MEMORANDUM

TO: Council, SSC and AP
FROM: Chris Oliver
       Executive Director
DATE: June 27, 2013
SUBJECT: Items of Interest

Rule of Conduct for Council members – 2013
Letter to NMFS-AKR regarding SSL EIS
Letter to fishing association colleagues requesting assistance to test electronic monitoring
Letter to William Michaels (NMFS Office of Science & Technology) regarding Research Priorities
Letter from Juneau Chamber of Commerce
Letter from NMFS Office of Law Enforcement regarding ADF&G real-time VMS access
Letter from NMFS and FR notice regarding Tribal Consultation and Coordination Policy for the US DOC
Letter to Nick Dallman, ADEC, from NMFS regarding permit for offshore large dredge operations in Norton Sound
Joint Protocol Committee June 12, 2013 minutes
Draft Decisions Summary document from 2013 Annual CCC meeting
NFI Questions National Park Service’s Use of Monterey Bay and MSC Ratings
2012 Annual Report for Alaska Groundfish Fisheries Chinook Incidental Catch and ESA Consultation
Letter of Acknowledgement to Olgoonik Fairweather LLC for research plan to be conducted in the northeastern Chukchi Sea
2013 RULES OF CONDUCT FOR MEMBERS OF REGIONAL FISHERY MANAGEMENT COUNCILS

prepared by the
Office of the Assistant General Counsel for Administration
Ethics Law and Programs Division
UNITED STATES DEPARTMENT OF COMMERCE
RULES OF CONDUCT FOR MEMBERS OF FISHERY MANAGEMENT COUNCILS

As a member of a Regional Fishery Management Council, you serve on behalf of the Government and are held to a high standard of conduct to ensure public confidence in the actions of the Council. The Fishery Management Councils were created by statute to provide a means for cooperation among the Federal Government, state governments, and members of the public with expertise in commercial and recreational fishing and conservation in the creation of fishing policy. Although all members are expected to honestly and conscientiously work toward the fishing policy that is best for the nation, your role on the Council may vary depending on whether you are a voting or non-voting member and whether you are a regular Federal employee, a state official, or a public member who was nominated by a governor and appointed by the Secretary of Commerce. In recognition of these varying types of service, the applicable conduct rules also vary.

Conduct rules cover financial conflicts of interest; misuse of Council resources; bribes and similar payments; and, for some members, limits on representing others before the Federal Government, both during Council service and after termination of such service. The specific rules that apply to each type of member—public member, Federal official and state government official—are summarized below.

AVAILABLE LEGAL GUIDANCE

If you have a question about conduct rules or their application to a specific situation, you should seek guidance from the Regional Attorney of the National Oceanic and Atmospheric Administration assigned to provide advice to your Council.

You may also seek advice from an attorney in the Ethics Law and Programs Division, Office of the Assistant General Counsel for Administration, U.S. Department of Commerce, at 202-482-5384 or ethicsdivision@doc.gov, or, if you are a Federal official, an ethics official from your agency.

If you are a state government official, you should seek advice from the state government office that administers your state’s ethics rules.

Prepared by the Ethics Law and Programs Division, Office of the Assistant General Counsel for Administration, United States Department of Commerce – January 2, 2013
RULES OF CONDUCT FOR PUBLIC MEMBERS

If you serve as a public member of a Regional Fishery Management Council, you are considered a Federal employee for purposes of criminal conflict of interest statutes applicable to other United States Government employees. However, because of the unique nature of the Councils, which are composed of members of the public who have special expertise in fishing matters and who, in many cases, are from the commercial or recreational fishing industries, special ethics rules apply. For regular Federal employees, disqualification is usually the preferred method for avoiding a conflict of interest; however, for Fishery Management Councils, in order to allow full participation by members of the public with knowledge of and experience in fishing matters, the method chosen by Congress to deal with conflicts of interest is full public disclosure of fishing interests and a system of appointment that encourages a diversity of views. Nevertheless, as noted below, disqualification is required with regard to matters that will have a particular effect or a disproportionate effect on your financial interests relative to those of others in the fishing industry.

DISCLOSING FINANCIAL INTERESTS

Public Financial Disclosure Report of Fishing Interests. You are required to report any interest in a “harvesting, processing, lobbying, advocacy, or marketing activity” on a Financial Interest Form—NOAA Form 88-195, “Statement of Financial Interests for Use by Voting Members and Nominees of Regional Fishery Management Councils.” List on the report any financial or employment interest in a “harvesting, processing, lobbying, advocacy, or marketing activity” that is being or will be undertaken within any fishery over which the Council has jurisdiction; include the financial interests held by your spouse, minor child, partner, or any organization (other than the Council) in which you serve as an officer, director, trustee, partner, or employee.

The Importance of Filing a Complete and Timely Form. The financial interest forms are an integral part of the system for exempting you from certain provisions of a criminal conflict of interest statute, as explained below. If you do not file a complete, accurate, and up-to-date form in a timely manner, you may be required to refrain from participating in Council actions. If you participate in matters affecting a harvesting, processing, or marketing activity that was not properly disclosed, you may be subject to criminal penalties.

Financial Interests to Report. Report stock, equity, and ownership interests in any company or business engaged in a harvesting, processing, or marketing activity; fishing vessel engaged in a harvesting, processing, or marketing activity; or equipment company or company that provides other services to a harvesting, processing, or marketing activity in any fishery under the jurisdiction of your Council.
FINANCIAL CONFLICTS OF INTERESTS

Basic Rule. Generally, you are barred from participating personally and substantially in any matter as a Council member that will have a direct and predictable effect on your financial interests, or on the financial interests of your spouse, minor children, or general partners; or on an organization in which you serve as an officer, director, trustee, general partner, or employee; or on a person or entity with which you have an arrangement regarding future employment or are negotiating for future employment.

Exemptions. Because of regulatory exemptions, you are allowed to participate in a matter affecting your financial interests (or those of persons whose interests are attributed to you, as indicated above) if the interest is in the form of a security (stock or bond) publicly-traded on a United States exchange and:
- the value of your interests in all affected parties is $15,000 or less; or
- the value of your interests in a non-party regarding a particular matter involving specific parties that will affect the non-party is $25,000 or less; or
- the value of your interests in each affected company is $25,000 or less and your interests in all affected companies is $50,000 or less and the matter at issue is a broad policy matter (rather than a matter involving specific parties); or
- the interest is held through a broadly-diversified mutual fund; or
- the interest is held through a mutual fund that focuses its investments in a specific industry sector or geographic sector and your interests in the fund (and in other sector-specific funds that focus investments in the same sector) is $50,000 or less.
Special Rules for Interests in Harvesting, Processing, Lobbying, Advocacy, and Marketing Activities. Public disclosure, rather than disqualification, is the statutory method for a public member of a Fishery Management Council to resolve a potential conflict with regard to most interests in a fishery harvesting, processing, lobbying, advocacy, or marketing activity. Disqualification is not required, except with regard to two specific situations, as identified in the third bullet below.

**ALLOWED**
**No Disqualification**
You can participate fully as a Council member in a matter affecting your financial interests provided that:
1. the interest in question is in a harvesting, processing, lobbying, advocacy, or marketing activity;
2. the interest has been reported on a Financial Interest Form (NOAA Form 88-195); and
3. matter at issue:
   - will not have an expected and substantially disproportionate benefit (see below) to your financial interest (or the financial interest of your spouse, minor children, or general partners; or any organization in which you serve as an officer, director, trustee, general partner, or employee) relative to the financial interest of other participants in the same gear type or sector of the affected fishery; and
   - is not a matter primarily of individual concern (see below).

**NOT ALLOWED**
**Disqualification Required**
You cannot participate fully as a Council member on a matter:
1. that will affect your financial interests (or those whose interests are imputed to you) for which no exemption applies (see above);
2. in a harvesting, processing, lobbying, advocacy, or marketing financial or employment interest or activity that you have not reported;
3. is a harvesting, processing, lobbying, advocacy, or marketing activity that will have an excepted and substantially disproportionate benefit (see below) that will affect your interest (or those whose interests are imputed to you); or
4. is a matter of primarily individual concern that will affect your interests (or those whose interests are imputed to you).

**Scope of Disqualification – Voting or Participating in Deliberations.** You **cannot vote** on a Council decision that would have an expected and substantially disproportionate benefit to a harvesting, processing, lobbying, advocacy, or marketing interest you have reported. However, you can participate in deliberations of your Council and its committee regarding such a matter if you first notify the Council that you will not be voting on the matter and identify the financial interest that would be affected. You **cannot vote or participate in deliberations** regarding a matter of primarily individual concern that will affect your interests (or those whose interests are attributable to you).
Definition of “expected and substantially disproportionate benefit.”

A Council action will have an “expected and substantially disproportionate benefit” to you if you (or those whose interests are attributed to you) have:
- a greater than 10% interest in the total harvest of the fishery (or the sector of the fishery that is under consideration by the Council);
- a greater than 10% interest in the marketing or processing of the total harvest of the fishery (or sector of the fishery); or
- full or partial ownership of more than 10% of the vessels using the same gear type within the fishery (or sector of the fishery).
(For purposes of this definition, interests of your spouse, minor children, general partners, non-Federal employers, and entities with which you are seeking employment and any organization in which you serve as an officer, director, or trustee are attributed to you.)

The percentage of interest will be determined with reference to the most recent fishing year for which information is available, except that for fisheries in which Individual Fishing Quotas (IFQs) are assigned, the percentage of IFQs assigned will be determinative.

If you believe that these provisions require your disqualification from a matter, you may announce your disqualification (or recusal) at any time before the vote on the matter. If you have any question regarding the application of the rules to your situation, you may seek advice from the NOAA Regional Attorney who advises your Council (or an attorney in the Ethics Law and Programs Division of the U.S. Department of Commerce). If you would like a determination as to whether an interest requires your disqualification, you may seek such a determination from the NOAA Regional Attorney who advises your Council using the procedures set forth below. (See below for procedures for determining when this definition applies.)

Definition of “matters of primarily individual concern.” “Matters primarily of individual concern” are those matters that affect a small number of identified, or easily identifiable, parties, rather than broad policy matters affecting many entities.

For example, a contract between your Council and a company would be a matter primarily of individual concern; thus, you would be disqualified from participating in any Council action regarding the contract if you had stock in the contractor or were employed by the contractor, even if the company was listed on a Financial Interest Form. A Fishery Management Plan would usually be considered a broad policy matter, rather than a matter primarily of individual concern. However, if a fishery had only a few active vessels, a Fishery Management Plan regarding that fishery would be a matter primarily of individual concern and you would be required to disqualify yourself from participating in matters concerning the Plan if you owned one of the vessels.
Procedures for Determinations Regarding an “Expected and Substantially Disproportionate Benefit.” You may ask for a determination as to whether a matter will have an expected and substantially disproportionate benefit to you (or those whose interests are attributed to you) from the NOAA Regional Attorney assigned to advise your Council (or such other attorney as designated by the National Oceanic and Atmospheric Administration). The NOAA Regional Attorney may also make such a determination on his or her own initiative. Neither you, nor another Council member, nor a member of the public may initiate a procedure regarding another Council member. However, you may provide written and signed information to the Regional Attorney indicating that initiation of such a procedure may be appropriate.

You should make a request for a determination:
- within a reasonable time before the Council meeting at which the matter at issue will be addressed, or
- during the Council meeting before the vote on the matter at issue.

You should make a request for a determination as far in advance of the Council meeting as possible in order to provide the NOAA Regional Attorney sufficient time to thoroughly examine and consider available information.

A Regional Attorney who receives reliable and probative written and signed information prior to a Council meeting relating to a disqualification determination will announce at the beginning of the meeting the receipt of such information, the nature of the information, and the identity of the person providing the information (or during a Council meeting if the issue could not reasonably have been anticipated prior to the meeting). This announcement will be made during the meeting if reliable and probative information is received after the beginning of the meeting.

If the Regional Attorney determines that you may not vote on a matter because it will have an expected and substantially disproportionate benefit to you (or anyone whose interests are attributed to you), you may not vote on the matter, but you may state for the record how you would have voted. You may also fully participate in deliberations and discussions regarding the matter (after notifying the Council of your disqualification and after identifying the financial interest that would be affected).

If you disagree with a determination by a Regional Attorney regarding yourself or any other Council member, you may file a written request with the NOAA General Counsel for review of the determination. Such a request must be received within ten days of the determination. A reversal of the determination will not affect any Council vote that has already been taken. However, the decision by the NOAA General Counsel may provide useful guidance regarding future Council actions.
BRIBES AND SIMILAR PAYMENTS

You cannot accept anything of monetary value in exchange for taking an action as a Council member or failing to take an action as a Council member, other than payments from the United States Government in connection with your Council service. This restriction is based on the Federal criminal statute against bribery.

In addition, Council rules specify that you cannot pay, offer, promise, solicit, or receive from any person, firm, or corporation a contribution of money or anything of value in consideration of support or the use of influence in obtaining for any person any appointive office, place, or employment under the Council.

CONTACTING THE FEDERAL GOVERNMENT ON BEHALF OF OTHERS

You are subject to some restrictions on representing others before the United States Government and from receiving payments based on the representational activities of others. Representing includes serving as an agent or attorney or, if paid, making any communication to influence Government action, on behalf of someone other than yourself to a Federal agency or a Federal court. The restrictions apply only to matters involving specific parties, that is to matters in which there are named parties, such as contracts, grants, law suits, and license applications. The restrictions do not apply to broad policy matters or Government actions in which parties are not specifically named, such as regulations, legislation, and, in most cases, fishery management plans.

COUNCIL MEMBERS WHO SERVE FOR 60 DAYS OR FEWER

If you serve for 60 or fewer during a 365-day period, you cannot:
- represent anyone before a Federal agency or Federal court concerning a particular matter involving specific parties on which you participated as a Council member or
- receive compensation (such as through a partnership distribution) for the representational activities of others regarding such matters.

