Third Annual Surveillance Report

Bering Sea / Aleutian Islands Flatfish Fisheries:

Alaska plaice
Arrowtooth flounder
Flathead sole
Kamchatka flounder
Northern rock sole
Yellowfin sole

Certificate Nos.:

Alaska plaice	MML-F-047
Arrowtooth flounder	MML-F-048
Flathead sole	MML-F-050
Kamchatka flounder	MML-F-148
Northern rock sole	MML-F-051
Yellowfin sole	MML-F-052

Intertek Moody Marine

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1.0 GENERAL INFORMATION

Scope against which the surveillance is undertaken: MSC Principles and Criteria for Sustainable Fishing as applied to the Bering Sea/Aleutian Islands Flatfish Trawl Fishery

Species: Alaska plaice (*Pleuronectes quadrituberculatus*)
Arrowtooth flounder (*Atheresthes stomias*)
Flathead sole (*Hippoglossoides elassodon*)
Kamchatka flounder (*Atheresthes evermanni*)
Northern rock sole (*Lepidopsetta polyxystra*, also known as *Pleuronectes bilineatus*)
Yellowfin sole (*Limanda aspera*, also known as *Pleuronectes asper*)

Area: Bering Sea / Aleutian Islands (BSAI)

Method of capture: Trawl

Date of Surveillance Visit:	**13th – 15th May 2013**			
Date of Initial Certification	**22nd January 2010** **(N.B. Kamchatka flounder: 5th March 2013)**		**Certificate Ref:** Alaska plaice MML-F-047 Arrowtooth flounder MML-F-048 Flathead sole MML-F-050 Kamchatka flounder MML-F-148 Northern rock sole MML-F-051 Yellowfin sole MML-F-052	
Surveillance stage	**1st**	**2nd**	**3rd**	**4th**
Surveillance team:	**Lead Assessor: Dr. Rob Blyth-Skyrme** **Assessor(s): Dr. Jake Rice, Dr. Don Bowen, Dr. Susan Hanna**			
Company Name: **Address:**	**Alaska Seafood Cooperative** 4241 21st Ave West Suite 200 Seattle Washington, 98199 United States of America			
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2.0 RESULTS, CONCLUSIONS AND RECOMMENDATIONS

This report contains the findings of the third surveillance cycle in relation to this fishery.

The client's response to the Conditions of Certification was set out in an Action Plan, which was appended to the final certification report. Progress in taking action was examined as a part of this third surveillance. For each condition, the report sets out progress to date, which has now been evaluated by the Intertek Moody Marine audit team ('Observations' and 'Conclusion') against the commitments made in the Action Plan. This assessment includes a re-evaluation of the scoring allocated to the relevant Performance Indicators in the original MSC assessment. Where the requirements of a condition are met, the Performance Indicators are re-scored and if the score is 80 or more, then the condition is closed.

It should be noted that after the fishery was certified, the MSC introduced the Certification Requirements and Guidance to Certification requirements. These outline the surveillance process and criteria for determining the level of surveillance audit that the fishery requires. These are set out in Annex 2 of this report.

List of acronyms used:

ABC	Acceptable biological catch
ADF&G	Alaska Department of Fish and Game
AGDB	Alaska Groundfish Data Bank
AKSC	Alaska Seafood Cooperative
AFDF	Alaska Fisheries Development Foundation
AFSC	Alaska Fisheries Science Center
APA	At-Sea Processors Association
BSAI	Bering Sea / Aleutian Islands
CV	Catcher vessel
CP	Catcher/processor (vessel)
EBS	Eastern Bering Sea
GOA	Gulf of Alaska
GPS	Global positioning system
IMM	Intertek Moody Marine
LOA	Length overall
MSC	Marine Stewardship Council
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPFMC	North Pacific Fishery Management Council
NPRB	North Pacific Research Board
OFL	Overfishing limit
TAC	Total allowable catch
UoC	Unit of Certification

Information Sources

Meetings attended:

NB 1: All stakeholders from the full assessment were contacted prior to the surveillance audit taking place, but no stakeholders contacted IMM to request a meeting or teleconference with the assessment team.

NB 2: The site visit for the audits of the MSC-certified flatfish, pollock and Pacific cod fisheries in the BSAI and GOA were combined. Hence, the audit meetings included specialists who covered all three fisheries and their associated species as well as other components of the BSAI and GOA ecosystem.

Date and Place	Name	Affiliation
13th May, 2013 APA Office, Seattle	Rob Blyth-Skyrme Jake Rice Don Bowen Jason Anderson	Intertek Moody Marine (IMM) IMM IMM Alaska Seafood Cooperative (AKSC)
14th May, 2013, AFSC Office, Seattle	Rob Blyth-Skyrme Jake Rice Don Bowen Jason Anderson James Browning Dave Gaudet Edward Richardson Amanda Stern-Pilot Dan Averill Diana Stram Sam Cunningham Leslie Cornick Sandra Lowe Jim Ianelli Anne Hollowed Grant Thompson Shannon Fitzgerald Martin Dorn Thomas Wildebuer Pat Livingston Ingrid Spies Liz Chilton Martin Loefflad Steve Barbeaux William Stockhausen Steve Ignell Teresa A'mar	Intertek Moody Marine (IMM) IMM IMM Alaska Seafood Cooperative (AKSC) Alaska Fisheries Development Foundation (AFDF) AFDF At-Sea Processors Association (APA) APA Marie Stewardship Council (observer) North Pacific Fishery Management Council (NPFMC) (by phone) NPFMC (by phone) Alaska Pacific University Alaska Fisheries Science Center (AFSC) AFSC AFSC AFSC AFSC (by phone) AFSC AFSC AFSC AFSC AFSC AFSC AFSC AFSC AFSC AFSC

Reports and other Documents

- NPFMC (2012). Bering Sea and Aleutian Islands stock assessment and fishery evaluation report. North Pacific Fishery Management Council, Anchorage, Alaska. December 2012.

Standards and Guidelines used:

1. MSC Principles and Criteria
2. MSC Certification Requirements v1.3

Stock status and Catch Data	
Update on Stock Status	NB: Information in this section is taken primarily from the 2012 BSAI stock assessment and fisheries evaluation (SAFE) reports for 2013 (NPFMC 2012, available here: http://www.afsc.noaa.gov/REFM/stocks/assessments.htm). **Alaska plaice** The Alaska plaice resource continues to be estimated at a high and stable level with very light exploitation. The 2012 survey biomass was 581,900 t, a 19% increase over 2011 and estimates of both population sizes and trends are consistent with

estimates from resource assessment surveys conducted since 1985. The combined results of the eastern Bering Sea shelf survey and the northern Bering Sea survey indicate that the percent of Alaska plaice biomass in the northern Bering Sea has been variable, reaching 38% in 2010 (with 62% of the plaice biomass in the southerm BS), but decreasing slightly since. The stock is expected to remain at a high level in the near future due to the recent recruitment of the strong 2002 year class. Exploitation occurs primarily as bycatch in the yellowfin sole fishery and has averaged only 1% from 1975-2012.

The assessment methodology uses an age-structured model unchanged from the previous assessment. Female spawning biomass decreased from 1985 to 1998, and has been relatively stable since then. The shelf survey biomass has been fairly steady since the mid-1980s. The 2001-2002 year classes appear very strong, and the 2004-2005 year classes are estimated to be slightly above average. If recent average fishing mortality rates continue into the future, spawning biomass is projected to be stable or increasing slightly for the next few years.

Reliable estimates of $B_{40\%}$, $F_{40\%}$, and $F_{35\%}$ exist for this stock, qualifying it for management under Tier 3a. The updated point estimates are $B_{40\%}$= 152,000 t, $F_{40\%}$ = 0.16, and $F_{35\%}$ = 0.19. Given that the projected 2012 spawning biomass of 261,000 t exceeds $B_{40\%}$, the acceptable biological catch (ABC) and overfishing limit (OFL) recommendations for 2013 were calculated under sub-tier "a" of Tier 3. Projected harvesting at the $F_{40\%}$ level gives a 2013 ABC of 55,200 t and a 2014 ABC of 55,800 t. The OFL was determined from the Tier 3a formula, which gives a 2013 value of 67,000 t and a 2014 value of 60,200 t.

Model projections indicate that this species is neither overfished nor approaching an overfished condition.

Arrowtooth flounder

Prior to 2011, arrowtooth flounder was assessed together with Kamchatka flounder as a combined *Atheresthes* stock. Since 2011, Kamchatka flounder has been assessed separately from arrowtooth flounder and both species receive individual ABCs and total allowable catches (TACs). The Kamchatka flounder fishery was subsequently separately assessed against the MSC Standard, and was certified as sustainable on March 5th, 2013. More information on the Kamchatka flounder fishery, as part of the Alaska Bering Sea / Aleutian Islands flatfish fishery, is therefore provided below.

