and other downstream areas. The Aleutian Islands west of Samalga Pass is an oceanic region different from regions to the north and east and is a region where cod are a keystone species. Given that Pacific cod exhibit genetic isolation by distance, recovery from local depletion may be slow. This working hypothesis for cod life history implies that precautionary management would spread harvests among management areas.