COUNCIL MEMBERS WHO SERVE FOR MORE THAN 60 DAYS

If you serve for 60 to 130 days during a 365-day period, you cannot:
- represent anyone before a Federal agency or Federal court concerning a particular matter involving specific parties that was pending before your Fishery Management Council, even if you did not personally participate in the matter or
- receive compensation (such as through a partnership distribution) for the representational activities of others regarding such matters.

If you serve for more than 130 days, you are subject to additional restrictions. Contact a Commerce ethics official for guidance on the applicable rules.
MISUSE OF COUNCIL RESOURCES, INFORMATION, AND INFLUENCE

Council resources, like all Government resources, may only be used for official Government activities. This applies to use of supplies, equipment, staff time, and services, including long-distance telephone and fax services. You also have an affirmative duty to protect and preserve Council property.

You also must be careful not to disclose or use any nonpublic information that you learn in the course of your service to the Council, until such time as the Council or the Department of Commerce has authorized release of the information.

Furthermore, you cannot use your position as a Council member or any authority you have as a Council member for personal purposes. You cannot refer to your Council position in furtherance of private activities or use your Council title on personal stationery or on business cards used for non-Council activities.

RULES THAT WILL APPLY AFTER LEAVING COUNCIL SERVICE

There are a few restrictions that will apply to you even after you terminate your service with a Fishery Management Council; these concern contacting the United States Government on behalf of others and using nonpublic information.

Restrictions on Contacting the Federal Government. After you leave Council service, you will be barred from communicating with any Federal agency or Federal court on behalf of someone else concerning a particular matter involving specific parties with the intent to influence Government action if you participated personally and substantially in the matter as a Council member. Note that this is similar to the restriction described above that applies while you serve on the Council. You will also be barred for two years after leaving Council service from representing anyone before any Federal agency or Federal court concerning a particular matter involving specific parties in which you did not personally participate, but which was under your “official responsibility,” during your last year of your term of service, which would include any specific-party matter pending before the Council during that period.

Disclosure and Use of Nonpublic Information. You will continue to be restricted after leaving Council service from disclosing or using nonpublic information you obtained through your Council service that is protected by statute, until its release has been authorized by the Council or the Department of Commerce.

GENERAL CONDUCT RULES

In addition to the above rules, Council conduct regulations provide that you cannot engage in criminal, infamous, dishonest, notoriously immoral, or disgraceful conduct.
RULES OF CONDUCT FOR FEDERAL OFFICIALS

If you serve on a Fishery Management Council as a regular Federal Government employee or officer, your service is considered part of your Government duties and you are subject to all of the same conflict of interest statutes and ethics regulations that apply regarding performance of any of your other Government tasks.

Conflict of Interest Statutes. Although you are subject to all the conflict of interest statutes, of particular relevance to service on a Fishery Management Council is the provision barring you from participating in a particular matter that will have a direct and predictable interest on your financial interests (or the interests of your spouse, minor children, or general partners; or of an entity for which you serve as an officer, director, trustee, or employee; or of a person or entity with which you have an arrangement regarding future employment or are negotiating for future employment), unless a regulatory exemption applies or you receive a conflict of interest waiver (18 U.S.C. § 208). Other statutes prohibit the acceptance of bribes or supplementation of your salary from a source other than the Government and restriction representational activities before Federal agencies and courts, both during Federal service and after leaving the Government.

There are exemptions to this general disqualification requirement so that you may participate in a matter before the Council if:
- your interests (and those whose interests are attributable to you) that will be affected by the matter are limited to:
  - holdings in a broadly-diversified mutual fund,
  - holdings of $50,000 or less in sector-specific funds,
  - securities traded on a U.S. exchange the value of which is:
    - $15,000 or less,
    - $25,000 or less regarding a company that is not a party in a matter before the Council but which will be affected by a specific-party matter before the Council,
    - $25,000 or less with regard to any individual company and totals $50,000 or less in all affected companies regarding a matter of general applicability or
- you have received a conflict of interest waiver.

The exception for FMC public members that applies to interests in “harvesting, processing, and marketing activities” disclosed on a NOAA Form 88-195 Financial Interest Form does not apply to you. You cannot participate in such matters, even if you have listed the interest on a financial disclosure report, unless one of the exemptions listed above applies or you have received a conflict of interest waiver.
Ethics Regulations. You are also subject to the Standards of Ethical Conduct for Employees of the Executive Branch or similar rules for members of the armed services.

Of particular relevance for service on the Council, if you are a civilian employee, are regulations in the Standards of Conduct which provide that you cannot
- accept gifts from persons who are regulated by the Council with which you serve or who have interests in Council actions, or accept gifts that are offered because of your Council position;
- participate in matters involving specific parties that would affect the financial interests of a member of your household;
- participate in matters involving specific parties if one of the parties is, or is represented by, a person with whom you have a “covered relationship,” including a person with whom you have or are seeking business relations; a close relative or household member; the employer (or prospective employer) of your spouse, parent, or dependent child; a recent former employer; or an organization in which you are an active participant;
- engage in non-Federal activities that would conflict with your Council duties; or
- use Government resources, including Council resources, for unauthorized purposes.

There are a number of exceptions to these basic restrictions. Furthermore, some departments and agencies, although not the U.S. Department of Commerce, have supplemental ethics regulations. You are subject to the supplemental ethics regulations issued by your agency. You should seek advice from an ethics official of your Federal agency if you have a question about any conduct rule or its application to a particular situation.

Both civilian employees and uniformed service officers are also subject to restrictions on engaging in some political activities, although the restrictions vary. All Federal officials serving on a Council, both civilian and uniformed service, are barred from engage in political activities while on duty, including periods you are engaging in Council activities; using Government resources for political purposes, including Council resources; and using the authority of your position to affect an election, including your authority as a member of a Council.

In addition to these Federal rules, under Council-specific regulations, like other Council members, you cannot participate in matters primarily of individual concern and you cannot engage in criminal, infamous, dishonest, notoriously immoral, or disgraceful conduct.
RULES OF CONDUCT FOR STATE GOVERNMENT OFFICIALS

If you serve on a Fishery Management Council as an employee or officer of a state government, you are not subject to the Federal conflict of interest statutes or conduct regulations that apply to Federal Government officials. However, you are subject to any state statutes or regulations that apply to your conduct as a state official.

Council Regulations. In addition to any restrictions that apply under state ethics laws, Fishery Management Council regulations provide that you cannot:
- pay, offer, promise, solicit, or receive from any person, firm, or corporation a contribution of money or anything of value in consideration of either support or the use of influence or the promise of support or influence in obtaining for any person any appointive office, place, or employment under the Council;
- use or allow the use, for other than official purposes, of information obtained through or in connection with your Council service that has not been made available to the general public;
- engage in criminal, infamous, dishonest, notoriously immoral, or disgraceful conduct;
- use Council property for other than official business;
- participate personally and substantially in a matter primarily of individual concern; or
- participate in any matter of general public concern that is likely to have a direct and predictable effect on your financial interests.

fish and aquatic animals illustrated on the front cover

swordfish
Western Pacific

cod
North Pacific

flounder
Mid-Atlantic

mahi-mahi
Pacific

sea bass
South Atlantic

shrimp
Gulf of Mexico

spiny lobster
Caribbean

scallops
New England

2013 Conduct Rules for Members of Regional Fishery Management Councils - 11
June 24, 2013

Dr. James Balsiger, Regional Administrator
National Oceanic and Atmospheric Administration
National Marine Fisheries Service, Alaska Region
PO Box 21668
Juneau, AK 99802-1668

Dear Dr. Balsiger,

On behalf of the North Pacific Fishery Management Council, I submit this letter in regards to the Draft Environmental Impact Statement (DEIS) on Steller Sea Lion Protection Measures for Groundfish Fisheries in the Bering Sea and Aleutian Islands Management Area. The Council acknowledges the hard work of NMFS staff in compiling this large, comprehensive document, and appreciates the analyses prepared in response to previous Council comments. We appreciate that these issues continue to be controversial, and the professionalism brought to the task by NMFS staff.

The Council’s preliminary review of the DEIS confirms that the Council and the public are still left without key information necessary to make fully informed public comment and a final decision on Steller sea lion mitigation measures. Many of the relevant supporting analyses are incomplete and pending, and critical sections of the document, particularly Chapter 5, rely on draft, unpublished studies. The Council reiterates its earlier comments about the need to have all of the relevant information and a complete analysis available for review and comment by the public before the Council makes a decision on a preferred alternative. Failure to provide this information jeopardizes the National Environmental Policy Act (NEPA) process because the Council and the public will not have the necessary information to make informed comments or decisions on a preferred alternative.

The Council also notes that the DEIS is written with the implicit assumption that the findings of the 2010 Biological Opinion will not change, even though the agency has stated that new information available since the completion of the 2010 Biological Opinion is significant, will be objectively reviewed, and may result in different metrics for evaluating fisheries mitigation measures. The Council notes that although the DEIS generally acknowledges the two independent scientific reviews of the 2100 Biological Opinion, it does not address the conclusion of those reviews that there is no scientific support for the conclusion that commercial fisheries jeopardize Steller sea lions through competition for prey, resulting in nutritional stress and reduced natality. The DEIS assumes that more fishing, and more areas open to fishing, result in greater negative effects on Steller sea lions without addressing the merits of this assumption in consideration of the strong criticisms levied in the reviews. Whether such a significant, negative impact exists is as relevant under NEPA as it is under the ESA. Accurate scientific analysis, expert comments, and public scrutiny are essential to implementing NEPA. NEPA documents must concentrate on the issues that are “truly significant to the action in question, rather than amassing needless detail” (40 CFR §1500.1(b)). In April 2013, the Council recommended that the DEIS should contain a stand-alone section...
addressing the conclusions of the 2010 Biological Opinion, the recommendations of the independent scientific reviews, and the Agency’s response to each controversial issue identified by the independent scientific reviews. We repeat this recommendation here.

The National Environmental Policy Act requires that the agency make every effort to disclose and discuss all major points of view on the environmental impacts of the alternative in the draft EIS (40 CFR §1502.9(a)). The Final EIS should include an analysis of the potential impacts of fishing on sea lions, their prey, and critical habitat, and incorporate the Agency’s responses to the findings and recommendations of the independent reviews into this analysis, and apply that across all alternatives. This information must be included in order for the EIS to meet NEPA requirements to “take a hard look at the environmental effects” of each alternative. Without these analyses, the EIS will not be based on the best scientific information, nor will the resulting decisions that depend upon the EIS.

The Council has previously identified this exclusion as a critical shortcoming in the overall approach of the EIS. This point was again raised by the chairman of the Council’s Steller Sea Lion Mitigation Committee (SSLMC), who noted that the DEIS remains deficient, and without these analyses the SSLMC cannot provide informed advice to the Council or the Agency.

As a final, critical point, the Council requests that the Agency reconsider its policy choice regarding its treatment of recovery plan criteria in the EIS and as the basis for jeopardy and adverse modification (JAM) determinations in the upcoming Biological Opinion.

I thank you for the opportunity to provide these comments and look forward to your response. We look forward to continuing to work with the Agency to understand the potential effects of commercial fisheries on Steller sea lions, and to develop reasonable and effective mitigation measures.

Sincerely,

[Signature]

Eric A. Olson
Chairman

CC:  Dr. Douglas DeMaster
     Mr. Jon Kurland
     Mr. Samuel Rauch
June 24, 2013

Dear Colleagues:

I am writing to you on behalf of the North Pacific Fishery Management Council to seek your additional assistance to encourage cooperation in the ongoing pilot project to test electronic monitoring (EM) technologies and assess specific feasibility issues associated with the development of EM for fixed gear vessels in the Gulf of Alaska for the remainder of 2013 and for 2014. At its recent June meeting the Council reviewed and adopted the EM Strategic Plan presented by the National Marine Fisheries Service (NMFS) observer program. The Council also provided several suggestions on how to improve that strategic plan, underscoring the Council’s desire to have a viable EM option on the water as soon as practicable. The current EM volunteer pilot program is vital to the realization of this goal, and the Council’s decision to expand the volunteer pool to include fixed gear vessels of any length, including pot vessels, emphasizes the importance of the 2013 and 2014 pilot projects.

NMFS reported a low rate of volunteers for the EM pilot program, thus far in 2013, which diminishes the ability to implement EM as quickly as stakeholders have desired. Vessel participation in this volunteer pilot program will be essential to our collective ability to allow, at some point, EM (cameras) to be an alternative to meet various monitoring objectives currently achieved with human observers. The Council believes that at this time the current strategy represents the best approach to resolve the logistical, mechanical, scientific, and management issues that must be resolved in order to get EM on the water as an alternative to human observers. The Council will be forming an EM Workgroup this summer, including representatives of the fixed gear fleets, to work with NMFS later this year and into 2014, in order to expedite implementation of the strategic plan.

I have attached a one-page summary which outlines the requirements for participation in the 2013-2014 pilot project, along with links which provide additional EM installation details, an EM project description, and contact information. The Council strongly encourages you to distribute this information to your members, and to encourage them to participate in the pilot program. While we realize that such participation places certain burdens on vessel operations, we believe it is imperative to get a higher level of participation in 2013 and 2014, in order to develop EM technologies, performance standards, and agency infrastructure to the point where EM is a viable monitoring alternative to various human observer functions. While there may be short term burdens for vessels participating in this pilot program, we believe these will be more than offset by realization of the longer term objectives of this project, which include reducing the particular burdens to the small boat fixed gear fleets that come with carrying a human observer, while at the same time meeting monitoring objectives in a cost effective manner.
Again, on behalf of the Council and the NMFS, thank you for assisting us with this important initiative. Please contact me directly if you have any questions regarding this request.