The 2012 Bering Sea shelf survey, combined with the 2010 slope and Aleutian Islands surveys, indicate that the arrowtooth flounder population continues at a high level. Good recruitment from seven of the ten years from 1998-2007 combined with light exploitation should keep the abundance level high.

New input data for the this year's assessment include:

- Biomass estimates and size compositions from the 2012 EBS shelf and slope surveys and the 2012 AI survey.
- Fishery size composition for 2010 and 2011.
- Updated 2011 and preliminary 2012 catch.

The maturity schedule used in the assessment model is undergoing revision, but the Plan Team did not consider the revisions ready for implementation. The 2011 stock assessment model projected a 2013 age 1+ biomass of 1,130,000 t, compared to an estimate of 1,020,000 t from this year's assessment. The corresponding values for 2013 spawning biomass are 812,000 t (last year's assessment) and 638,000 t (this year's assessment). These differences represent a rescaling of absolute values

between the two assessments, however both assessments show a long-term increasing trend in spawning biomass that is expected to peak in 2013. The 1997-2006 year classes are all above average in the assessments for 2012 and 2013.

Because the SSC has determined that reliable estimates of B40%, F40%, and F35% exist for this stock, arrowtooth flounder was assessed for management under Tier 3. The point estimates of B40%, F40%, and F35% from the 2011 assessment were 281,000 t, 0.22, and 0.27, respectively. From the 2012 assessment, they are 246,000 t, 0.17, and 0.21, respectively. The projected 2013 spawning biomass is far above B40% in both the 2011 and 2012 assessments, so ABC and OFL recommendations for 2013 were calculated under sub-tier "a" of Tier 3. The assessment authors recommended to set FABC at the F40% level, which is the maximum permissible level under Tier 3a. Projected harvesting at the F40% level in this year's assessment gives 2013 and 2014 ABCs of 111,000 t and 112,000 t, respectively. However, because the Plan Team did not accept the new maturity schedule in this year's assessment, the Team recommended rolling over the current 2013 ABC of 152,000 t (set last year) for 2013 and 2014. Similarly, the 2013 and 2014 OFLs from this year's assessment are 132,000 t and 134,000 t, respectively, but the Team recommended rolling over the current 2013 OFL of 186,000 t (set last year) for 2013 and 2014. With recent TAC at 25,000 and catches below that level, these differences in assessment models do not result in any increase in risk to the stock from fishing.

Arrowtooth flounder is a lightly exploited stock in the BSAI. In contrast to the Gulf of Alaska, arrowtooth flounder is not at the top of the food chain on the EBS shelf. Arrowtooth flounder in the EBS is an occasional prey in the diets of groundfish, being eaten by Pacific cod, walleye pollock, Alaska skates, and sleeper sharks. However, given the large biomass of these species in the EBS overall, these occasionally recorded predation events do not translate into considerable total mortality for the arrowtooth flounder population in the EBS ecosystem.

Under either last year's or this year's assessment, arrowtooth flounder is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition.

Flathead sole

The flathead sole assessment also includes Bering flounder, a smaller, less abundant species with a more northern distribution relative to flathead sole. The 2012 shelf trawl biomass estimate decreased 35% from 2011 to 2012. Areas of high abundance for both stocks are very similar for the past 30 years. The 2007 year class is estimated to be above average, following 3 years of poor recruitment. The assessment employs an age-structured stock assessment model.

New data in this year's assessment include:

- Updated 2011 catch and preliminary 2012 catch;
- Sex-specific size compositions from the 2012 fishery and EBS shelf survey , and updated 2011 fishery size compositions;
- Sex-specific age compositions from the 2010 and 2011 fisheries and the 2011 EBS shelf survey;
- The biomass estimate from the 2012 EBS shelf survey;
- The mean bottom temperature from the 2012 EBS shelf survey.

The preferred model is identical to that selected in last year's assessment. The model estimated age 3+ biomass increased from a low of 119,000 t in 1977 to a peak of 958,000 t in 1994, declined to 780,000 t in 2003, rose briefly to 804,000 t in 2006,

and subsequently declined again to 727,000 t in 2012. The 2012 estimated biomass is the lowest total biomass since 1987. Estimated female spawning biomass followed a similar trend, although the peak value (318,000 t) occurred in 1997 rather than 1994. Spawning biomass in 2009 (233,000 t) was the lowest since 1991, but has since rebounded somewhat (243,000 t in 2012). These changes in stock biomass are primarily a function of recruitment, as fishing pressure has been relatively light. The 2004-2008 year classes have all been weak, but the 2009 year class may be strong.

The SSC has determined that reliable estimates of *B40%*, *F40%*, and *F35%* exist for this stock, thereby qualifying flathead sole for management under Tier 3. The current values of these reference points are *B40%*=128,000 t, *F40%*=0.29, and *F35%*=0.35. Because projected spawning biomass for 2013 (245,000 t) is above *B40%*, flathead sole is in sub-tier "a" of Tier 3. The assessment authors recommend setting ABCs for 2013 and 2014 at the maximum permissible values under Tier 3a, which are 67,900 t and 66,700 t, respectively. The 2013 and 2014 OFLs under Tier 3a are 81,500 t and 80,100 t, respectively. Recent catches have been between 11,000 and 14,000 t, well below the TAC and less than a quarter of recent OFLs.

Flathead sole is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition.

Kamchatka flounder

Until 2011, Kamchatka flounder had been a constituent of the *Atheresthes* species management complex, of which arrowtooth flounder had the dominant biomass, with the complex's ABC being based upon arrowtooth flounder productivity and stock status. Due to the emergence of a targeted fishery on Kamchatka flounder, it is now managed as a single species in the BSAI. After a shortened MSC assessment process, the BSAI Kamchatka flounder fishery was certified in March 2013.

The 2012 stock assessment is the third analysis of stock status and harvest recommendation for Kamchatka flounder as a single species. The increased harvest is the result of a recently developed market for Kamchatka flounder. The 2010 estimated catch of Kamchatka flounder was 21,153 t, taken primarily in area 514 and to a lesser extent in area 518. The 2011 and 2012 catch were similar at 9,935 t and 9,466 t, respectively (through October 20,2012) The 2012 catch is 51% of the ABC and 38% of the OFL, and was split evenly between the Aleutian Islands (55%) and the Bering Sea slope (45%).

New input data for this year's assessment include:

- Trawl survey biomass estimates from the 2012 Bering Sea shelf and slope and Aleutian Islands surveys.

The 2012 assessment is tier 5. A tier 3 model has been reviewed by the Plan Team and the SSC; both groups suggested changes, and asked to see the model again during the 2013 assessment cycle.

Reliable estimates of Kamchatka flounder became available in 1991 and average 1991-1994 biomass was estimated at 45,500 t on the Bering Sea shelf. During the following 11 years the biomass was estimated at a lower level (26,800 t average) before increasing to high and stable levels the past 7 years (53,200 t average). On the continental shelf they are usually found in highest concentrations at depths greater than 200 meters around the Pribilof Islands and also in the large shelf area west of St. Matthew Island. Trends of abundance from the slope and Aleutian Islands surveys also indicate a resource increase. Kamchatka flounder are common in the deeper waters of the Aleutian Islands and the eastern Bering Sea slopes. The

2012 estimate includes survey estimates of biomass from the Bering Sea shelf and slope and the Aleutian Islands and totals 108,838 t, a decrease of 13% from 2011 estimates, but still at a level higher than during the 1990s and early 2000s.

For 2012, the natural mortality was evaluated using four separate methods, arriving at a new value of M = 0.13 (estimates from the previous assessment were M = .20). The 2012 stock assessment model resulted in a 2013 biomass projection of 108,800 t, compared to 125,200 t estimated from last year's assessment. The 2013 OFL and ABC is each recommended at 16,300 t and 12,200 t, while last year's assessment produced OFL and ABC estimates of 24,800 and 18,600 respectively.

Kamchatka flounder is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition.

Northern rock sole

The northern rock sole stock is currently at a high level due to strong recruitment from the 2001, 2002 and 2003 year classes which are now contributing to the mature population biomass. The 2012 bottom trawl survey resulted in a biomass estimate of 2.15 million t, 3% lower than the 2011 point estimate. The northern rock sole harvest results primarily from a high-value roe fishery conducted in February and March which usually takes only a small portion of the ABC because it is constrained by catch limits and market conditions.

The 2012 stock assessment model indicates that the stock declined in the late 1990s and early 2000s due to poor recruitment during the 1990s but is now projected to increase in the near future due to the recent strong recruitment. Biomass is currently estimated at over twice the B_{MSY} level.

New data for the 2012 analysis include:

- 2011 fishery age composition;
- 2011 survey age composition
- 2012 trawl survey biomass point estimate and standard error
- Updated fishery discards through 2011
- Fishery catch and discards projected through the end of 2012.