Sincerely,

Chris Oliver

[Signature]

Executive Director
North Pacific Fishery Management Council

Attachment

c: Martin Loefflad, NMFS Observer Program Director
Jennifer Mondragon, NMFS Regional Office

Emailed to the following fishing associations:
Alaska Longline Fishermen’s Association, Linda Behnken, alfafish@acsalaska.net
834 Lincoln Street, Sitka AK 99835
Alaska Trollers Association, ata@gci.net
130 Seward #205, Juneau AK 99801
Cordova District Fishermen United, cdfu@ak.net
PO Box 939, Cordova AK 99574
Fishing Vessel Owner’s Association, Bob Alverson, roberta@fvoa.org
4005 20th Avenue W. Suite 232, Seattle WA 09199-1290
K-Bay Fisheries Association, David Polushkin, davidp@mtaonline.net
PO Box 4251, Homer AK 99603
North Pacific Fisheries Association, npfahomer@gmail.com
PO Box 796, Homer AK 99603
Petersburg Vessel Owner’s Association, Brian Lynch, pvoa@gci.net
P.O. Box 232, Petersburg AK 99833
Southeast Alaska Fishermen’s Alliance, Kathy Hansen, seafa@gci.net
9369 N Douglas Highway, Juneau AK
United Cook Inlet Drift Association, info@ucida.org
43961 K-Beach Road, Ste. E, Soldotna, Alaska 99669
United Fishermen of Alaska, Julianne Curry, ufa@ufa-fish.org
United Fishermen’s Marketing Association, Jeff Stephan, jstephan@ptialaska.net
This is intended to provide a short overview of electronic monitoring system components and vessel requirements to participate. More details can be found at:

- Study Description: [http://www.alaskafisheries.noaa.gov/sustainablefisheries/observers/empilotstudy.pdf](http://www.alaskafisheries.noaa.gov/sustainablefisheries/observers/empilotstudy.pdf)

**What does an electronic monitoring system do?**

The electronic monitoring (EM) system is designed to collect data about catch and discards, vessel location, and fishing activity. During the EM system installation, a Saltwater Inc. technician will work with you to determine the set-up most suited to your vessel. Data is collected continuously while vessels are at sea and retrieved by NMFS staff or representatives. This work is important to help NMFS build an electronic monitoring program to aid NMFS and the Council in providing information needed for fisheries management.

**What are the requirements to participate?**

- Less than 60’ fixed gear vessel targeting Halibut or Sablefish IFQ or groundfish
- Making 3 or more trips
- Can have equipment installed and removed in the ports of Kodiak, Homer, Petersburg, Seward or Sitka.

**What are the system components that NMFS will provide?**

- A computer for data collection and storage.
- A display monitor and keyboard for system monitoring by vessel crew.
- A magnetic drum sensor and or a hydraulic pressure sensor to trigger recording.
- A connection unit that connects the sensors and cameras.
- Two high definition IP cameras and GPS suitable for marine conditions to capture imagery of all gear and catch handling operations.

**What are the system requirements?**

- The EM control box should be continuously powered while the vessel is at sea.
- The EM system requires a power source of either 12-volts DC or 24-volts DC from the battery bank (minimum capacity 250 watts). A fuse or circuit breaker should be used with a capacity of 20 amps.
- The normal power consumption of the system is 75 watts or about 5.8 amps DC on a 12-volt DC system.
- EM systems running on 12-volt power will draw a maximum of 18 amps, while 24-volt power will be a maximum of 9 amps. The system has an integrated battery backup and when first connected will start charging the internal batteries and power up the system.

**What can industry members do to prepare their vessels to assist NMFS?**

- Ensure that there is an adequate power supply to meet the needs of the system.
- Decide which circuit the system will be installed on.

**For more information, contact:**

Farron Wallace, NMFS Observer Program, PH: (206) 526-4295 email: farron.wallace@noaa.gov
Elizabeth Chilton, NMFS Observer Program, PH: (206) 526-4197 email: elizabeth.chilton@noaa.gov
Jo Ann Alvarez, Saltwater Program Manager, PH: (907) 539-2548 Email: joann.alvarez@saltwaterinc.com
June 24, 2013

Mr. William Michaels
Fisheries Service, Office of Science and Technology
1315 East-West Highway, F/ST4
Silver Springs, MD 20910

Dear Mr. Michaels:

The North Pacific Fishery Management Council has identified priorities for research, over the next 1 to 5 years, as those activities that are the most important for the conservation and management of fisheries in the Gulf of Alaska, Aleutian Islands, eastern Bering Sea, and the Arctic. This listing of priorities has two purposes: 1) to meet the requirements of the revised Magnuson-Stevens Act for the Councils to identify research that is needed in the next 5 years, and 2) to provide guidance on research priorities to the research community and funding agencies. Research priorities are organized into four categories (critical, high, medium, and low), but within each category, are in no particular order of importance.

The Council would also like to highlight several current Council initiatives that are of high priority, and notes the research priorities that specifically relate to these initiatives:

1) Build Integrated Ecosystem Management capabilities
   Related research priorities: 110, 125, 142, 194, 198, 200, 203, 204, 205, 216, and 217.

2) Facilitate Council efforts to reduce impacts to chinook salmon
   Related research priorities: 119, 120, 184 and 188.

3) Increase knowledge of SSL fishery interactions and population dynamics
   Related research priorities: 126, 127, 128, 129, 130, 182 and 310.

Sincerely,

Chris Oliver
Executive Director

cc: William Chappel, Dr. Doug DeMaster, Ms. Molly McCammon, Dr. Jim Balsiger, Dr. Arthur Nowell, Dr. Ussif Rashid Sumailia, Dr. John Hilsiger, Dr. Michael Castellini, Ms. Cora Campbell, Dr. Phil Mundy, Robert Foy, Dr. Tara Riemer-Jones
Council’s Five-Year Research Priorities: 2013 through 2017  
(as adopted in June 2013)

### 2013 Research Priorities - Critical Priorities

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>District-wide survey for demersal shelf rockfish in Southeast Alaska</td>
<td>No Action</td>
</tr>
<tr>
<td></td>
<td>Conduct a district-wide survey for demersal shelf rockfish in Southeast Alaska on a biennial or triennial basis. Survey information is becoming extremely dated.</td>
<td></td>
</tr>
<tr>
<td>138</td>
<td>Continuation of State and Federal annual and biennial surveys</td>
<td>Underway</td>
</tr>
<tr>
<td></td>
<td>Continuation of State and Federal annual and biennial surveys in the GOA, AI, and EBS, including BASIS surveys and crab pot surveys, is a critical aspect of fishery management off Alaska. It is important to give priority to these surveys, in light of recent federal budgets in which funding may not be sufficient to conduct these surveys. Loss of funding for days at sea for NOAA ships jeopardizes these programs. Budgetary concerns have resulted in cuts to not only days at sea, which increases uncertainty, but also sampling the deepest strata, which threatens the value of trawl surveys as a synoptic ecological survey. These surveys provide baseline distribution, abundance, and life history data that form the foundation for stock assessments and the development of ecosystem approaches to management. Although an ongoing need, these surveys are considered the highest priority research activity, contributing to assessment of commercial groundfish and crab fisheries off Alaska.</td>
<td></td>
</tr>
<tr>
<td>146</td>
<td>Improve surveys in untrawlable habitat, particularly for rockfish, Atka mackerel, and sculpins</td>
<td>Partially Underway</td>
</tr>
<tr>
<td></td>
<td>For groundfish in general, and rockfish and Atka mackerel in particular, continue and expand research on trawlable and untrawlable habitat to improve resource assessment surveys. For example, improved surveys, such as hydro-acoustic surveys, are needed to better assess pelagic rockfish species that are found in untrawlable habitat or are semi-pelagic species such as northern and dusky rockfish. A number of publications specific to untrawlable grounds and rockfish sampling have been published recently, but have not been incorporated directly into stock assessment our routine survey designs.</td>
<td></td>
</tr>
</tbody>
</table>
## 2013 Research Priorities - High Priorities

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
</table>
| **101** | *Life history research on non-recovering crab stocks*  
**Status:** No Action  
Why certain stocks have declined and failed to recover as anticipated is a pressing issue (e.g., Pribilof Island blue king crab, Adak red king crab). Research into all life history components, including predation by groundfish on juvenile crab in nearshore areas, is needed to identify population bottlenecks, an aspect that is critically needed to develop and implement rebuilding plans. |
| **105** | *Spatial distribution of male snow crab*  
**Status:** Partially Underway  
There is a need to characterize the spatial distribution of male snow crab relative to reproductive output of females in the middle domain of the EBS shelf. |
| **107** | *Improve handling mortality rate estimates for crab*  
**Status:** Partially Underway  
Improve estimate of discarded crab handling mortality rate. This will require improving understanding of the post-release mortality rate of discarded crab from directed and non-directed crab pot fisheries and principal groundfish (trawl, pot, and hook and line) fisheries. The magnitude of post-release mortality is an essential parameter in the determination of the overfishing level used to evaluate overfishing in stock assessment and projection modeling. Empirical data exist for snow crab so new handling mortality data are needed for Tanner and king crab by size, sex, and fishery type with consideration of temperature. |
| **110** | *Maintain the core biological and oceanographic data (e.g., biophysical moorings, stomach data, zooplankton, age 0 surveys) necessary to support integrated ecosystem assessment*  
**Status:** Underway  
Maintain the core data needed to support integrated ecosystem assessments. Core data include inputs for single- or multi-species management strategy evaluations, food web, and coupled biophysical end-to-end ecosystem models (e.g. biophysical moorings, stomach data, zooplankton, age 0 surveys). |
| **114** | *Develop a spatially-explicit model for BSAI pollock*  
**Status:** Underway  
Conduct studies to determine stock structure and potential spatial management for BSAI pollock (e.g., movement). Evaluate interactions of BSAI pollock with those in Russian waters. These studies should lead to a detailed spatial age-structured stock assessment model with at least 3 regions (Russia, NW EBS, SE EBS). |
| **116** | *Studies to identify crab stock boundaries*  
**Status:** No Action  
Conduct studies to evaluate stock boundaries (e.g., Bristol Bay red king crab, Adak red king crab, Pribilof blue king crab). Studies are needed in the areas of genetics, reproductive biology, larval distribution, and advection. Mark-recapture studies are needed as well. |
117 **Study vertical distribution of Pacific cod to better understand catchability**  
**Status: Underway**  
Research is needed on the vertical distribution of Pacific cod relative to the EBS bottom trawl and comparisons of gear between the EBS and GOA trawl gear. This is because there is controversy about fishery and survey catchability.

118 **Pacific cod stock assessment for the Aleutian Islands**  
**Status: Underway**  
Develop Pacific cod stock assessment for the Aleutian Islands region. The Aleutian Islands and eastern Bering Sea regions will soon be split and get their own ABC’s and OFL’s. Therefore there is need to develop an assessment model for cod in the Aleutians.

119 **Evaluation of salmon PSC mitigation measures**  
**Status: Underway**  
Develop a research program that will facilitate evaluation of salmon (both Chinook and non-Chinook) PSC mitigation measures in the BSAI and GOA. This includes updated estimates of the amounts reasonably necessary for subsistence, timing of runs and openings relative to subsistence requirements, and access to cost data for the commercial pollock and salmon industries so that impacts on profits (not gross revenues) can be calculated.

120 **Improve knowledge for salmon PSC impact assessment**  
**Status: Underway**  
Improve the resolution of Chinook and chum salmon genetic stock identification methods (e.g., baseline development, marker development), improve precision of salmon run size estimates in western Alaska, and initiate investigations of biotic and abiotic factors influencing natural mortality rate during ocean migration in the GOA and BSAI. Baseline development is nearing completion, but more work on Cook Inlet chum is needed.

122 **Improve methods of monitoring fishery interactions**  
**Status: Underway**  
Develop improved catch monitoring methods of fishery interactions including direct and alternative options (e.g., electronic logbooks, video monitoring), particularly on smaller groundfish, halibut, and commercially guided recreational fishing vessels, including an assessment of feasibility for small vessels.

125 **Research ecosystem indicators and their thresholds for inclusion in ecosystem-level management strategy evaluation.**  
**Status: Underway**  
Initiate/continue research on the synthesis of ecosystem indicators, developing and evaluating thresholds for ecosystem indicators, and ecosystem-level management strategy evaluation.

126 **Evaluate interactions between fisheries and pinnipeds**  
**Status: Underway**  
Studies of the interactions between fisheries and protected species, such as Steller sea lions in the Central and Western Aleutian Islands (areas 541, 542, 543), and northern fur seals on the eastern Bering Sea shelf are needed. These studies should be conducted at appropriate spatial and temporal scales with an emphasis on seasonal prey fields, diet, and movement of fisheries and pinnipeds.
127 **Assess vital rates of Steller sea lions**  
*Status: Underway*  
Assess vital rates (i.e., reproduction and survival) of Steller sea lions in the western DPS (including Russia) at sufficient frequency to track population dynamics.

128 **Assess the health of Stellar sea lions**  
*Status: Underway*  
Assess possible indirect effects of fisheries removals via periodic health assessments, indices of body condition, survival of pups and juveniles, and natality of Steller sea lions in the western DPS.

129 **Quantify killer whale predation of Steller sea lions (M)**  
*Status: Underway*  
Quantify killer whale predation of Steller sea lions, particularly in the western and central Aleutian Islands.

135 **Conduct routine fish, crab, and oceanographic surveys in the northern Bering Sea and Arctic Ocean**  
*Status: Partially Underway*  
Dynamic ecosystem and environmental changes in the northern Bering Sea and Arctic are occurring. Assessment of the current baseline conditions and trophic interactions is important. This effort should not supplant the regular surveys in the BSAI and GOA, which are of critical importance to science and management.

136 **Effects of trawling on female red king crab and subsequent recruitment**  
*Status: Partially Underway*  
Research is needed on the effects of trawling on the distribution of breeding and ovigerous female red king crab and subsequent recruitment. Relevant studies include effects of potential habitat modifications on the distribution of females, particularly in nearshore areas of southwest Bristol Bay (partially underway), and environmental effects (e.g., trawling overlap in warm vs. cold years). Retrospective studies, the use of pop-up tags to identify larval release locations, and larval advection using Regional Ocean Modeling System would help address this need.

139 **Conduct routine surveys of subsistence in the northern Bering Sea and Arctic Ocean**  
*Status: Partially Underway*  
Conduct routine surveys of subsistence use of marine resources in the northern Bering Sea and Arctic Ocean. These surveys will become increasingly important under ongoing warming ocean temperatures because range expansions of harvested fishery resources may occur. If range expansions or shifts occur, data will be needed to adjust standard survey time series for availability.

141 **Estimate scallop stock abundance**  
*Status: No Action*  
Estimate scallop stock abundance in unsurveyed areas using fishery independent methods.

143 **Alternative approaches to acquire fishery-independent abundance data for Aleutian Islands golden king crab**  
*Status: No Action*  
Explore alternative approaches to the triennial ADF&G Aleutian Islands golden king crab pot survey to acquire fishery-independent abundance data on stock distribution and recruitment of Aleutian Islands golden king crab, including the potential for future cooperative research efforts with Industry.
144 **Assess seasonal diets and movements of fish and shellfish**

*Status: No Action*

Assess seasonal or species-specific information for use in improved assessment and management (e.g., expand or continue cooperative research). The data would be useful in studies of species interactions in spatially explicit stock assessments.

147 **Studies on factors that affect catchability particularly for Tanner crab and Aleutian Islands golden king crab**

*Status: Partially Underway*

For groundfish and crabs, studies are needed on factors that affect catchability, as they directly bear on estimates of the stock assessment. Research to refine the estimates of survey catchability, q, used to infer absolute, rather than relative, abundance would substantially improve the quality of management advice. Particular emphasis should be placed on Tanner crab because of recent trends in stock status, and on fishery and fishing gear selectivity for Aleutian Island golden king crab to improve the stock assessment model.

149 **Quantitative reproductive index for the surveyed BSAI crab stocks**

*Status: Underway*

Advance research towards developing a quantitative reproductive index for the surveyed BSAI crab stocks. Research on mating, fecundity, fertilization rates, and, for snow and Tanner crab, sperm reserves and biennial spawning, is needed to develop annual indices of fertilized egg production that can be incorporated into the stock assessment process and to model the effects of sex ratios, stock distribution, and environmental change on stock productivity. Priority stocks for study are eastern Bering Sea snow and Tanner crab and Bristol Bay red king crab.

151 **Acquire basic life history information (e.g., natural mortality, growth, size at maturity) for data-poor stocks.**

*Status: Partially Underway*

Acquire basic life history information needed for stock assessment, PSC, and bycatch management of data-poor stocks, such as scallops, sharks, skates, sculpins, octopus, grenadiers, squid, and blue king crab (Bering Sea), golden king crabs (Aleutian Islands), and red king crab (Norton Sound). Specifically, information is needed on natural mortality, growth, size at maturity, and other basic indicators of stock production/productivity).

157 **Develop and validate aging methods for crabs.**

*Status: No Action*

Develop and validate aging methods for crabs to improve estimates of M for stock assessments.

163 **Expanded studies to identify stock and management boundaries**

*Status: Underway*

To identify stock boundaries, expanded studies are needed in the areas of genetics, mark-recapture, reproductive biology, larval distribution, and advection. Such boundaries are to be evaluated so that consequences of management and risks are clear. Verify stock structure and source/sink dynamics including physical oceanographic, genetic and life-history studies.

164 **Develop spatially explicit stock assessment models**

*Status: Partially Underway*

Develop spatially explicit stock assessment models. High priority species for spatially explicit models include: walleye pollock, snow crab, Pacific cod, sablefish, yellowfin sole, rock sole, arrowtooth flounder, Pacific ocean perch, black spotted rockfish, rougheye rockfish, and Atka mackerel.
166 Develop age-structured models for scallop assessment
   Status: Partially Underway
   Age structured models for scallop are needed to increase understanding of population dynamics and harvestable surpluses.

167 Refine methods to incorporate uncertainty into harvest strategies for groundfish
   Status: Underway
   Refine P* and decision theoretic methods to incorporate uncertainty into harvest strategies for groundfish for ACL estimation. Continue existing management strategy evaluations at the stock level.

168 Conduct prospective and retrospective analyses of changes in the spatial and temporal distribution of fishing effort in response to management change
   Status: Underway
   Conduct prospective and retrospective analyses of changes in the spatial and temporal distribution of fishing effort, in response to management actions (e.g., time/area closures, marine reserves, PSC and other bycatch restrictions, co-ops, IFQs).

169 Develop a framework for collection of economic information
   Status: Partially Underway
   Develop a framework for collection of economic information on commercial, recreational, and charter fishing, as well as fish processing, to meet the requirements of the MSFCMA sections 303(a)(5, 9, 13), 303(b)(6), and 303A.

179 Conduct pre- and post-implementation studies of the benefits and costs, and their distribution, associated with dedicated access privileges
   Status: Partially Underway
   Conduct pre- and post-implementation studies of the benefits and costs, and their distribution, associated with changes in management regimes (e.g., changes in product markets, characteristics of quota share markets, changes in distribution of ownership, changes in crew compensation) as a consequence of the introduction of dedicated access privileges in the halibut/sablefish, AFA pollock, and crab fisheries. “Benefits and costs” include both economic and social dimensions.

181 Economic, social, and cultural valuation research on protected species
   Status: Underway
   Economic, social, and cultural valuation research on protected species is needed (i.e., non-market consumptive use, passive use, non-consumptive use).

182 Foraging ecology studies of Steller sea lions
   Status: Underway
   Foraging ecology studies of Steller sea lions in the Gulf of Alaska, Aleutian Islands, and Russia are needed, including at-sea tracking of older animals, and diet composition of sea lions throughout the region.

188 Evaluate current and alternative Council PSC/bycatch reduction initiatives
   Status: Partially Underway
   Analyze the effects of recent Council actions on PSC and bycatch, including the interaction among PSC and bycatch reduction initiatives (e.g., halibut, salmon, crab). Attention should be given to different incentives that have the potential to cost-effectively reduce PSC.
194 Research the role of habitat in fish population dynamics, fish production (growth, reproduction), and ecosystem processes

   Status: Partially Underway
   Research is needed on the role of habitat in fish population dynamics, fish production, and ecosystem processes. Specifically, studies are needed to evaluate how habitat-forming species (e.g., corals) influence life history parameters (e.g., mortality, growth, movement) of FMP species and their preferred prey. Such research will identify key habitats (including essential fish habitat and habitat areas of particular concern), improve the design and management of marine protected areas, and ultimately improve stock assessments and restoration efforts.

195 Evaluate efficacy of habitat closure areas and habitat recovery

   Status: Partially Underway
   Establish a scientific research and monitoring program to understand the degree to which impacts on habitat, benthic infauna, etc., have been reduced within habitat closure areas, and to understand how benthic habitat recovery of key species is occurring. (This is an objective of EFH research approach for the Council FMPs).

198 Maintain moorings and develop/maintain a sea ice formation, sea ice retreat, and spring bloom indices for the EBS

   Status: Partially Underway
   Develop and maintain indices of sea ice formation, sea ice retreat, and timing/extent of the spring bloom for the EBS. For this, maintenance of moorings, especially M-2, is essential. If recent changes in ice cover and temperatures in the Bering Sea persist, these may have profound effects on marine communities.

200 Collect and maintain zooplankton biomass and community composition time series

   Status: Partially Underway
   Collect and maintain zooplankton biomass and community composition time series in the eastern Bering Sea. Develop, collect and maintain time series of zooplankton biomass and community composition for the GOA, AI, Arctic.

203 Maintain indicator-based ecosystem assessment for EBS.

   Status: Underway
   Maintain indicator-based ecosystem assessment for EBS.

204 Develop indicator-based ecosystem assessments for AI (in progress), GOA, Arctic.

   Status: Partially Underway
   Develop indicator-based ecosystem assessments for AI (in progress), GOA, and the Arctic.

205 Develop stock-specific ecosystem indicators and incorporate into stock assessments

   Status: Partially Underway
   Develop stock-specific ecosystem indicators and incorporate into stock assessments. (in progress)

216 Collect and maintain time series of ocean pH

   Status: Partially Underway
   Collect and maintain time series of ocean pH in the major water masses off Alaska to improve understanding of ocean acidification and its effects on managed species, upper level predators and lower trophic levels.
217 Assess whether changes in pH would affect managed species, upper level predators, and lower trophic levels.
   Status: Partially Underway
   Assess whether changes in pH would affect managed species, upper level predators, and lower trophic levels.

220 Collect, analyze, and monitor diet information
   Status: Underway
   Collect, analyze, and monitor diet information (species, biomass, energetics), from seasons in addition to summer, to assess spatial and temporal changes in predator-prey interactions, including marine mammals and seabirds. The diet information should be collected on the appropriate spatial scales for key predators and prey to determine how food webs may be changing in response to shifts in the range of crab and groundfish.

301 Investigate ecosystem effects and inter-species interactions of halibut
   Status: Underway
   Investigate potential ecosystem effects and inter-species interactions on Pacific halibut recruitment and size-at-age. Includes integration of existing IPHC and NOAA trawl survey observations of size-at-age, diet, and population distribution and trends for multiple species in the GOA and BS.

302 Study temporal and spatial patterns in size-at-age of Pacific halibut
   Status: Underway
   Reanalyze historical records of Pacific halibut size-at-age. Requires identifying samples from consistent spatial areas as well as re-ageing of older samples that utilized differing methods for age determination. Relate observed patterns to somatic growth via otolith increment analysis and development of bioenergetics model relating long-term environmental and ecological drivers to halibut size-at-age. Continue to explore the potential role of fishing in observed size-at-age trends via direct or evolutionary pathways and the interaction with size-selective fishing, include these analyses in harvest policy analyses.

305 Study Pacific halibut PSC, bycatch, and discard behavior in fisheries
   Status: Underway
   Continue to explore management actions that reduce the incentives for PSC-, bycatch- and discard-related mortality of Pacific halibut. Evaluation of observer coverage, accuracy, and representativeness of PSC and bycatch estimates should be included.

306 Effects of changes to the observer program
   Status: Partially Underway
   Evaluate the effects on biological parameter estimates and on estimated catch, bycatch, and PSC from changes to data collection protocols that occur because of the observer restructuring. Ensure that data can be compared easily to the previous data collection methods so that time series remain intact. Improve biological data collection including representative length and age samples from all sectors of the fleet. Attempt to separate temporal changes from sampling design effects.

310 Develop a simulation model of Steller sea lion fishery interactions
   Status: No Action
   Management strategy evaluation tools based on coupled bio-physical models with fishing and top trophic level foragers (e.g., Steller sea lions) should be developed to evaluate the performance of different harvest strategies, to inform future management decisions, and to prioritize field studies.
Continue to improve stock assessment methodology with respect to uncertainty

Status: Underway
Recent studies have made advances in determining effective sample size, effective number of parameters, Bayesian parameterizations, and how to weight datasets in assessments with multiple datasets. However, results appear to vary from paper to paper, and no general rules have emerged. Thus, our ability to characterize uncertainty remains elusive.

Continue to investigate time variation and the shape of fishery and survey selectivity models

Status: Underway
There is considerable controversy about (1) whether selectivity should be dome-shaped or asymptotic, and (2) whether selectivity should be time-varying by default. Using a dome-shaped curve can create a large increase in biomass which may not be real. Treating selectivity as time-varying increases the number of model parameters greatly, which may lead to confounding among parameters. Better scientific guidance through research studies is needed to address these two problems.

Updated sperm whale stock assessment

Status: No Action
Updated sperm whale abundance estimates are needed. Sperm whale depredation interactions with longline fisheries have increased, but little is known about sperm whale populations. Updated population estimates and defined PBR's are needed to effectively respond if a take occurs in the longline fishery.