The 2012 assessment model allows for the input of sex-specific estimates of fishery and survey age composition and weight-at-age; provides sex-specific estimates of population numbers, fishing mortality, selectivity, fishery and survey age composition; and allows for the estimation of sex-specific natural mortality and catchability. It also features the inclusion of sex-specific estimates of time varying fishery selectivity.

The stock assessment model estimates a 2013 age 6+ biomass estimate of 1,470,000 t. This is 20% less than the 2013 value projected in last year's assessment. Spawning biomass has been increasing since 2009. If harvest rates remain close to the recent average, northern rock sole stock is expected to continue increasing for the next few years because of recruitment from the 2000-2005 year classes, all of which were stronger than any year class spawned between 1991 and 1999.

The SSC has determined that northern rock sole qualifies for management under Tier 1. Spawning biomass for 2013 is projected to be 264% of B_{MSY}, placing northern rock sole in sub-tier "a" of Tier 1. In some past years, one difficulty with applying the Tier 1 formulae to rock sole was that the harmonic and arithmetic means of the F_{MSY} distribution were extremely close, resulting in little buffer between recommendations of ABC and OFL. This closeness resulted from estimates of F_{MSY} that were highly certain. The use of time-varying fishery selectivity, first

instituted in the 2010 assessment, increased the buffer between ABC and OFL from a little over 1 percent in the 2009 assessment to >10 percent in this year's assessment.

The Tier 1 2013 ABC harvest recommendation is 214,400 t (FABC = 0.15) and the 2013 OFL is 240,600 t (FOFL = 0.16). The 2014 ABC and OFL values are 203,800 t and 240,600 t, respectively. This is a stable fishery that lightly exploits the stock because it is constrained by the BSAI optimum yield limit. Usually the fishery only takes a small portion of the northern rock sole ABC (the average catch/biomass ratio is about 4 percent).

Northern rock sole is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition.

Yellowfin sole

The 2012 Eastern Bering Sea (EBS) bottom trawl survey resulted in a yellowfin sole biomass estimate of 1.95 million t, compared to the 2011 survey biomass of 2.4 million t (a decrease of 19 percent). The stock assessment model indicates that yellowfin sole have slowly declined over the past twenty years, although they are still at a fairly high level (53% above $B_{MSY)}$. A run of 12 consecutive year-classes in the 1960s and early 1970s were well above median for the 45 year time series, and built the stock to high levels. However, between 1980 and 2000, 14 of the 20 year-classes were below median, with year class strengths in the 2000s somewhat stronger again. The 2003 year class appears to be as strong as any observed since 1983 and should now be contributing to female spawners. The 2012 yellowfin sole catch of 147,000 t is the largest of any U.S. flatfish fishery and yet its five-year average exploitation rate has been only 6% (consistently less than the ABC).

New data for this year's assessment include:

- 2011 fishery and survey age compositions
- 2012 trawl survey biomass point estimate and standard error
- Estimates of the discarded and retained portions of the 2011 catch
- Estimate of total catch through the end of 2012.

The current assessment model allows for the input of sex-specific estimates of fishery and survey age composition and weight-at-age; provides sex-specific estimates of population numbers, fishing mortality, selectivity, fishery and survey age composition; and allows for the estimation of sex-specific natural mortality and catchability. It also features the inclusion of sex-specific estimates of time varying fishery selectivity.

The projected female spawning biomass estimate for 2013 is 582,000 t. Projected spawning biomass for 2013 and beyond suggests a levelling off of the generally monotonic decline in spawning biomass that has prevailed since 1994. An upward trend in the population may be expected due to high recruitment from the 2003 year class.

The SSC has determined that reliable estimates of B_{MSY} and the probability density function for F_{MSY} exist for this stock. Accordingly, yellowfin sole qualify for management under Tier 1. The estimate of B_{MSY} from the present assessment is 353,000 t. Similar to the approach used in recent years, the 1978-2006 stock-recruitment data were used in the latest assessment to determine the Tier 1 harvest recommendation. This provided a maximum permissible ABC fishing mortality rate (the harmonic mean of the *FMSY* harvest ratio) of 0.11. The current value of the OFL fishing mortality rate (the arithmetic mean of the *FMSY* ratio) is 0.12. The product of the maximum permissible ABC fishing mortality rate and the geometric

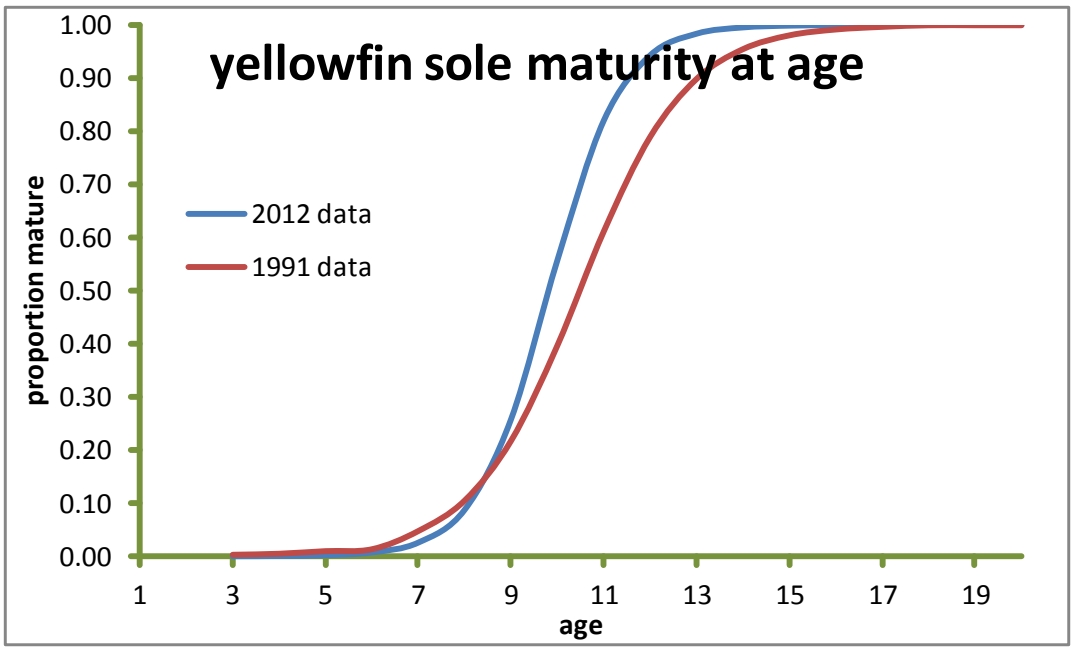
	mean of the 2013 biomass estimate produces the assessment author and Plan Team recommendations for the 2013 ABC of 206,000 t, and the corresponding product using the OFL harvest ratio produces the 2013 OFL of 220,000 t. For 2014, the corresponding quantities are 206,000 t and 219,000 t, respectively. Recent catches have been 60-75% of those values. ***Yellowfin sole is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition.*** As in previous years, this year's assessment contains an ecosystem feature that represents catchability of the EBS shelf trawl survey as an exponential function of average annual bottom temperature.
Total TAC in most recent fishing year (2012)	**Alaska plaice:** 24,000 t **Arrowtooth flounder:** 25,000 t **Flathead sole:** 34,134 t **Kamchatka flounder:** 15,045 t **Northern rock sole:** 87,000 t **Yellowfin sole:** 202,000 t
Unit of Certification share of TAC	**Alaska plaice:** 24,000 t **Arrowtooth flounder:** 25,000 t **Flathead sole:** 34,134 t **Kamchatka flounder:** 15,045 t **Northern rock sole:** 87,000 t **Yellowfin sole:** 202,000 t
Client share of TAC	**Alaska plaice:** 24,000 t **Arrowtooth flounder:** 25,000 t **Flathead sole:** 34,134 t **Kamchatka flounder:** 15,045 t **Northern rock sole:** 87,000 t **Yellowfin sole:** 202,000 t
Green Weight[1] of catch taken by client group	**Alaska plaice:** Most recent calendar year (2012): 16,611 t Previous year (2011): 23,656 t **Arrowtooth flounder:** Most recent calendar year (2012): 22,722 t Previous year (2011): 20,616 t **Flathead sole:** Most recent calendar year (2012): 11,386 t Previous year (2011): 13,556 t **Kamchatka flounder:** Most recent calendar year (2012): 9,665 t Previous year (2011): N/A (catch not separated from arrowtooth flounder total)

[1] The weight of a catch prior to processing

	Northern rock sole: Most recent calendar year (2012): 76,099 t Previous year (2011): 60,632 t **Yellowfin sole:** Most recent calendar year (2012):147,183 t Previous year (2011): 151,164 t