Verify coral and sponge distribution model projections in the Bering Sea

Status: No Action
Verify AFSC model projections of coral and sponge distribution throughout the Bering Sea slope and canyons.
# 2013 Research Priorities - Medium Priorities

<table>
<thead>
<tr>
<th>#</th>
<th>Priority</th>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td><strong>Catch accounting of crab sex and size</strong></td>
<td>Partially Underway</td>
<td>Improvements are needed for catch accounting by sex and size for crab in non-directed fisheries with high bycatch or PSC rates, particularly for blue king crab in the Pacific cod pot fishery in the Pribilof Islands.</td>
</tr>
<tr>
<td>103</td>
<td><strong>Methods for reliable estimation of total removals</strong></td>
<td>Underway</td>
<td>Develop methods for reliable estimation of total removals (e.g., surveys, poorly observed fisheries) to meet requirements of total removals under ACLs. Catch Accounting System now provides total removals annually. Improved reporting on some data such as subsistence catches and Pacific cod bait in crab fisheries is needed.</td>
</tr>
<tr>
<td>106</td>
<td><strong>Improve discard mortality rate estimates for scallop</strong></td>
<td>Partially Underway</td>
<td>Field studies estimating Alaskan scallop discard mortality: relationship between capture, release condition and survival of scallops.</td>
</tr>
<tr>
<td>108</td>
<td><strong>Tagging studies of Aleutian Islands Pacific cod and Atka mackerel</strong></td>
<td>Underway</td>
<td>Tagging studies of Aleutian Islands Pacific cod, Atka mackerel, Alaska skate, and walleye pollock are needed to create models of short-term movement of fish relative to critical habitat (tagging for Atka mackerel and skates are partly underway).</td>
</tr>
<tr>
<td>109</td>
<td><strong>Age determination methods for Pacific cod, Pacific sleeper sharks, and spiny dogfish</strong></td>
<td>Partially Underway</td>
<td>Studies are needed to validate and improve age determination methods for Pacific cod, Pacific sleeper sharks, and spiny dogfish. Conventional tagging studies of young of the year and/or one-year old Pacific cod would be useful in this regard (partially underway for cod and dogfish).</td>
</tr>
<tr>
<td>111</td>
<td><strong>Biomass indices and alternate methodologies for lowest tier species</strong></td>
<td>Underway</td>
<td>Develop biomass indices for lowest tier species (Tier 5 for crab, Tier 6 for groundfish), such as sharks and octopus. Explore alternative methodologies for Tier 5 and 6 stocks such as length-based methods, catchability experiments (e.g., net selectivity), or biomass dynamics models.</td>
</tr>
<tr>
<td>112</td>
<td><strong>Analyses of fishery effort and observer data for scallop</strong></td>
<td>No Action</td>
<td>Assess impacts of temporal and spatial effort by a limited number of vessels on CPUE and observer data for management purposes.</td>
</tr>
<tr>
<td>113</td>
<td><strong>Research on stock-recruit relationships</strong></td>
<td>Underway</td>
<td>New information and data are needed that would inform our understanding of the stock-recruit relationship for groundfish, Pacific halibut, and crab to project year-class strength.</td>
</tr>
<tr>
<td>Priority</td>
<td>Description</td>
<td>Status</td>
<td>Details</td>
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<tr>
<td>121</td>
<td>Investigate factors affecting the guided angler sector of the halibut fishery</td>
<td>Underway</td>
<td>Continue to investigate factors that affect angler demand in the guided angler sector of the halibut fishery resulting from regulatory changes under consideration by the North Pacific Management Council or general economic conditions.</td>
</tr>
<tr>
<td>123</td>
<td>Develop bioeconomic models</td>
<td>Partially Underway</td>
<td>Develop bioeconomic models with explicit age- or size-structured population dynamics for BSAI and GOA groundfish fisheries to estimate maximum economic yield and other bioeconomic reference points under uncertainty.</td>
</tr>
<tr>
<td>124</td>
<td>Benefits and costs of directed halibut catch and halibut PSC utilization</td>
<td>Underway</td>
<td>Research the benefits and costs of directed halibut catch and halibut PSC utilization in different fishing sectors. For halibut and other PSC and bycatch species, conduct research to better identify where regulations restrict the utilization of fish from its most beneficial use and evaluate how changes in existing regulations would affect different sectors and fisheries.</td>
</tr>
<tr>
<td>130</td>
<td>Develop methods to estimate sea lion abundance</td>
<td>Underway</td>
<td>Develop new methods to estimate sea lion abundance, such as the use of unmanned aerial vehicles, which could increase the probability of acquiring abundance estimates in remote areas.</td>
</tr>
<tr>
<td>131</td>
<td>Assess the impact of the displacement of the groundfish fleet on Northern fur seals</td>
<td>Partially Underway</td>
<td>Assess the impact of the displacement of the groundfish fleet due to Steller sea lion protection measures on the prey availability, foraging ecology, diet, movements, and vital rates for Northern fur seals.</td>
</tr>
<tr>
<td>132</td>
<td>Evaluate the impact of seabird bycatch in fisheries on bird populations, and methods to reduce</td>
<td>Underway</td>
<td>Assess the extent and impact of seabird bycatch in fisheries on bird populations, and develop methods to reduce seabird bycatch, particularly protected species, such as short-tailed albatross.</td>
</tr>
<tr>
<td>133</td>
<td>Determine potential impacts of fishing activities on marine mammals</td>
<td>No Action</td>
<td>Determine potential impacts of fishing activities on marine mammals (e.g., state managed gillnet fisheries), and in particular on North Pacific right whales and the Eastern North Pacific blue whales, particularly in identified critical (NPRW) or essential (NPBW) habitat.</td>
</tr>
<tr>
<td>134</td>
<td>Assess whether Bering Sea canyons are habitats of particular concern</td>
<td>Partially Underway</td>
<td>Assess whether Bering Sea canyons are habitats of particular concern by assessing the distribution and prevalence of coral and sponge habitat, and comparing marine communities within and above the canyon areas, including a comparison of mid-level and apex predators to neighboring shelf/slope ecosystems.</td>
</tr>
<tr>
<td>137</td>
<td>Impact of fisheries on benthic habitat and trophic interactions</td>
<td>Underway</td>
<td>Impact of bottom trawl fisheries on invertebrate abundance and species composition in benthic habitats. This is especially relevant to the foraging ecology of walrus (candidate species for listing under ESA), but also bearded seals, and gray whales.</td>
</tr>
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</table>
142  **Survey capability for forage fish**  
**Status: Partially Underway**  
Develop a long-term survey capability for forage fish (partially underway). The NPRB funded GOA and Bering Sea projects are currently describing the spatial and temporal variability in the structure of forage fish communities and the effect of this variability on predators. This work should be continued and methods for long-term monitoring should be developed.

145  **Monitor skate egg case concentration sites**  
**Status: No Action**  
The HAPC action for skate egg case concentration sites included two recommendations that the Council suggested should be addressed during the annual research priority discussion: (a) skate egg case concentrations should be monitored every 2 to 3 years using non-invasive research design, such as in situ observation; and (b) skate conservation and skate egg concentration areas remain a priority for EFH and HAPC management and within Council and NMFS research plans.

148  **Research on survey analysis techniques for species that exhibit patchy distributions**  
**Status: No Action**  
Continue research on the design and implementation of appropriate survey analysis techniques, to aid the Council in assessing species (e.g., some crabs and rockfish) that exhibit patchy distributions and, thus, may not be adequately represented (either over- or under-estimated) in the annual or biennial groundfish surveys.

150  **Collect maturity scans during fisheries that target spawning fish**  
**Status: Underway**  
Expand existing efforts to collect maturity scans during fisheries that target spawning fish (e.g., pollock). Time series of maturity at age should be collected to facilitate the assessment of the effects of density-dependence and environmental conditions on maturity. Maturity information for pollock and Pacific cod is collected by observers and should be analyzed. Maturity information for rockfish species near Kodiak has been collected recently, both during the fishery and dedicated scientific cruises, and should be analyzed. A dedicated survey to examine spawning sablefish has also been conducted. Efforts to collect maturity data, and then analyze for rockfish and other species should continue. In particular, retrospective studies to identify factors (e.g., fishing, climate, prey quality and quantity) influencing the maturity schedule should be conducted.

156  **Improve estimates of natural mortality (M) for Pacific cod and crab stocks.**  
**Status: Partially Underway**  
Improve estimates of natural mortality (M) for several stocks, including Pacific cod and BSAI crab stocks.

160  **Develop and evaluate global climate change models (GCM) or downscaled climate variability scenarios on recruitment, growth, spatial distribution**  
**Status: Underway**  
Quantify the effects of historical climate variability and climate change on recruitment, growth, and spatial distribution, develop standard environmental scenarios (e.g., from GCMs) for present and future variability based on observed patterns.

161  **Climate and oceanographic information covering a wider range of seasons is needed**  
**Status: Partially Underway**  
There is also a need for climate and oceanographic information that covers a wider range of seasons than is presently available.
162 Development of projection models to evaluate (a) the robustness and resilience of different management strategies under varying environmental and ecological conditions and (b) to forecast seasonal and climate related population shifts

   Status: Partially Underway
   There is a need for the development of projection models to evaluate the robustness and resilience of different management strategies under varying environmental and ecological conditions. Projection models are also needed to forecast seasonal and climate related shifts in the spatial distribution and abundance of commercial fish and shellfish.

170 Continue to evaluate the economic effects from crab rationalization programs on coastal communities.

   Status: Underway
   Continue to evaluate the economic effects from crab rationalization programs on coastal communities. This includes understanding economic impacts (both direct and indirect) and how the impacts are distributed among communities and economic sectors.

171 Improve estimation of fishery interactions with non-target groundfish, and prohibited species.

   Status: No Action
   Improve estimation of fishery interactions (including catch) and non-target groundfish (e.g., sharks, skates), and prohibited species.

172 Conduct studies documenting the subsistence harvest (patterns, norms, quantities) in communities affected by Council actions.

   Status: Partially Underway
   Conduct studies documenting the subsistence harvest patterns, norms and quantities in communities that depend upon resources that may be affected by Council action.

173 Evaluate the effectiveness of setting ABC and OFL levels for data-poor stocks

   Status: Partially Underway
   Evaluate the effectiveness (e.g., potential for overharvest or unnecessarily limiting other fisheries) of setting ABC and OFL levels for data-poor stocks (Tier 5 and 6 for groundfish and Tiers 4 and 5 for crab, e.g., squid, octopus, shark, sculpins, other flatfish, other rockfish, skates, grenadier, and crab). Research is needed to refine the basis for setting gamma for Tier 4 crab stocks.

174 Examine interactions between coastal communities and commercial fisheries

   Status: Underway
   Examine interactions between coastal communities and commercial fisheries (e.g. subsistence-commercial linkages, adaptations to changes in resource use, economic opportunities for coastal communities).

175 Retrospective analysis of the impact of Chinook salmon PSC avoidance measures on the BSAI pollock fishery

   Status: Partially Underway
   Conduct retrospective analyses to assess the impact of Chinook salmon PSC avoidance measures on the BSAI pollock fishery. Analyses should include an evaluation of the magnitude and distribution of economic effects of salmon avoidance measures for the Bering Sea pollock fishery. In this case, it is important to understand how pollock harvesters have adapted their behavior to avoid bycatch of Chinook and “other” salmon, under various economic and environmental conditions and incentive mechanisms.
176  Develop management strategy evaluations that incorporate changing climate and market economic conditions.
   Status: Partially Underway
Develop management strategy evaluations under differing assumptions regarding climate and economic conditions. Promote the standardization of “future scenarios” from different models to promote comparability of model outputs.

177  Develop an ongoing database of product inventories
   Status: No Action
Development of an ongoing database of product inventories (and trade volume and prices) for principal shellfish, groundfish, Pacific halibut, and salmon harvested by U.S. fisheries in the North Pacific and eastern Bering Sea.

178  Analyze current determinants of demand for principal seafood products
   Status: Partially Underway
Analyze current determinants of ex vessel, wholesale, international, and retail demand for principal seafood products from the GOA and BSAI.

184  Investigate gear modifications and changes in fishing practices to reduce bycatch and PSC
   Status: Partially Underway
Gear modifications and changes in fishing practices to reduce bycatch and PSC are needed.

185  Conduct studies of sperm whale and killer whale depredation of catch in long-line fisheries and surveys
   Status: Underway
Studies of sperm and killer whale depredation of catch in long-line fisheries and surveys are needed to improve the quality of long-line abundance estimates.

191  Improved habitat maps
   Status: Partially Underway
Improved habitat maps (especially benthic habitats) are required to identify essential fish habitat and distributions of various substrates and habitat types, including habitat-forming biota, infauna, and epifauna in the GOA, BS, and Aleutian Islands.

192  Develop a GIS relational database for habitat, to include a historical time series of the spatial intensity of interactions between commercial fisheries and habitat.
   Status: Partially Underway
Develop a GIS relational database for habitat, including development of a historical time series of the spatial intensity of interactions between commercial fisheries and habitat. Such time series are needed to evaluate the impacts of changes in fishing effort and type on EFH.

193  Assess the extent of the distribution of corals
   Status: Partially Underway
Assess the extent of the spatial distribution of corals and conduct routine monitoring of these areas.

196  Develop a multivariate index of the climate forcing of the Bering Sea shelf
   Status: Partially Underway
Develop a multivariate index of the climate forcing of the Bering Sea shelf. Three biologically significant avenues for climate index predictions include advection, setup for primary production, and partitioning of habitat with oceanographic fronts and temperature preferences.
197  Develop bottom and water column temperature database and indices
   Status: Partially Underway
   Develop bottom and water column temperature database and indices for use in EBS, GOA, and AI stock assessments.

199  Collect and maintain primary production time series
   Status: No Action
   Collect and maintain primary production time series in the EBS, AI, GOA, and Arctic; particularly in relationship to key climate and oceanographic variables.

201  Collect and maintain data on forage fish community composition and abundance
   Status: Partially Underway
   Collect and maintain data on forage fish community composition and abundance in the Bering Sea, GOA, AI, Arctic.

202  Collect and maintain time-series data on the community composition, production and biomass of benthic invertebrate and vertebrate fauna
   Status: Partially Underway
   Collect and maintain time-series data on the community composition, production and biomass of benthic invertebrate and vertebrate fauna.

207  Assess the impact of increases in recovering whale populations on lower trophic level energy pathways
   Status: No Action
   Assess the impact of increases in recovering whale populations (e.g., gray, humpback and fin) on lower trophic level energy pathways.

209  Cooperative research efforts to supplement existing at-sea surveys that provide seasonal, species-specific information on upper trophic levels
   Status: Partially Underway
   Continue and expand cooperative research efforts to supplement existing at-sea surveys that provide seasonal, species-specific information on upper trophic levels (seabirds and marine mammals). Updated surveys to monitor distribution and abundance of seabirds and marine mammals are needed to assess impacts of fisheries on apex predators, improve the usefulness of apex predators as ecosystem indicators, and to improve ecosystem management.

211  Assess the relative importance of non-commercially exploited species to human communities
   Status: Partially Underway
   Assess the relative importance of non-commercially exploited species (invertebrates, fish, marine mammals, and seabirds) to human communities, particularly in Arctic.

214  Measure and monitor fish composition
   Status: No Action
   Measure and monitor fish composition: evaluate existing data sets (bottom trawl surveys, acoustic trawl surveys, and BASIS surveys) to quantify changes in relative species composition of commercial and non-commercial species, identify and map assemblages, monitor changes in the distribution of assemblages, and understand the spatial importance of predator-prey interactions in response to environmental variability. Additional monitoring may be necessary in the Aleutian Islands, northern Bering Sea, and areas of the Gulf of Alaska.
215 Assess the movement of fish to understand the spatial importance of predator-prey interactions in response to environmental variability
   Status: Partially Underway
   Assess the movement of fish in response to environmental variability to understand the spatial changes of predator-prey interactions.

221 Conduct ecosystem structure studies
   Status: Underway
   Studies are needed to evaluate the effects of global warming, ocean acidification, and selective fishing on food webs. For instance, studies are needed to evaluate differential exploitation of some components of the ecosystem (e.g., Pacific cod, pollock, and crab) relative to others (e.g., arrowtooth flounder).

223 Modeling studies of ecosystem productivity
   Status: Underway
   Modeling studies of ecosystem productivity in different regions (EBS, GOA, and AI). For example, studies could evaluate the appropriateness of the 2 million t OY cap.

300 Assess the population status of harbor seals in the Aleutian Islands and determine factors affecting their population trajectories
   Status: No Action
   Assess the population status of harbor seals in the Aleutian Islands and determine factors affecting their population trajectories.

307 Determine quantitative indicators of spatial structure, particular for walleye pollock and Pacific cod
   Status: No Action
   The next generation of stock assessment models will be spatial age- and length-structured assessment models, in line with the goal of ecosystem-based fishery management. Current distributions of spatial location have been empirically summarized, but methods should be explored to convert these to movement patterns for biological and/or management regions.

308 Investigate in situ methods of tagging species that experience barotrauma
   Status: No Action
   Species with swim bladders experience barotrauma, so that tagging studies result in high mortality and little information. Icelandic and Norwegian scientists have developed in situ methods for tagging, so that these fish never change depth. This could provide precise estimates of movement rates from tagging studies needed for spatial stock assessments. Such a recommendation for walleye pollock is found in a 2011 Report of a Workshop on Spatial Structure and Dynamics of Walleye pollock (AFSC Processed Report 2011-04).

309 Effects of changes to the observer program
   Status: No Action
   Evaluate the effects of changes to data collection protocols that occur because of observer restructuring. Ensure that data can be compared easily to the previous data collection methods and time series remain intact.
313  Retrospective analysis of the impact of Chinook PSC avoidance measures on communities of western Alaska
    Status: No Action
    Conduct retrospective analysis using qualitative and quantitative methods on salmon dependent communities of western Alaska that may be affected by Chinook salmon PSC avoidance measures in the BSAI. Analysis should evaluate long-term changes in local Chinook abundance and uses, and provide detailed ethnographic work exploring the meaning of salmon to these communities in the context of industrialized offshore fisheries.

315  Area-specific variability in scallop population processes
    Status: No Action
    Investigate area-specific variability in vital population processes including growth, recruitment, natural mortality and movement.
### 2013 Research Priorities - Low Priorities

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Status</th>
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<tbody>
<tr>
<td>104</td>
<td><strong>Improve species identification</strong>&lt;br&gt;<strong>Status:</strong> Partially Underway&lt;br&gt;Improve species identification, by both processors and observers, for priority species within species complexes in catches, to meet requirements of total removals under ACLs. Methods that quantify and correct for misidentifications are desired.</td>
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<td>140</td>
<td><strong>Identification and integration of archived data</strong>&lt;br&gt;<strong>Status:</strong> Partially Underway&lt;br&gt;Identification and recovery of archived data (e.g., historical agency groundfish and shellfish surveys) should be pursued. Investigate integrating these data into stock and ecosystem assessments. Some archival acoustic data have been cataloged, and most trawl surveys have been included in databases. Some one-time research surveys remain neglected.</td>
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<td>154</td>
<td><strong>Conduct multivariate analysis of bycatch data from the scallop observer program</strong>&lt;br&gt;<strong>Status:</strong> Underway&lt;br&gt;Conduct multivariate analysis of bycatch data from the scallop observer program (haul composition data) and camera sled data. The analysis should include an investigation of localized depletion of scallops relative to fishing effort.</td>
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<tr>
<td>159</td>
<td><strong>Evaluate hybridization of snow and Tanner crabs.</strong>&lt;br&gt;<strong>Status:</strong> No Action&lt;br&gt;Evaluate the assessment and management implications of hybridization of snow and Tanner crabs.</td>
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<td>206</td>
<td><strong>Develop methodologies to monitor for new/emerging diseases and/or parasites among exploited species and higher trophic levels</strong>&lt;br&gt;<strong>Status:</strong> No Action&lt;br&gt;Develop methodologies to monitor for new/emerging diseases and/or parasites among exploited species and higher trophic levels.</td>
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<td>210</td>
<td><strong>Initiate and expand non-market valuation research of habitat, ecosystem services, and passive use considerations</strong>&lt;br&gt;<strong>Status:</strong> No Action&lt;br&gt; Initiate and expand non-market valuation research of habitat, ecosystem services, and passive use considerations.</td>
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<td>218</td>
<td><strong>Assess the synergistic effects of ocean acidification, oil, dispersants, and changes in temperature on productivity of marine species.</strong>&lt;br&gt;<strong>Status:</strong> No Action&lt;br&gt;Laboratory studies are needed to assess the synergistic effects of ocean acidification, oil, dispersants, and changes in temperature on productivity of marine species.</td>
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<tr>
<td>219</td>
<td><strong>Monitor contaminant flux and loads in lower and higher trophic levels, and assess potential for impact on vital rates.</strong>&lt;br&gt;<strong>Status:</strong> No Action&lt;br&gt;Monitor contaminant flux and loads in lower and higher trophic levels, and assess potential for impact on vital rates.</td>
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</tbody>
</table>
303  Determine effects of migration on the Pacific halibut population and management
   Status: Underway
   Extend existing analyses of tagging studies to include age-specific components. Continue to evaluate the role of migration in contributing to population dynamics and trends associated with area-specific catch, PSC levels, and downstream effects.

304  Investigate long term effects of fishing on Pacific halibut
   Status: Underway
   Collect genetic samples for future comparison.

316  Ocean Acidification and Scallops: monitoring water quality
   Status: No Action
   Seasonal water quality monitoring in known scallop areas

317  Effects of Ocean Acidification on Scallops
   Status: No Action
   Studies to understand the mineralization of scallop shells through life cycle and across spatial variability
Dear Mr. Olson,

On behalf of the board of directors, myself and over 400 business members the Juneau Chamber of Commerce would like to express our appreciation to the North Pacific Fishery Management Council for choosing Juneau as your 2013 Annual meeting destination. Our community was honored to have NPFMC here and we hope that your stay in the Capital City was a pleasant experience from start to finish.

Visitors are a large part of the economy in Juneau and the business community sincerely appreciates the 200 plus people your organization brought to Juneau for the meeting.

We hope you will consider Juneau for a future NPFMC meeting.

Best regards,

Cathie Roemmich, CEO

cc: Chris Oliver, NPFMC Executive Director
Vince O’Shea, Pacific Seafood Processors Association
June 5, 2013

Chairman Olson
North Pacific Fishery Management Council
605 W. 4th Avenue, Suite 306
Anchorage, AK 99501

RE: Alaska Department of Fish and Game real-time VMS access

Dear Chairman Olson,

Thank you for your letter dated April 17, 2013 regarding the Alaska Department of Fish and Game (ADFG) access to VMS data via the current software (vTrack). Though we have resolved the issue at hand, it is important for you and the Council to have the following background information and timeline which highlights the complexity of the issue.

BACKGROUND

VMS real-time data identifies the current location of a vessel. Though there is some ability to surmise the activity of a vessel by observing the on-screen depiction of the data, it does not identify the vessel’s activity with any certainty and does not capture catch data. The functionality of the VMS software (vTrack) in conjunction with landings data and observer data may assist with management decisions. Absent other data, VMS real-time data simply identifies a vessel and its current location. The VMS real-time data can and has been used with platforms other than vTrack with success.

NOAA Office of Law Enforcement (OLE) offers direct access to VMS data, by way of vTrack accounts, to personnel in the fisheries law enforcement offices of our Joint Enforcement Agreement (JEA) partner States. We make VMS data available to State fisheries management offices by request without providing direct access to the System. This differentiated data-sharing practice holds true for all of our JEA partner states.

- In June 2012, OLE conducted an audit of all JEA vTrack user accounts.
- NOAA identified five ADFG accounts that appeared to fall outside of the national data access policy. It was determined that the users were not sworn law enforcement personnel and not employed by the Cooperative Enforcement Program (CEP) partner organization. An email was sent on 10/23/2012 to give the affected account-holders notice that their accounts had been disabled.
• Director Buckson received a letter from the Commissioner of ADFG, dated 12/19/2012, which requested reinstatement of the disabled vTrack accounts. Director Buckson denied the reinstatement of the accounts in his response letter dated 01/24/2013.

• In preparing a response for the ADFG Commissioner, OLE made additional inquiry into ADFG’s uses of and need for VMS data. After discussions with the AK Troopers, our AK Divisional leadership, and also after a 01/07/2013 call with Karla Bush of ADFG, it was not made evident to OLE that real-time data was especially critical to AK’s management efforts so as to warrant an exception to our policy and to give special allowance to the state of Alaska.

• ADFG has a need for vTrack functionality for use with landings data and observer data to manage AK fisheries in-season.

• The details of the original agreement that was made to create the ADFG accounts is vague. The request from ADFG for an agreement in 2007 is documented, though there is no record of an MOU or other final agreement. Nicole Kimball from ADFG indicated in an 07/06/2012 email, that it was her “understanding thus far is that there was no formal signed MOU/agreement,...” ADFG access was granted via a memo from OLE serving as an agreement.

• OLE’s national data policy is intended to ensure the system is optimized and available for law enforcement purposes while providing the data to other users as requested.

While the Office of Law Enforcement’s long standing VMS data access policy does not provide for real-time VMS access to the nation’s State fishery managers, we have determined that the development and management of the Bering Sea and Aleutian Islands King and Tanner Crabs Fishery Management Plan and the Scallop Fishery off Alaska Fishery Management Plan create a unique management structure that will allow us to provide the requested access to VMS data for Alaska Department of Fish and Game employees who are responsible for FMP development and monitoring.

We have concluded an exhaustive examination of the unique state versus federal fisheries management relationship for those Alaska Region, federal FMPs that delegate/defer management of their subject fisheries to the State of Alaska. The result is OLE’s conclusion that the affected State employees are managing these federal fisheries to an extent that, in effect, situates them as federal fishery managers. By policy, we do give real time VMS data access to federal fishery managers, and so we will reinstate the affected State employees’ vTrack accounts.

We will provide Commissioner Campbell, Alaska Department of Fish and Game a copy of this letter with instructions on the process to reactivate the ADFG employee VMA accounts.

Sincerely,

Bruce Buckson

Director, NOAA Office of Law Enforcement

cc: Tracy Dunn, Kelly Spalding, Jim Balsiger, Matt Brown
June 21, 2013

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

Dear Chairman Olson:

Enclosed is a copy of the Department of Commerce’s (DOC’s) revised tribal consultation policy, which was published in the Federal Register on June 4, 2013 (78 FR 33331). On July 8, 2011, the North Pacific Fishery Management Council requested clarification about its role in tribal consultations under Executive Order (E.O.) 13175. DOC addresses this issue in its response to comment 5 on page 33332 by determining that the fishery management councils are not responsible to consult with tribes under E.O. 13175.

DOC’s determination is reproduced below:

Council meetings are a critical part of the fishery management planning process and are the first and earliest point of development for fishery management policy. It is most beneficial to Tribes, Councils and National Oceanic and Atmospheric Administration (NOAA) if there is early and active participation by Indian Tribes and Alaska Natives in these fora. NOAA strongly encourages Councils to discuss and work with Tribes to address their concerns while developing fishery conservation and management measures under the Magnuson Stevens Act, (MSA) 16 U.S.C. 1800 et seq. Thus, while it is NOAA’s—and not the Councils’—responsibility to consult with federally recognized tribes under E.O. 13175, the Councils’ current and future early engagement will facilitate and enhance tribal input into NOAA’s rulemaking processes.

We will continue to work with the Council and Alaska tribes to identify issues that may have tribal implications and to support outreach and education on these issues. As noted by DOC, early engagement of the tribes in fishery conservation and management measures under consideration by the Council is an important component of the National Marine Fishery Service meeting our responsibilities under E.O. 13175.

Sincerely,

James W. Balsiger, Ph.D.
Administrator, Alaska Region

Enclosure
compensated executives) must be reported by the Recipient (if the Recipient meets the criteria under 2 CFR part 170) to https://www.sam.gov/portal/public/SAM by the end of the month following the month in which the award was made.

c. The Total Compensation of the Subrecipient’s Executives (5 most highly compensated executives) must be reported by the Subrecipient (if the Subrecipient meets the criteria under 2 CFR part 170) to the Recipient by the end of the month following the month in which the subaward was made.

VII. Agency Contacts

A. Web site: http://www.usda.gov/rus/water. The Rural Utilities Service Web site maintains up-to-date resources and contact information for the RFP.

B. Phone: (202) 219–9589.

C. Fax: (202) 690–0649.

D. Email:mailto:JoyceM.Taylor@wdc.usda.gov.

E. Main point of contact: Joyce M. Taylor, Community Programs Specialist, Water and Environmental Programs, Water Programs Division, Rural Utilities Service, U.S. Department of Agriculture.

Dated: May 10, 2013.

John Charles Padalino,
Acting Administrator, Rural Utilities Service

[FR Doc. 2013–13069 Filed 6–3–13; 8:45 am]
BILLING CODE 3510–06–P

DEPARTMENT OF COMMERCE
Submission for OMB Review; Comment Request

The Department of Commerce will submit to the Office of Management and Budget (OMB) for clearance the following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35).

Agency: National Telecommunications and Information Administration (NTIA).

Title: State and Local Implementation Grant Program Application Requirements.

OMB Control Number: 0660–0038.

Form Number(s): None.

Type of Request: Regular submission (extension of a currently approved information collection).

Number of Respondents: 56.

Average Hours per Response: Application, 10 hours; Quarterly reports, 4 hours.

Burden Hours: 1,456.