Condition 1	**For all BSAI flatfish species other than Kamchatka flounder.**
PI	**1.3.1.2:** Does information indicate any changes in structure that would alter reproductive capacity?
SG 60	Changes in stock structure have been detected but there is no evidence of negative effect on recruitment of the stock. Or potentially adverse changes in structure are identified and remedial measures are in the process of implementation over defined timeframes.
SG 80	Evidence exists that the fishery has not caused changes in stock structure that would affect recruitment. Or potentially adverse changes in structure are clearly identified and effective remedial measures are in place.
SG 100	Data strongly indicate a robust age, sex and genetic structure in the stock, such as would maintain reproductive capacity.
Score	75
Rationale	**BSAI Alaska plaice, arrowtooth flounder, flathead sole:** Baseline and subsequent routine stock structure analyses have not been conducted for these species that would permit structural change to be observed. Any changes in growth within part or all of the area may affect reproductive capacity; however, no temporal change in growth has been reported to date. Also, although seasonal selectivities are fitted, they are treated as constant over the period of the assessment model suggesting a fairly stable size/age structure in terms of proportions at age. While biomass and recruitment trends are positive, the stock-recruitment relationship is not well defined (low contrasts in data). The score would have been higher if there was an evaluation to show that the fishery had no harmful effects on stock structure in relation to reproductive capacity. **BSAI northern rock sole, yellowfin sole:** Baseline and subsequent routine stock structure analyses have not been conducted for these species that would permit structural change to be observed. Any changes in growth within part or all of the area may affect reproductive capacity; however, no temporal change in growth has been reported to date. Also, although seasonal selectivities are fitted, they are treated as constant over the period of the assessment model suggesting a fairly stable size/age structure in terms of proportions at age. The stock-recruitment estimate was considered to be adequate for a Tier 1 a assessment (see text) The score would have been higher if there was an evaluation to show that the fishery had no harmful effects on stock structure in relation to reproductive capacity.

	Condition 1: The client is required to provide evidence of the affect of the fishery on stock structure and whether this has had an adverse affect on recruitment. It is required that this part of the Condition is met by the second annual surveillance audit. If the evidence suggests recruitment has been adversely affected remedial measures must be implemented by year four of the certification. In order to achieve this outcome it is recommended that the client: a) Evaluates the evidence of change in the stock structure in relation to reproductive capacity and relate this to the activities of the fishery. If there is evidence of a potentially damaging change in stock structure caused or assumed to be caused by the fishery, appropriate remedial measures should be defined and implemented by year four of the certification.
Client Action Plan	We have engaged in extensive discussions with stock assessment scientists at the AFSC and they have agreed to evaluate the stock structure of the Bering Sea flatfish species proposed for certification in relation to reproductive capacity and then relate this to the activities of the fishery. Their approach for this analysis is as follows: Using existing data and within the timeline specified in the above Condition, AFSC will examine several indices of reproductive capacity for the Bering Sea flatfish stocks proposed for certification. These are: 1) Fishery selectivity and age-at- first-capture to examine the fraction of the stock that has an opportunity to spawn before being harvested; 2) The relative degree to which fishing takes place on spawning fish for each flatfish target fishery; 3) Where data are available, age composition of stocks to evaluate the percentage of each stock that is comprised of fish of 20+ years; and 4) The degree to which the exploitation rate of each flatfish species is estimated to be over or under the F 50% (a fishing rate that is generally accepted to be conservative for North Pacific sub-Arctic fishes). AKSC and AFSC expect that these indices will provide much of the necessary information to meet the Condition. For stocks where examination of these indices may not be conclusive, NMFS has agreed to consider implementing special projects for gonad collections for reproductive studies. Recognizing that this is an ambitious undertaking, NMFS prefers to prioritize flatfish species of the highest commercial and management interest (i.e. where exploitation rates are also likely to be the highest). NMFS will also consider a system of rotating collections to cover the other species during the five year time frame. In this manner, we agree with NMFS that it is reasonable to complete studies on the highest priority species and make significant progress on the other species.
Conclusion from 1st audit	The review team is satisfied that this plan will allow the Condition to be closed for BSAI flatfish in 2012, if the planned analyses are completed and the results support adequate age-specific productivity of the ages currently well represented in the mature biomass. Progress is considered to be on target with respect to this Condition.
Conclusion from 2nd audit	Progress is fully satisfactory on this Condition, and appears to be ahead of schedule. If all the histological analyses and subsequent analyses (fecundity at age X, maturation at age X, numbers at age) are available in a report before the 2013 audit, it is highly likely that this Condition can be closed at that time.

Client Progress for 3rd Audit	In 2012 and 2013, the AFSC collaborated with the AKSC to collect the samples necessary to conduct this work. Activities were as follows. In March 2012, the AKSC hired a sea sampler (former NMFS-trained observer) who was deployed on one of the Co-op's catcher processor vessels harvesting flatfish on the eastern Bering Sea shelf. This 2012 work successfully obtained the target number of collections (5 per each length grouping in centimeters using an opportunistic sampling approach) for the typical shelf flatfish species where AFSC needed specimens (yellowfin sole, northern rocksole, Alaska plaice, flathead sole). In April 2013, the Co-op provided a berth and working facilities on another catcher processor to enable an AFSC scientist to collect flatfish ovaries for the remaining flatfish species (arrowtooth flounder and Kamchatka flounder) that are mainly harvested on deeper water flatfish fishing trips. This work was originally planned for 2012 but the arrowtooth/Kamchatka fishery closed unexpectedly upon attainment of the TAC, prior to the scientist's scheduled availability. The 2013 fieldwork did, however, successfully collect the target number of collections per length category. With all specimen collections completed for the Bering Sea flatfish species, the status of analysis of Bering Sea specimens is as follows. Flatfish maturity schedules are determined by a histological examination of the collected ovaries for the Bering Sea flatfish. Given federal budget cuts, NOAA has increasingly had to narrow its focus to core activities and this affects what it can deliver in terms of new projects stemming from MSC certification conditions. Fortunately, analysis of Bering Sea specimens has received funding provided by a North Pacific Research Board (NPRB) grant. With this funding, analysis of specimens from the Bering Sea is well underway. Histological examination of yellowfin sole ovaries collected in the past year has now been completed. Interestingly, AFSC's histological work on yellowfin sole indicates that the age at maturity for this species has remained similar to past values but with a shift toward younger spawning at about age 9. Figure 1 below illustrates this shift.  Figure 1: Yellowfin sole maturity at age. Source: Alaska Fisheries Science Center, 2013. Additionally, maturity collections and analyses for arrowtooth flounder and Kamchatka

	flounder have also recently been completed and are included in the latest SAFE documents. Histological examinations for Alaska plaice and flathead sole should be completed this summer (2013).
Observations for 3rd audit	A fishery may impair the reproductive potential of a fish population in two main ways: 1. direct depletion of spawning biomass to a level where recruitment is impaired; 2. elimination of geographic spawning components of the stock, and/or elimination of older age groups so the spawning biomass comprises only young and recently mature spawners (which often produce fewer eggs of lower quality than do older and larger females). The biomass of all certified Alaska flatfish stocks considered here is well above B_{MSY}, and hence there is no evidence of serious depletion of spawning biomass. The survey time series shows some year to year changes in distribution of the various flatfish stocks, but such variation is normal in most fish stocks in mid to high latitudes, and generally is a response to year to year changes in oceanographic conditions. In each yearly meeting of the surveillance team with AFSC experts, survey data are reviewed, and at no time have distributional anomalies unrelated to oceanographic variation been found. There is certainly no evidence that the distributions of any of the BSAI flatfish stocks are becoming fragmented or that populations are no longer present in parts of their historical ranges. With regard to changing the age composition of the spawning biomass, there is indeed a small reduction in the proportion of the spawning biomass comprising the oldest females. However, this a normal and unavoidable outcome of fishing any population – fishing does increase total mortality, so fewer fish can live to the oldest historically observed ages. The reduction is a small percent of the total spawning biomass, and the proportion of the spawning biomass comprising probable first or second time spawners has increased by less than 20% for all stocks for which the assessment estimates the age composition of the population. This is a small change in the spawning population compared to most sustainably exploited fish stocks. It is much smaller than any changes that have been reported to be possibly linked to a reduction in reproductive potential in flatfish stocks in other parts of the world, where fishing mortality is several times higher than for any of the BSAI and GOA stocks. Moreover, the data provided by AFSC on age-specific maturation and fecundity of flatfish in the BSAI and GOA confirm that even recently matured flatfish are capable of contributing substantially to spawning. The full analyses of new age-specific fecundity data have not been completed for all flatfish stocks, but the data are available for those stocks that have historically sustained the relatively highest (but not high) exploitation rates in these areas. These would be the stocks that would have been most impacted by effects of fishing on reproductive potential. If their fecundity has been sustained under these exploitation rates, often for several decades, then stocks with lower exploitation rates and only more recently subjected to directed fisheries are very unlikely to have had their reproductive potential impacted negatively, and certainly not impaired by fishing.
Conclusion for 3rd audit	**SG 60:** Changes in stock structure have been detected but there is no evidence of negative effect on recruitment of the stock. Or potentially adverse changes in structure are identified and remedial measures are in the process of implementation over defined timeframes. **SG80:** Evidence exists that the fishery has not caused changes in stock structure that would affect recruitment. Or potentially adverse changes in structure are clearly identified and effective remedial measures are in place. **SG100:** Data strongly indicate a robust age, sex and genetic structure in the stock, such as would maintain reproductive capacity. After full review of the information available at the time this condition was issued, along with the new information provided by both NOAA Fisheries and AKSC on age-specific

	maturation and fecundity, age composition of the various flatfish stocks, and distributional information from surveys and fisheries, it is possible to conclude that the fishery has not impaired the reproductive potential of any of these flatfish stocks in the BSAI, nor with current practices is the fishery likely to diminish the reproduce potential of any of these stocks. Completion of the ongoing fecundity studies for the remaining certified flatfish stocks is strongly encouraged. Nevertheless, the information already available is sufficient to justify closing this condition for the BSAI flatfish. The fishery is therefore rescored at 90. Information on genetic structure in the stock is not available and so the fishery cannot score higher at this time.

Condition 2	**For all BSAI flatfish species**
PI	**2.1.3.2:** Is any gear lost during fishing operations and can 'ghost fishing' occur?
SG 60	Some recording of gear losses takes place and an assessment can be made of ecosystem impacts, including possible 'ghost fishing'.
SG 80	There is knowledge of the type, quantity and location of gear lost during fishing operations. Estimates can be made on the extent of adverse effects, including 'ghost fishing'. Estimates made show that losses do not cause unacceptable impacts on the ecosystem.
SG 100	There is detailed knowledge of the type, quantity and location of gear types lost during fishing operations. The impact of gear loss on habitat, target and non-target species has been well estimated or recorded. The effect of gear loss on target and non-target species has been measured and shown to have negligible effects on habitats, ecosystems or species of concern.
Score	75
Rationale	**All species:** Although lost gear may be noted in vessel logbooks, there appears to be no formal recording or collating of when and where trawl gear is lost. However, given the high cost of trawl gear, every attempt is made to grapple and retrieve lost gear. Impacts of lost trawl gear are likely to be minimal in terms of ghost fishing. The amount of gear lost is likely to be small but cannot be quantified. Overall although little information is available, the relationship between typical levels of lost trawl gear in trawl fisheries and the very low impact of lost trawl gear strongly suggests that there will be no measurable effects from gear loss. **Condition 2:** The client is required to quantify and identify the location of lost trawl fishing gear and assess the extent of adverse effects, including "ghost fishing". If significant adverse effects are identified identify ways of reducing gear loss and must be described and a program to monitor improving performance implemented. It is required that this Condition is met by the second annual surveillance audit. It is recommended that in order to achieve this Condition the client develops a standard lost gear reporting and recording scheme so that the potential impact of lost gear can be better

	evaluated.
Client Action Plan	The client will work with fishing companies and fishing associations involved with BSAI flatfish to initiate a program to record trawl gear loss in the BSAI flatfish fisheries. Information on this program will be provided to the certifier within the first 12 months of certification. Some information on gear loss may be grouped so that confidentiality of sensitive location information cannot be traced to individual vessels. AKSC will also, in conjunction with flatfish fishing companies and fishing associations, implement a program to record trawl gear loss in the BSAI flatfish fisheries within the second year of certification. Given the overlap in trawl fisheries targeting flatfish and cod for some sectors of the Bering Sea trawl fleet, the program developed for flatfish will be designed to work cooperatively with the one being developed for the Bering Sea trawl cod fishery, which is also responding to the same certification Condition.
Conclusion from 1st audit	Progress toward providing the information required to satisfy this condition is on target and it is expected that this condition will be closed out in accordance with the agreed timeline.
Conclusion from 2nd audit	Willingness of the fishery to gather information on gear loss has been demonstrated and thus progress against this condition is judged satisfactory. The condition remains open, with a revised timeline of closing the condition out at the third surveillance audit, when the results of the new gear loss survey are presented.
Client Progress for 3rd audit	Condition 2 for the BSAI flatfish MSC certification requires the collection of accurate and reliable information on the loss of trawl nets and gear. To meet this condition, we have developed a gear loss reporting form, and all companies listed on the MSC flatfish certificate have agreed to implement the gear loss data collection process. The reasons why we decided to develop our own gear loss reporting and data collection system in lieu of using available data sources, collecting information via observers, questionnaires, or other approaches were outlined in our 2012 audit report. Under the plan for meeting this condition as set out in 2012, companies instructed their vessel wheelhouse personnel (e.g. captains, mates, and pursers) to record information on the gear loss reporting form. The format of the reporting form was tailored to each sector to ensure fishermen would understand the purpose of the information collection and the entity that was distributing and would be collecting the filled-out forms. The front page of the form distributed by Gulf of Alaska shoreside delivery trawlers is included as an example below. The reverse side of the form had additional lines for recording gear loss information if needed.

Marine Stewardship Council
Certified sustainable seafood

2012 Net Material and Gear Loss Reporting Form – CV GOA TRAWL

Reporting Instructions and Purpose: The MSC sustainability certification for the Gulf of Alaska flatfish and Pacific cod trawl fisheries requires that fishery participants authorized to enter into MSC chain of custody programs report losses of net materials under Condition 3 to the Certifiers. This is needed to address the requirements of the MSC certification and will not be used for any other purpose. Please record the information listed below for each loss of trawl gear and/or webbing material that occurs over the course of the 2012 season. Your reports should only include loss of net materials in the **Gulf of Alaska Pacific cod and flatfish fisheries**. Also, if you recover the net materials later on, please update the information on the form so that recovered net materials are not reported as lost. At the end of the season, the completed forms should be returned to AGDB (Fax 486-3461). Any questions, please contact Julie Bonney at 486-3033.

VESSEL NAME:_____

Haul Number	Date gear lost (mm/dd/yy)	Description – *please specify what part of the net was lost and approximate size of any lost netting*	Location of lost gear (*lat/long*)	GOA Target Fishery (*flatfish or cod*)	Loss reported? *Please specify reporting method.*	Lost Material Retrieved? (Y/N)

CV GOA Trawl Gear Loss Reporting Form

As fishermen concluded their 2012 fishing in the fall and winter of 2012, gear loss forms were collected through visits to vessels and end-of-season fishing meetings. Vessel personnel for all AKSC vessels completed gear loss forms. A total of 15 reports were collected covering the 15 AKSC vessels fishing in 2012. No (net) loss of gear or gear components occurred in 2012. In one case, a net was lost but recovered in full. All 15 returned forms for 2012 are included in pdf format as Appendix 1.

The Alaska Groundfish Databank member vessels that account for the vast majority of shorside flatfish deliveries in Kodiak returned 18 filled out gear loss forms in 2012. The total number of shoreside flatfish/cod trawl vessels in Kodiak is approximately 35 but not all are AGDB members and not all vessels actively fished for flats or cod in 2012. It is not possible to precisely determine the response rate given the mobility of vessels in the Gulf of Alaska from year to year and impracticality of contacting fishermen who are not members of trade associations. Based on vessels checked into the flatfish weekly target lists kept by NMFS, however, we believe that the 18 returned gear loss forms account for a large fraction of GOA flatfish fishing effort by the shoreside delivery sector. Once again, the reports indicate that there was no net loss of gear in 2012 with one net reported lost and then recovered.

As we speculated in our 2012 MSC audit report, Trawl captains who may get the net caught on a "snag", "wreck" or "hang" that was not recorded on their GPS plotter will often successfully recover the lost net with grappling hooks and other means. In cases where the net becomes snagged in foul weather, most captains will mark the area on their plotter and return to the area to make the retrieval when the weather conditions are more suitable for this kind of operation. In the two reported losses (one for the CP sector and one for the CV sector), this appears to be what occurred based on the reporting forms.