Needs and Uses: The Middle Class Tax Relief and Job Creation Act of 2012 (Act, Pub. L. 112–96, 126 Stat. 156 (2012)) was signed by the President on February 22, 2012. The Act meets a long-standing priority of the Administration, as well as a critical national infrastructure need, to create a single, nationwide interoperable public safety broadband network (PSBN) that will, for the first time, allow police officers, fire fighters, emergency medical service professionals, and other public safety officials to effectively communicate with each other across agencies and jurisdictions. Public safety workers have long been hindered in their ability to respond in a crisis situation because of incompatible communications networks and often outdated communications equipment.

The Act establishes the First Responder Network Authority (FirstNet) as an independent authority within NTIA and authorizes it to take all actions necessary to ensure the design, construction, and operation of a nationwide PSBN, based on a single, national network architecture.

The Act also charges NTIA with establishing a grant program to assist state, regional, tribal, and local jurisdictions with identifying, planning, and implementing the most efficient and effective means to use and integrate the infrastructure, equipment, and other architecture associated with the nationwide PSBN to satisfy the wireless broadband and data services needs of their jurisdictions. NTIA will use the collection of information to ensure that States applying for SLIGP grants meet eligibility and programmatic requirements as well as to monitor and evaluate how SLIGP recipients are achieving the core purposes of the program established by the Act.

NTIA sought emergency review of the SLIGP request to begin the application process in the first quarter of calendar year 2013 and awarding grants was estimated no later than June 1, 2013. In order to meet this deadline, NTIA requested clearance for the application and reporting requirements by December 31, 2012 in order to: (1) Ensure applicants have reasonable notice of the final funding opportunity; (2) provide applicants sufficient time to complete and submit their applications; and (3) allow NTIA adequate time to properly execute the application review process and make the awards.

This request was approved on January 7, 2013; approval ends on July 31, 2013. The publication of this notice allows NTIA to begin the process to extend the approval for the standard three years.

Affected Public: Business or other nonprofit organizations.

Frequency: Annually and quarterly.

Respondent’s Obligation:
Copies of the above information collection proposal can be obtained by calling or writing Jennifer Jessup, Departmental Paperwork Clearance Officer, (202) 482–0336, Department of Commerce, Room 6616, 14th and Constitution Avenue NW., Washington, DC 20230 (or via the Internet at j Jessup@doc.gov).

Written comments and recommendations for the proposed information collection should be sent within 30 days of the publication to Nicholas Fraser, OMB Desk Officer, FAX number (202) 395–5167, or via the Internet at Nicholas_A_Fraser@omb.eop.gov.

Dated: May 29, 2013.

Gwellnar Banks,
Management Analyst, Office of the Chief Information Officer.

[FR Doc. 2013–13118 Filed 6–3–13; 8:45 am]
BILLING CODE 3510–06–P

DEPARTMENT OF COMMERCE
[Docket Number: 120530127–2127–02]

Tribal Consultation and Coordination Policy for the U.S. Department of Commerce

AGENCY: Department of Commerce.

ACTION: Notice of Final Policy Statement.

SUMMARY: In compliance with Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments” (November 6, 2000), the Department of Commerce (Department) adopts the following Tribal Consultation and Coordination policy statement. This policy establishes the manner in which the Department works with federallyrecognized Indian tribes when developing Department policies that have tribal implications. The policy reaffirms the unique government-to-government relationship that exists between Indian tribes and the Department. The Department continues its commitment to support tribes in the development of strong and stable economies able to participate in today’s national and global marketplace. The notice also summarizes comments received on the draft Tribal Consultation and Coordination policy statement published in the Federal Register on July 3, 2012 (77 FR 39464) and the Department’s response to these comments.

FOR FURTHER INFORMATION CONTACT: Requests for additional information or an electronic copy of the final policy should be directed to Dee Alexander,
Senior Advisor on Native American Affairs, Office of Legislative and Intergovernmental Affairs, U.S. Department of Commerce Room 5422, 1401 Constitution Ave. NW., Washington, DC 20233, telephone (202) 482–0789.

SUPPLEMENTARY INFORMATION:

Background

E.O. 13175, “requires Federal agencies to have an accountable process to ensure meaningful and timely input by tribal officials in developing policies that have tribal implications, and are responsible for strengthening the government-to-government relationship between the United States and Indian tribes.”

On November 5, 2009, President Barack Obama reaffirmed the government-to-government relationship between the Federal Government and Indian tribal governments in a White House memorandum. Among other things, this memorandum acknowledges that Indian tribes exercise inherent sovereign powers over their members and territory. The memorandum also acknowledges that the United States continues to work with Indian tribes on a government-to-government basis to address issues concerning Indian tribal self-government, tribal trust resources, and Indian tribal treaty and other rights.

This final policy statement is intended only for internal management purposes and does not create any right, benefit, or responsibility enforceable against the United States, its agencies, entities, or instrumentalities, its officers or employees, or any other person. The Department believes this policy responds to President Obama’s memorandum and builds upon and expands the principles expressed in the Department’s previous policy, “American Indian and Alaska Native Policy of the Department of Commerce,” promulgated on March 30, 1995. The Policy incorporates the requirements of E.O. No. 13175, and the Office of Management and Budget Memorandum, “Guidance for Implementing E.O. 13175, Consultation and Coordination with Indian Tribal Governments.”

Summary of Comments Received in Response to the Draft Consultation and Coordination Policy

On July 3, 2012, the Department published a notice and request for comments on a draft “Consultation and Coordination Policy for the U.S. Department of Commerce” policy statement in the Federal Register (77 FR 39464). The Department received letters from 15 different entities, with approximately 48 unique comments in response to the draft policy statement. A summary of comments received and the Department’s responses to these comments are presented below. The Department also received seven comments and recommendations not specific to the policy principles. The notice also includes comments and the Department’s responses to those comments received from two national webinars held on September 12, 2012 and September 19, 2012.

General Comments and Recommendations

Comment 1: The broad statement in the background section of the July 3 notice, that the policy “may not apply to a particular situation based upon the circumstances,” should be replaced with a narrow description of the situations to which the policy would apply.

Response: Because the statement was included in the general background information in the Federal Register notice, it is not a part of the Department’s policy request for comments. Therefore, no changes to the policy have been made in response to this comment.

Comment 2: Include in the final tribal consultation policy and supporting information a (1) description of efforts made to coordinate and consult with tribal officials on the draft policy; (2) complete summary of public comments, especially from tribal members; and (3) description of how the Department has addressed or incorporated comments into the final policy.

Response: The Department included the requested information in this notice.

Comment 3: The comprehensive Consultation and Coordination Policy should include overseeing consultation efforts between state, tribal and local entities and independent entities, such as the First Responder Network Authority (FirstNet).

Response: The Department will not implement this policy in such a manner as to conflict with statutory requirements. The Middle Class Tax Relief Act and Job Creation Act of 2012, which establishes FirstNet, describes a statutory method for consultation between FirstNet and State, local, and tribal entities. The Department, in coordination with FirstNet, will determine the policy’s applicability to other similar authorities as necessary.

Comment 4: Clarify the Department’s role in coordinating with other federal agencies, and increase interagency coordination and collaboration to increase government efficiency and accountability.

Response: The Department will determine the scope and timing of any required interagency coordination as circumstances indicate.

Comment 5: Amend the policy to apply to Fishery Management Councils.

Response: Council meetings are a critical part of the fishery management planning process and are the first and earliest point of development for fishery management policy. It is most beneficial to Tribes, Councils and National Oceanic and Atmospheric Administration (NOAA) if there is early and active participation by Indian Tribes and Alaska Natives in these fora. NOAA strongly encourages Councils to discuss and work with Tribes to address their concerns while developing fishery conservation and management measures under the Magnuson Stevens Act, (MSA) 16 U.S.C. 1800 et seq. Thus, while it is NOAA’s—and not the Councils—responsibility to consult with federally recognized tribes under E.O. 13175, the Councils’ current and future early engagement will facilitate and enhance tribal input into NOAA’s rulemaking processes.

Comment 6: The policy should clarify that the Department’s agency research activities are subject to the policy.

Response: Research activities conducted by a Department’s bureau or agency are subject to this Policy and E.O. 13175 whenever such activities involve actions or policies that have tribal implications. The Department complies with existing statutory and regulatory consultation obligations.

Comment 7: How will the new policy affect the status of existing co-management agreements with the National Marine Fisheries Service (NMFS)?

Response: The new policy has no effect on co-management agreements established under section 119 of the Marine Mammal Protection Act. NMFS will continue to work with Alaska Native organizations under co-management agreements. Such co-management does not constitute, nor is it a substitute for, government-to-government consultation as required by E.O. 13175.

Comment 8: Add more language to the Introduction Section of the policy statement that reflects tribal sovereignty and tribes’ rights to self-determination and self-government.

Response: The Department adopts the recommendation and has added the sentence to Section 1.01 stating: “The Department recognizes Indian tribal self-government and supports tribal sovereignty and self-determination.”
Comment 9: Include the term “on a pre-decisional basis” in Section 1.04. The term will ensure that the consultation occurs before a policy is changed.

Response: The Department does not adopt this recommendation. The term “pre-decisional” is a term of art, and is not appropriate for this policy. The Department adheres to Section 3 of E.O. 13175, which includes the timing of consultation with the Department or its operating units, as stated in Section 7.02 of this policy.

Comment 10: Reference Executive Orders and Secretarial Orders in the Introduction Section of the policy.

Response: The Department refers to E.O. 13175 in Section 1.04 of this final policy. This policy does not refer to Secretarial Orders because the Department has joint Secretarial Orders with the Department of the Interior to implement provisions of the Endangered Species Act which only applies to specific Department components. It is not appropriate to include existing Secretarial Orders as part of this policy.

Comment 11: Include the relevant “regulations, statutes, Presidential memorandum, and Executive Orders” in the Introduction section of the policy statement.

Response: The Department does not adopt this comment and has added the following sentence to the end of Section 1.04: “This Policy is to be construed consistent with Federal statutes, regulations, Presidential memorandum, Executive Order and other relevant Federal legal authorities.”

Comment 12: Substitute the word “input” in the first sentence of Section 1.04 with “participation.”

Response: The Department does not adopt the recommendation. The term “input” is consistent with Section 5(a) of E.O. 13175.

Comment 13: Include a new subsection in the Introduction Section of the policy with the following wording: “The Department recognizes and respects the diversity of Indian tribes and understands that they are culturally, traditionally, and administratively different. This diversity makes it impossible for any federal agency to make the sole decision regarding whether or in what manner it is appropriate to consult with tribes. The only entities that know enough about individual tribes to make that determination are the tribes themselves. Therefore, consultation can be initiated by either the Tribes or the Department.”

Response: Section 7.01 of this policy provides for consultation initiated by either a Tribe or the Department.

Comment to Section 2: Background

Comment 14: The policy should clarify whether it replaces the 1995 policy. If it does not, then include the 10 enumerated principles and expand the principles in the new policy.

Response: To be clear, this new policy replaces the 1995 policy and builds and expands upon the principles in the 1995 policy, and it incorporates the requirements of E.O. 13175 and Presidential Memorandum, “Tribal Consultation,” 2009 Daily Comp. Pres. Docs. 887 (November 5, 2009). The Department also references the 1995 American Indian and Alaska Native Policy of the Department of Commerce in Section 2.01 of this policy.

Comment 15: Include E.O. 13175’s policymaking criteria with explanation of how DOC will apply them when “formulating and implementing policies that have tribal implications.”

Response: This recommendation is addressed in Section 2.01 of the policy, which incorporates E.O. 13175, Presidential Memorandum, “Tribal Consultation,” and the Office of Management and Budget’s implementing guidance of July 30, 2010.

Comment 16: Provide additional guidance on the Department’s process for determining whether policies have tribal implications, including examples of past Department actions that were subject to consultations. Provide detailed guidance on how the Department will conduct consultations and prepare tribal impact statements for regulations with tribal impacts that impose costs, are not required by legislation, and preempt tribal law.

Response: The Department does not adopt this recommendation. This policy is intended to provide high-level guidance to operating units to implement depending on their circumstances and governing legal authorities. The policy also provides the Department with the necessary flexibility to ensure its consultations are as effective as possible.

Comments to Section 3: Authority

The Department received no comments to Section 3.

Comments to Section 4: Definitions

Comment 17: Amend the definition 4.01. “Consultation” to include an accountable process, which enables Tribal officials to participate in Federal decision-making before an agency takes an action, or commits to a decision to consider an action or policy with Tribal implications. Consultation is not a single act of communication, but consists of multiple steps which culminate in an outcome that reflects the views, needs and objectives of both Federal and Tribal participants.

Response: The Department does not adopt the recommendation. The definition in this final policy is consistent with E.O. 13175. Section 7 of this policy also addresses the elements of consultation including means of communication, exchange of information, and notice.

Comment 18: Amend the definition of “Consultation” to incorporate the following key principles: Consultation is a process which enables the tribes to participate in federal decision making before an agency takes an action, or commits to a decision to consider an action or policy with tribal implications. Consultation is not a single act of communication but rather a process involving multiple steps which culminate in an outcome that reflects the views, needs and objectives of both federal and tribal participants.

Consultation may be initiated by tribal governments to discern and exchange information on a government-to-government basis. Consultation can be formal with established time lines and required publications, or less formal through means such as teleconferencing. Consultation is triggered when the Department considers “Policies that have tribal implications,” as that term is defined in E.O. 13175, or when the Department considers proposals for regulations, rulemaking, legislation, guidance, policy formulation or actions that may have a substantial direct effect on one or more tribes or on the relationship between tribes and the federal government, or on the distribution of power and responsibilities between the tribes and federal government.

Response: The Department does not adopt the recommendation. The final policy’s definition is consistent with E.O. 13175; moreover, Section 7 of this policy addresses the elements of consultation including means of communication, exchange of information, and notice.

Comment 19: Add to the definition of “consultation” the term “actions” in addition to “policies.”