With the current accuracy and repeatability parameters of today's GPS plotters, it is expected that these improvements provide the means for fishermen to successfully avoid snags and wrecks without fail as long as they are accurately displayed on their plotters. At captains' meetings each year, fishermen are encouraged to share their snag and wreck

	position information so that fishermen who may fish less familiar areas will avoid gear damage and loss. As we saw in two instances in 2012, nets do occasionally become hung up and in a small fraction of those cases become lost at least temporarily. With GPS plotters, however, the loss position can be accurately recorded on the plotter and the vessel can either retrieve the net immediately or when conditions allow for effective grappling and retrieval. For this reason, we are confident that the gear loss is close to none in today's flatfish fishery. We will continue to collect gear loss information in 2013 through the reporting system we have established. If the second year of data shows the same picture, it may be prudent to dispense with this condition at that time.
Observations for 3rd audit	In 2012, companies trawling for the named MSC certified flatfish species above, instructed their vessels to record information on the gear loss. The survey was tailored to each sector of the fisheries to ensure fishermen would understand the purpose of the information. Personnel for all 15 AKSC catcher-processor vessels completed gear loss forms. No net loss of gear or gear components occurred in 2012 in either the BSAI or the GOA. In one case, a net was lost but recovered in full. The Alaska Groundfish Databank (AGBD) member vessels account for the majority of shoreside flatfish deliveries in Kodiak. Of the approximately 35 vessels, 18 completed the gear loss survey in 2012. Not all are AGBD members and not all vessels actively fished for flatfish in 2012. Therefore, it is not possible to precisely determine the response rate given the mobility of vessels in the Gulf of Alaska from year to year and impracticality of contacting fishermen who are not members of trade associations. The 18 returned gear loss forms account for a large fraction of GOA flatfish fishing effort by the shoreside delivery sector. Reports indicate that there was no net loss of gear in 2012, although one net was also reported lost and then fully recovered. Although the response rate was high (nearly 50%) and those responding to the survey landed most of the catch, the returns do not represent a random sample of the fishery leaving some opportunity for bias. This was explored by comparing the areas fished by some of those who completed the gear loss survey and those that did not. It was the opinion of those core vessels that the areas fished were similar and that there was no reason to suspect the boats not surveyed may have had higher gear loss. Although a proportion of these survey data are from the GOA, the generally softer bottom (sand and mud) in the areas trawled in the BSAI flatfish fisheries suggest that GOA findings may be used to indicate the amount of gear loss in the BS. Gear contact with the seafloor is predominantly from doors, sweeps, footropes, and to a lesser extent from the codend. Codends are usually rigged with sufficient poly floats to buoy the net body and codend to keep it mostly off the bottom or at least reduce the drag on the bottom to the greatest extent possible.
Conclusion for 3rd audit	**SG60:** Some recording of gear losses takes place and an assessment can be made of ecosystem impacts, including possible 'ghost fishing'. **SG80:** There is knowledge of the type, quantity and location of gear lost during fishing operations. Estimates can be made on the extent of adverse effects, including 'ghost fishing'. Estimates made show that losses do not cause unacceptable impacts on the ecosystem. **SG100:** There is detailed knowledge of the type, quantity and location of gear types lost during fishing operations. The impact of gear loss on habitat, target and non-target species has been well estimated or recorded. The effect of gear loss on target and non-target species has been measured and shown to have negligible effects on habitats, ecosystems or species of concern.

	This condition can be closed. The PI can be re-scored at 80 as there is knowledge of the types, locations and amounts of gear loss. Estimates can be made on the extent of adverse effects, including 'ghost fishing' and estimates indicate that losses do not cause unacceptable impacts on the ecosystem. This score would have been higher if there was more systematic information available on the fishing patterns and gear loss of the non-respondents to the survey.

Condition 3	**For all BSAI flatfish species**
PI	**2.2.1.2:** Are interactions of the fishery with such species adequately determined?
SG 60	The main interactions directly related to the fishery are known.
SG 80	Adequate quantitative estimates are made of the effects of interactions directly related to the fishery.
SG 100	Reliable quantitative estimates are made of the interactions of all populations directly related to the fishery, and qualitative information is available on indirect impacts. Incidental mortalities are recorded and reported.
Score	75
Rationale	**All species:** Because of separation of feeding areas and the fishery, interactions between the fishery and the threatened Steller's eider is considered to be negligible. On average 3.35 Steller sea lions are taken in the flatfish fisheries per year (NOAA 2007). Adequate quantitative estimates are made of the effects of interactions directly related to the fishery with mammals & the short-tailed albatross. Disturbance competition and by-catch are also understood for mammals, and exclusion zones around breeding sites and haulout sites exist based on foraging and disturbance studies. The inter-actions of seabirds and the trawl fishery have been reasonably well studied and documented (e.g. Zador *et al*. 2008). There have also been a number of *ad hoc* studies by, for example, Melvin *et al*. on various Alaskan fisheries that provide considerable information about seabird by-catch and mitigation. Much effort has been directed at understanding the interactions of seabirds with other fisheries, notably the long-line fisheries, in the region but bird strikes in gears and vessels by species are incompletely recorded (PSEIS). The interactions of the trawl fisheries with seabirds needs better quantitative definition, especially in the extent of the net sonde (third) cable in causing injury and mortality. **Condition 3:** The client is required to provide adequate quantitative estimates of the effects of the fishery on seabirds by the first annual surveillance audit. It is recommended that in order to achieve this Condition the client reviews the state of knowledge of both the impacts of the fishery on seabirds and the adequacy of both current and future approaches to mitigation needs to bring together the large but fragmented literature and associated data. Such a review could also specifically assess (i) the desirability or need for additional data; and (ii) the impact of the 'third wire' in species

	specific seabird mortality.
Client Action Plan	Based on information from the NPFMC and NOAA/NMFS website and discussions with Ed Melvin of Washington Sea Grant, a leading researcher on both longline and trawl fisheries seabird impact, AKSC believes that the current flatfish trawl fisheries in the Bering Sea may already meet this condition. Data on seabird bycatch has been collected to the species level or species group level in the Alaska trawl fisheries since 1993. Gulls, alcids and some other species are lumped, because in the case of gulls, particularly juveniles, specific species ID's are difficult even for experts. It is our understanding that shearwaters are collected by species, but are not broken out by species in the SAFE reports - this is also true of alcids - few are caught so they are lumped. The "unidentified" category results largely from sampling at night when a dark bird is taken in less than prime condition - difficult to tell a fulmar from a shearwater, but observers should always be able to tell an albatross from either of these. It is important to get the albatross ID's correct, since they are the species most vulnerable to impacts from fishing. AKSC will provide the terms of reference specified within the first 6 months as directed, and begin a review of the current and "in publication" literature on the impacts of the Bering Sea flatfish trawl fishery on seabird mortality. If the certifier decides that there are any significant gaps or insufficient information on impacts to specific species, AKSC will work with the National Marine Fisheries Service (NMFS) to see if additional information can be gathered. The current estimated sea bird interactions and mortalities from the sea bird experts at NMFS AFSC along with information on the current state of knowledge regarding effects of trawl fisheries in the Bering Sea and Aleutian Islands can be found at: http://www.afsc.noaa.gov/refm/reem/doc/Seabird%20bycatch%20tables%201993-2004_13April2006.pdf - (Tables 7 and 8 and Figures 10-13 for historical data on trawl seabird mortalities through 2004. http://www.afsc.noaa.gov/refm/reem/doc/Alaska_2006seabirdbycatch.pdf - (Tables 4-6 for estimated sea bird mortalities in trawl fisheries in 2006).
Conclusion from 1st audit	The team considers that progress in obtaining current estimates of seabird bycatch is satisfactory and on target and looks forward to seeing these new data and the client's analysis of these data with respect to their estimated impact on the bycatch species.
Conclusion from 2nd audit	**SG60:** The main interactions directly related to the fishery are known. **SG80:** Adequate quantitative estimates are made of the effects of interactions directly related to the fishery. **SG100:** Reliable quantitative estimates are made of the interactions of all populations directly related to the fishery, and qualitative information is available on indirect impacts. Incidental mortalities are recorded and reported. The updated data on seabird bycatch confirm that reliable quantitative estimates are made of the interactions of all populations directly related to the fishery and incidental mortalities are recorded and reported. With the updated information, this performance indicator can be re-scored at the SG 90 level, and the condition closed. The planned enhancement of observer coverage of the smaller boats in these fisheries and the more detailed information collected by the Observer Program (e.g., sex, necropsy and diet of seabirds taken) could improve the score by providing better information on the characteristics of the seabirds taken in the bycatch.

Any complaints against the certified operation; recorded, reviewed and actioned

No formal complaints have been filed with the AKSC as certificate holder for the BSAI and GOA MSC-certified flatfish fisheries. However, individual vessels may have been the subject of enforcement actions. The client does not have access to this information.

Note on the use of non-pelagic trawl gear

Flatfish fishing is conducted with non-pelagic trawl gear, which contacts the seafloor. This form of trawl gear is the only effective way to harvest many of the flatfish species harvested off Alaska. However, the use of non-pelagic trawl gear is controversial for some stakeholder groups, and any MSC certification objections will likely highlight this gear type.

The Alaska flatfish fishery is traditionally prosecuted with otter trawls rigged to fish effectively for flatfish, which live on or very near the substrate. The number of trawl catcher-processor vessels fishing for flatfish in the EBS ranges from 20 to 30. The vessel length overall (LOA) for boats targeting yellowfin sole ranges from from 107 ft to 341 ft. Yellowfin sole are fished with a two- or four-seam trawl with a relatively low vertical opening (typically 1 to 3 fathoms). Nets are made of polyethylene netting, with codends and intermediates using 5.5-inch to 8-inch mesh, in square or diamond configuration. Trawl codends are usually made with polyethylene netting attached to four longitudinal riblines. The riblines are typically chain, wire, or synthetic rope. Floats are attached along the length of the codend to counteract the weight of the steel components. Container lines around the circumference are attached along the length of the codend to restrict the expansion of the netting, preventing damage and allowing the codend to be hauled up a stern ramp. Sacrificial chafing gear, typically polyethylene fiber, is attached to the codend to protect it from abrasion on the stern ramp and occasional contact with the seafloor.

Otter board or doors are used to spread the net and keep it open during towing. Steel trawl doors, ranging in size from 5 m^2 to 11 m^2, spread the nets horizontally. Door spread varies with fishing depth and rigging style, but generally ranges from 100 m to 200 m (328 ft to 656 ft). The rigging between the net and the doors includes bridles and sweeps, ranging in length from 30 m to 366 m (98 ft to 1200 ft), which herd fish into the path of the trawl. Trawl sweeps were extended beyond traditional lengths to increase fishing efficiency without significantly increasing drag. Sweeps are made of steel cable covered by rubber disks (‘mudgear’), or cables with a steel core and fiber outside (‘combination rope’). These range from 2 to 4 inches in diameter. Footropes keep the front of the net off the bottom to protect it from damage. They are made of rubber disks and bobbins 12 to 18 inches in diameter, strung on chain or wire at 18 to 48 inch intervals. Bobbins are mostly rubber, but sometimes are hollow steel balls designed to roll along the seabed.

Contact with the seafloor is predominantly from doors, sweeps, footropes, and to a lesser extent from the codend. Although codends are usually rigged with some poly twine chafing gear, a design objective for modern flatfish nets is to employ sufficient poly floats to buoy the net body and codend to keep it mostly off the bottom, or at least reduce the drag on the bottom to the greatest extent possible. This reduces the problem of sand and mud in the catch (which lowers product value and complicates processing). Flotation on the net headrope provides lift to the footrope to reduce unnecessary drag and increase towing efficiency and performance. Some headrope/footrope combinations are designed to be as much as 70 percent buoyant at depth. Footropes typically extend 100 to 200 ft.

When set, the net is unwound from a net reel or from trawl winches, the sweeps are attached, and then the doors are attached. Wire cable attached to each door is let out to a distance of approximately 3 times the water depth. Modern trawl winches are designed to automatically adjust tension and release when necessary.

Amendment 94 evaluated the implementation of a requirement for the flatfish trawl fishery to use elevated devices on their trawl sweeps, in order to raise the sweep off the seafloor and reduce damage to habitat. One of the challenges with implementing this requirement has been to develop a gear modification design that both reduces the gear’s contact with the seafloor and yet maintains fishing productivity. Scientists and industry members worked collaboratively to modify groundfish trawls to reduce their effects on the seafloor environment. Elevating devices were added to trawl sweeps and were tested for their effectiveness at reducing effects on sessile seafloor animals on unconsolidated (sand – mud) substrates. For most Bering Sea

flatfish trawls, sweeps are so long (up to 1500 ft) that they sweep 90% of the area covered between the trawl doors. The proposed modifications elevate most of the sweep area 2 to 3 inches above the substrate, resulting in a decrease of the trawl sweep contact with seabed by about 90%. This was found to be effective in reducing trawl sweep impact effects to basketstars, sea whips, sponges, and siphons by allowing space for animals to pass beneath. Additionally, using the modified sweeps reduced estimates of mortality for *Chionoecetes bairdi* and *C. opilio* crabs from 5% with conventional sweeps, to nearly zero for the modified sweeps, while not substantially reducing catches of target flatfish.

The National Marine Fisheries Service issued a final rule on October 6, 2010 (75 FR 61642) that implemented Amendment 94. The final rule required all vessels targeting flatfish in the Bering Sea to use modified trawl sweeps. The regulations describe minimum trawl sweep specifications; including bobbin spacing and trawl sweep clearance.

Similar regulations implementing modified trawl sweep requirements for Gulf of Alaska flatfish fisheries are expected to be implemented beginning in 2014. A recent change is that most captains are now using semi-pelagic trawl doors. These trawl doors are designed to not touch the bottom, but reduce drag increasing fuel efficiency while achieving better net spread. More information on the Amendment 94 review can be found here: http://www.fakr.noaa.gov/npfmc/PDFdocuments/catch_shares/TrawlMod509.pdf.

The certified operation

The certified operation considered here includes the following signatories to the AKSC MSC certification programme:

- Fishing Company of Alaska
- Fishermen's Finest Inc.
- Iquique LLC
- O'Hara Corporation
- Ocean Peace Inc.
- United States Seafood LLC

Any relevant changes to legislation or regulation.

The following actions have been implemented during the period between audits. Actions in development but not yet implemented are listed below in the section '*Significant changes in scientific knowledge relating to the fishery (other than accounted for above)*'. In-season management actions taken during the course of normal fishing operations, including those that open and close specific fisheries, are listed at: http://www.fakr.noaa.gov/index/infobulletins/infobulletins.asp?Yr=2012

Revision to Amendment 80 Vessel Replacement Regulations

On October 1, 2012, NMFS published a final rule implementing Amendment 97 to the Fishery Management Plan for Groundfish of the BSAI Management Area (FMP). Amendment 97 allows the owner of a trawl catcher/processor vessel authorized to participate in the Amendment 80 catch share program to replace that vessel with a vessel that meets certain requirements.

The final rule establishes regulations that permit the owner of an Amendment 80 vessel to replace that vessel with up to one other vessel for any reason and at any time. The vessel replacement process established by this final rule provides Amendment 80 vessel owners with the flexibility to incorporate a broad range of processing opportunities that are not currently available on all vessels. Regulations implemented by this final rule are intended to facilitate improved retention and utilization of catch by the Amendment 80 sector through vessel upgrades and new vessel construction. This final rule also is intended to address the regulatory deficiencies that were identified by the court in Arctic Sole Seafoods v. Gutierrez,

622 F. Supp. 2d 1050 (W.D. Wash. 2008).

Specifically, this final rule: (1) Allows Amendment 80 vessels to be replaced for any reason at any time, up to a one-for-one vessel replacement; (2) prohibits American Fisheries Act (AFA) vessels from being used as Amendment 80 replacement vessels; (3) establishes a maximum vessel length for Amendment 80 replacement vessels and modifies the maximum length over-all (MLOA) on License Limitation Program (LLP) licenses assigned to Amendment 80 replacement vessels; (4) establishes a process for reassigning an Amendment 80 Quota Share (QS) permit to either an Amendment 80 replacement vessel or an Amendment 80 LLP license; (5) imposes sideboard limitations on replaced vessels; (6) applies Gulf of Alaska (GOA) sideboard measures to an Amendment 80 replacement vessel if GOA sideboard measures applied to the Amendment 80 vessel being replaced, with exceptions for the F/V Golden Fleece; (7) establishes specific regulatory restrictions and requirements that apply to any vessel that replaces the F/V Golden Fleece; (8) allows an Amendment 80 replacement vessel to conduct directed fishing for GOA flatfish if the Amendment 80 vessel being replaced was authorized to conduct directed fishing for GOA flatfish; (9) requires an owner to demonstrate to NMFS an amendment 80 replacement vessel's compliance with U.S. Coast Guard safety requirements; and (10) establishes a process by which a vessel owner can apply to NMFS for approval to use an Amendment 80 replacement vessel in the Amendment 80 sector.

Finally, this action demonstrates to the U.S. Maritime Administration (MARAD) that the Council and NMFS have authorized Amendment 80 replacement vessels to exceed specific vessel limits set forth in the AFA and therefore Amendment 80 replacement vessels that exceed these limits are eligible to receive a certificate of documentation consistent with 46 U.S.C. 12113 and MARAD regulations at 46 CFR 56.47.

The final rule implementing these regulations can be found at: http://fakr.noaa.gov/frules/77fr59852.pdf

Revision to Groundfish Retention Standard Regulations

On February 25, 2013, NMFS published a regulatory amendment to modify the groundfish retention standard (GRS) program in the BSAI. This final rule removed certain regulatory requirements that mandate minimum levels of groundfish retention by the owners and operators of Amendment 80 trawl CP vessels and cooperatives participating in the BSAI groundfish fisheries.

The GRS program was implemented to increase the retention and utilization of groundfish; however, NMFS discovered that the regulatory methodology used to calculate compliance with the GRS requires Amendment 80 vessels and cooperatives to retain groundfish at rates well above the recommended minimum retention rates. As a result, GRS compliance costs are significantly higher than predicted for vessel owners and operators. Additionally, enforcement of the GRS has proven far more complex, challenging, and costly than anticipated by NMFS.

The Amendment 80 fleet has made significant improvements in groundfish retention and utilization. To ensure continuation of these improvements despite the problems identified above, industry entered into a private contractual arrangement to measure and maintain groundfish retention at levels considered in the GRS analysis. Additionally, NMFS implemented regulations for Amendment 80 cooperatives to annually report groundfish retention levels. The final rule implementing these changes can be found at: http://fakr.noaa.gov/frules/78fr12627.pdf.

Observer deployment model restructuring

On November 21, 2012, NMFS published regulations to implement Amendment 86 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area and Amendment 76 to the Fishery Management Plan for Groundfish of the Gulf of Alaska (Amendments 86/76). Amendments 86/76 added a funding and deployment system for observer coverage to the existing North Pacific Groundfish Observer Program and amended existing observer coverage requirements for vessels and processing plants.

The new funding and deployment system allows NMFS to determine when and where to deploy observers according to management and conservation needs, with funds provided through a system of fees based on the ex-vessel value of groundfish and halibut in fisheries covered by the new system. This action, implemented January 2013, was necessary to resolve concerns about data quality and cost equity with the

Observer Program's existing funding and deployment structure. The final rule implementing these changes can be found at: http://alaskafisheries.noaa.gov/frules/77fr70062.pdf.

Any relevant changes to management regime.

Key staff changes that might change the relationship between fishery/managers/scientists

Several key staff of the NPFMC and ADF&G have moved to other positions. These staff have mainly participated in the Council process. Both the Council and State of Alaska are in the process of filling these positions, and staffing gaps aren't expected to negatively affect process relative to MSC certifications.

Significant changes in scientific knowledge relating to the fishery (other than accounted for above)

This section includes brief summaries of new scientific information and management actions that are under development but are not yet implemented.

Halibut mortality reduction study

AKSC believes operating as a cooperative increases incentives for individual bycatch accountability and optimal use of halibut bycatch mortality limits. Vessels fishing in the BSAI under a rationalized fishery now have a direct relationship between how they utilize their halibut bycatch mortality allowances and how much of their allocated and non-allocated target species are harvested. Therefore, vessels continue to improve utilization of halibut excluders and avoidance of bycatch hotspots through data sharing.

Potential reductions in halibut mortality rates through improved handling procedures are another important method to make best use of halibut bycatch allowances. Increasing halibut survivability is critical to the development of an adequate set of tools to accommodate Amendment 80 halibut PSC reductions.

During a 2012 EFP, AKSC explored alternative halibut handling procedures designed to return halibut to the sea faster, and decrease halibut mortality rates. Fieldwork was conducted between May 27 and September 19, 2012 on four AKSC vessels: F/T Arica, F/T Constellation, F/T Vaerdal, and the F/T US Intrepid. Primary target fisheries included yellowfin sole (in "fall" fishing mode), arrowtooth flounder, flathead sole and rock sole. Other targets included cod, bottom pollock and rex sole. Participating vessels used their own groundfish and halibut PSC allocations.

Across all vessels and target fisheries (98 hauls), 81% of halibut by number and 87% by weight were sorted from catch on deck. The average halibut mortality rate for deck-sorted halibut was approximately 57%. On average, 6.1 halibut returned to the water per minute compared to 2.2 halibut during the 2009 EFP. The halibut sampling methodology prevented sorting delays on most hauls, but backlogs of halibut awaiting measurement and assessment were inevitable on a few hauls with very high halibut catch rates.

A report for this work has been generated and is under review by NMFS.

Flatfish TAC specifications flexibility

In April, 2013, the Council took final action on a program to increase Amendment 80 harvesting flexibility for yellowfin sole, rock sole, and flathead sole. The analysis for this action includes the following abstract:

This document analyzes a proposed action that would allocate the ABC surplus (i.e., the difference between acceptable biological catch and total allowable catch) for flathead sole, rock sole, and yellowfin sole, among the Amendment 80 cooperatives and CDQ groups, using the same formulas that are used in the annual harvest specifications process. These entities would be able to exchange their quota share of one of the three species (flathead sole, rock sole, and/or yellowfin sole) for an equivalent amount of their allocation of the ABC surplus for another (flathead sole, rock sole, and/or yellowfin sole). The approach is intended to increase the opportunity for maximizing the harvest of these species, while ensuring that the overall 2 million mt optimum yield, and ABCs for each individual species, are not exceeded. The analysis also includes options to restrict flexibility in the exchange of yellowfin sole, if the analysis shows that there

is a potential negative impact of the approach on users of yellowfin sole in the Bering Sea Aleutian Islands trawl limited access sector. The proposed action would amend the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area and Federal regulations related to the Bering Sea / Aleutian Islands.

The analysis is at: http://alaskafisheries.noaa.gov/npfmc/PDFdocuments/SPECS/BSFlatfishFlexPR413.pdf.

Overall Conclusions

All aspects of the Alaska Flatfish - Bering Sea and Aleutian Islands fishery meet or exceed the SG80 standard for certification. All changes reported in the fisheries assessment and management processes, and in industry actions are expected to maintain or improve concordance with the certification standards.

The assessment team is pleased to commend the Alaska Flatfish - Bering Sea and Aleutian Islands fishery for having conducted or supported investigations and other work to demonstrate performance consistent with the MSC Standard. The single condition on this fishery that was open as this third audit commenced is now closed, and the fishery can proceed to the next (fourth) audit with no open conditions- congratulations.

Annex 1: Notification of surveillance audit.

At-Sea Processors Association
Alaska pollock- Bering Sea and Aleutian Islands
Alaska pollock- Gulf of Alaska

Alaska Seafood Cooperative
Alaska flatfish- Bering Sea and Aleutian Islands
Alaska flatfish- Gulf of Alaska

Alaska Fisheries Development Foundation
Alaska Pacific cod- Bering Sea and Aleutian Islands
Alaska Pacific cod- Gulf of Alaska

MSC Certification
Certification Body: Intertek Moody Marine (IMM)

Third Annual Combined Surveillance Audits

Following certification of these three fisheries, Intertek Moody Marine is now continuing the process of combined annual surveillance audits of the fisheries. The audits have two principal functions:

1. To review any changes in the management of the fishery, including regulations, key management or scientific staff, or stock evaluation,
2. To evaluate the progress of the fishery against any Conditions of Certification raised during the Full Assessments.

During the audit, the audit team shall be speaking with representatives of the fishery and fishery management organisations. We expect to carry out meetings between May 13th and May 15th 2013.

Meetings will be held in Seattle, Washington, and will be attended by the Audit Team members listed below. CVs of the team members are available on request.

Dr. Rob Blyth-Skyrme	Coordinator / Lead Auditor	Will be on site
Dr. Jake Rice	P1	Will be on site
Dr. Don Bowen	P2	Will be on site
Dr. Susan Hanna	P3	Will not attend meetings in person

Should you have any information on this fishery that you feel should be considered in the assessment, please advise us. We may also be available to meet with stakeholders as appropriate. If you would like to arrange a meeting, please advise us of:

a) your name and contact details
b) your association with the fishery
c) the issues you would like to discuss (in order for us to arrange appropriate representation)
d) where and when you would like to meet

Yours,

Dr. Rob Blyth-Skyrme
Coordinator / Lead Auditor
Tel: +1 808 351 0050, E-mail rob@ichthysmarine.com

Annex 2: Determination of surveillance level

A surveillance audit may be conducted as either an "on-site" or "offsite audit". This is determined by using criteria set out by the MSC:

Criteria	Surveillance Score
1. Default Assessment Tree	
Yes	0
No	2
2. Number of Conditions	
Zero Conditions	0
1-5 Conditions	1
>5 Conditions	2
3. Principle Level Scores	
≥ 85	0
<85	2
4. Conditions on outcome PIs?	
Yes	2
No	0

The score for the fishery is used to determine the surveillance level appropriate to the fishery using the table below:

			Years after certification or re-certification			
Surveillance score	**Surveillance level**		**Year 1**	**Year 2**	**Year 3**	**Year 4**
2 or more	Normal surveillance		On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & recertification visit
1	Remote surveillance	Option 1	Off-site surveillance audit	On-site surveillance audit	Off-site surveillance audit	On-site surveillance audit & recertification visit
		Option 2	On-site surveillance audit	Off-site surveillance audit	On-site surveillance audit	
0	Reduced surveillance		Review new information	On-site surveillance audit	Review new information	On-site surveillance audit & recertification visit

In the BSAI flatfish fishery, a non-standard assessment tree was used and four conditions were introduced. As such, the fishery scores 3, and an on-site audit was required in 2013 and will be again in 2014.