Response: The Department does not adopt the recommendation. The term “policies that have tribal implications” is the term for actions requiring the procedures described in the E.O. 13175 and therefore, this Department policy implements E.O. 13175.

Comment 20: The policy should include Alaska Native Corporation in the definition of “Indian Tribe,” or adopt a parallel formal consultation policy for Alaska Native Corporations,

Comments to Section 5: Policies

The Department received no comments to Section 5.

Comments to Section 6: Training

The Department received no comments to Section 6.

Comments to Section 7: Contacts and Resources

The Department received no comments to Section 7.

Comments to Section 8: Implementation

The Department received no comments to Section 8.

Response: The Department has added the following definition for Alaska Native Corporations and will include ANCs in the policy consistent with 25 U.S.C. § 450 note on “Consultation with Alaska Native Corporations: 07. “Alaska Native Corporation,” pursuant to 43 U.S.C. §§ 1602 et seq., any Regional Corporation, any Village Corporation, any Urban Corporation, and any Group Corporation as defined in, or established pursuant to, the Alaska Native Claims Settlement Act.

The Department also added a new Section 8. “Consultation with Alaska Native Corporations,” to the Policy, which reads as follows:


02. The Department interprets the term “Alaska Native Corporations” in this requirement to mean “Native Corporations” as that term is defined under the Alaska Native Claims Settlement Act (ANC SA) of 1971. Congress created regional, village, and urban corporations to manage the lands, funds, and other assets conveyed to Alaska Natives by ANCSA. There are 13 regional corporations and over 200 village corporations in Alaska. The village corporations generally represent shareholders in villages associated with the 229 federally recognized tribes in Alaska. Most Alaska Native Corporation shareholders also are members of a federally recognized tribe in Alaska.

03. The Department will implement the requirement to consult with Alaska Native Corporations in a manner as close as possible to consultations with federally recognized tribes in Alaska, while recognizing the important differences between sovereign tribal governments and the federal trust responsibility to those tribal governments and corporations obligated to maximize financial returns to shareholders. Alaska Native Corporations were established to operate as for-profit enterprises, and may not necessarily represent the same perspective or interests as the tribes.

Consultation and coordination with the corporations will follow the same process as described in this Policy for tribes, with the following exceptions:

a. Consultations with Alaska Native Corporations will occur on a “government-to-corporation” basis, rather than “government-to-government” basis to reflect the distinction between sovereign governments and corporate entities.

b. Government-to-corporation consultations will occur with appropriate adjustments given the unique status, structure, and interests of Alaska Native Corporations.

Comment 21: Clarify whether the policy applies to the Office of the Secretary as well as to its operating units, and identify the organizations to which the policy does not apply. Also, require the implementation of procedures at each bureau and agency level to allow the bureaus/agencies to determine when a policy has tribal implications, and allow the Tribes to consult on the various agency-level policies.

Response: The Department does not adopt the recommendation. This policy is intended to provide high-level guidance to the Department’s bureaus to allow them to implement the policy depending on their circumstances and governing legal authorities. Section 6 of the policy allows, but does not require, the development of operating level, bureau and agency, procedures. The policy applies to the Office of the Secretary, as implemented by the Tribal Consultation Official, see Section 5.01.

Comment 22: On definition 4.04, “policies that have tribal implications”: a. Tribal consultation officials should interpret the term “policies that have tribal implications” broadly so that the term applies to more than just regulations and legislative action. The policy should clarify that the phrase in section 7.02.a “other policy statements and actions” is intended to apply broadly to include all written statements of policy or actions that have the potential to affect tribal rights and interests.

Response: The Department does not adopt this recommendation. This policy is intended to provide high-level guidance to the Department’s bureaus and agencies to allow them to implement the policy depending on their circumstances and governing legal authorities. The Department intends that operating units address such procedures in their handbooks or other guidance as appropriate.

Comment 23: Amend definition 4.05 “Tribal Officials,” to read as follows: “Tribal official” means elected or duly appointed Tribal leader or official delegate, designated in writing by a Tribe, or a duly authorized representative of an authorized intertribal organization.” Also, include official delegates who are designated as such by their tribes to ensure that individuals who have been authorized to consult on behalf of their tribe will be accorded the same status as elected or duly appointed officials.

Response: The Department used the definition from E.O. 13175 for “Tribal officials,” which includes “duly appointed officials,” meaning that a delegated representative of a tribal government will be recognized as an appropriate “tribal official.”

Comments to Section 5: Roles and Responsibilities

Comment 24: The tribal consultation official should develop protocols, SOPs and, as appropriate, a Memorandum of Understanding (MOU) for formal and informal consultations. These documents would establish the means for providing and exchanging information between the Department and tribal governments.

Response: The Department does not adopt this recommendation. This policy is intended to provide high-level guidance to the Department’s bureaus and agencies to allow them to implement the policy depending on their circumstances and governing legal authorities. The Department intends that operating units address such procedures in their handbooks or other guidance as appropriate.

Comment 25: The Department should encourage each of its bureaus and agencies to allocate funding toward Tribal consultation activities, including consultation itself, staff training, and other associated activities.

Response: The Department does not adopt the recommendation. The Department will encourage the operating units to work within existing resources to comply with E.O. 13175.

Comment 26: Tribal officials situated at headquarters are poorly positioned to implement the meaningful and timely consultation process anticipated by E.O. 13175. National consultation officials have little experience on the regional issues and insufficient time to focus on the issues to effectively monitor and coordinate. A regional consultation official would have more regular contact with the tribes and would be able to screen issues and provide advance notice of impending issues. Therefore, change Section 5.02.b to require the designation of consultation coordinators at the regional level, particularly within operating units such as NOAA. Also,
give the tribes significant input into the selection process for the designated national and regional consultation officials.

Response: The Department does not adopt the recommendation. Section 5.02.b of this policy allows operating units to delegate authority.

Comment 27: The Department’s tribal consultation official or designee should certify to the Office of Management and Budget (OMB) that draft final regulations or proposed regulations with tribal implications comply with EO 13175. A tribal consultation summary report is part of the required annual update to OMB that each agency must provide.

Response: The Department added a paragraph under Section 5.01; the new paragraph reads: d. The Tribal Consultation Official has the responsibility for submitting an annual report to OMB pursuant section 7(a) of E.O. 13175.

Comment 28: Make it clear how, and when, each operating unit designates officials to consult with the tribes. Explain how tribes can open lines of communication with the designated officials.

Response: Pursuant to Section 5.02.a of the policy, each operating unit is responsible for designating an official at the operating unit level and for the timing of that designation.

Comment 29: Clarify the term “periodic dialogue” in Section 5.01.c, or replace that phrase with the term “meaningful dialogue” or “biannually” to give more guidance on what the term means in the context of the policy.

Response: The Department does not adopt the recommendation. The phrase “periodic dialogue” is intended to allow flexibility in the regular review of this policy’s implementation.

Comment 30: Section 5.02.a of the Policy states that the head of each operating unit within the Department will designate an official to ensure compliance with the Policy. As written, there is no timeframe for this designation in the policy. Institute a timeframe for this process. Additionally, some units already have an experienced designated official, while other units’ designated officials may have little to no experience in tribal consultation.

Response: The Department determined that these

responsibilities are best addressed at the operating unit level to allow each operating unit to assess its needs to support interactions and relationships with tribes.

Comment 31: Add the following responsibilities to the tribal consultation official or designated officials in the operating units Section: Responding to inquiries from tribes about a specific consultation—past, ongoing, or proposed; responding to inquiries about the consultation process in general; receiving requests from tribes seeking to initiate consultation; coordinating to identify and screen for potential consultation issues; preserving and maintaining complete consultation records; assisting tribal governments seeking to access consultation records; and receiving post-consultation complaints, objections, and alleged inconsistencies.

Response: The Department does not adopt the recommendation. This policy is intended to provide high-level guidance to the Department’s bureaus and agencies to allow them to implement the policy depending on their circumstances and governing legal authorities. The Department intends that operating units address this matter in their handbooks or other guidance as appropriate.

Comment 32: Establish tribal liaison positions to implement the consultation policy, and to encourage agencies to allocate funding for tribal consultations.

Response: The Department does not adopt the recommendation, and encourages operating units to work with existing resources and staff to comply with E.O. 13175.

Comments to Section 6: Training and Guidance

Comment 33: The focus of the consultation in most cases should be at the local level; however, it is critical that bureau or agency officials at the headquarters level with no background in tribal relations be properly trained in the consultation process.

Response: This policy provides for training in Section 6.01.

Comment 34: Section 6.02 provides that “each operating unit may develop and issue tribal consultation guidance.” Agencies should be required to develop Tribal consultation guidance. This guidance should be developed under supervision of the Tribal Consultation Official to ensure that its content is uniform across the Department’s operating units.

Response: The Department addresses this recommendation in Section 6.02 of the Policy which permits operating units to develop tribal consultation guidance provided that the guidance is consistent with DAO 218-8 and is reviewed by the Tribal Consultation Official.

Comments to Section 7: Consultation

Comment 35: The term “reasonable effort” in Section 7 is unclear. Clarify that the Department will confirm receipt of a tribal request for consultation within 30 days, or even 45 days. Tribes believe that there are few circumstances where the Department would not be able to accommodate a request, and urge the Department to conduct face-to-face consultations with tribes.

Response: The Department does not adopt the recommendations. Operating units may have specific time constraints imposed by statute or circumstances, and this policy is intended to provide them with the flexibility to accommodate those constraints.

Comment 36: It is important for the consultation process to retain the requirement that it is a government-to-government interaction. The consultation process must also involve elected tribal officials unless otherwise approved by the tribe.

Response: This comment is addressed in the policy definition of “Tribal officials,” adopted from Section 1(d) of E.O. 13175.

Comment 37: The Department should include in the policy further guidance indicating standards for determining which forms of consultation are appropriate in various circumstances, and allow the tribes to consult on these standards.

Response: The Department does not adopt the recommendation. This policy is intended to provide high-level guidance to allow operating units to implement the policy depending on their circumstances and governing legal authorities. The Department intends that operating units address details of their respective consultation process in their handbooks or other guidance as appropriate.

Comment 38: Coordination with the tribes should not be limited to formal consultation, and a variety of consultation types should be further defined in sub-section 01. Consultation types could include informal discussions with tribal leaders, meetings with individual tribes, listening sessions, and formal consultations. Add as the last section to sub-section 01:

“Ultimately the consultation process is to entail an informed discussion of the proposed federal policy and associated tribal concerns between the designated Tribal Consultation Official and tribal officials.”
{quote}Response: The Department adopts this recommendation and has added the following language to the end of Section 7.01: Ultimately, the consultation process is to entail an informed discussion of the proposed federal policy and associated tribal concerns between the designated Tribal Consultation Official and tribal officials. {quote}

{quote}Comment 39: Develop a tribal liaison position for the Alaska region. Tribal liaisons should be trained in how to conduct tribal consultations to help facilitate tribal-agency relationships. {quote}

{quote}Response: The Department does not adopt the recommendation to develop a tribal liaison position for the Alaska region. This comment has been forwarded to NOAA for its consideration. {quote}

{quote}Comment 40: The phrase ‘‘reasonable effort’’ in Section 7.02.b. is unclear, and should either be removed and replaced with language clarifying the specific time frame that the Department considers reasonable. {quote}

{quote}Response: The Department does not adopt the recommendation to remove the term ‘‘reasonable effort’’ because consultations are intended to reflect a relationship between the operating unit and the tribe, taking into account the resources and mission of the operating unit. Some operating units have specific time constraints imposed by statute or other circumstances, and this policy is intended to provide those units with sufficient flexibility to accommodate those parameters. {quote}

{quote}Comment 41: Add to end of last sentence in Section 7.02.b. the following language: ‘‘prior to substantive decision points and/or final action’’ and include that ‘‘the timing of consultation is to allow for the substantive consideration of tribal input and concerns before finalizing a decision on federal policies, regulations, or legislation.’’ {quote}

{quote}Response: The Department adopts the recommendation in part and has added the following language to the end of subsection b.: Exchange of Information. The Department and operating units will make a reasonable effort to identify and provide timely and accurate information for consultation prior to substantive decision or final action. {quote}

{quote}Comment 42: Section 7.02.c. should include a statement that the Department will clearly notify tribes of events such as meetings that it considers to be consultations, and that the Department will do so within 45 or 90 days prior to the consultation. The Department should seek tribal participation in its deliberative process about the necessity of a proposed rule. {quote}

{quote}Response: The Department will advise its operating units to provide 45 days advanced notice of any invitation to conduct a consultation, or to provide notice at the earliest time practicable. Such notices will include any relevant materials to facilitate discussion. This response does not supersede any existing legal authorities or responsibilities of the operating units. {quote}

{quote}Comment 43: Communication to and from rural Alaska can be difficult, and the Department should follow up on correspondence to Tribes and Tribal entities. {quote}

{quote}Response: The final policy addresses follow-up notices to tribal officials in Section 7.02. {quote}

{quote}Comment 44: The phrase ‘‘when practical’’ in Sections 7.01, 7.02.b and 7.02.d is unclear, and the Department should amend the section to clarify that the Department will provide tribes with a specific amount of time to prepare for consultations and submit views, and will be flexible about the time allowed. {quote}

{quote}Response: The Department agrees with the recommendation to provide Tribes adequate time to prepare for consultation as well as relevant materials to facilitate and submit their views, and will advise its operating units to develop consultation materials, as appropriate. In addition, the Department has added the following language to Section 7.01 Consultation/ Consultation Process: ‘‘The Tribal Consultation Official or the head of each operating unit, as applicable, will treat a request for consultation from a tribal official in an expedited fashion and provide a written response confirming receipt of the request.’’ {quote}

{quote}Comment 45: For Section 7.e., when a consultation occurs between the Department or its operating units and Tribal officials, the Department or operating unit should provide the Tribal officials with a formal, written communication that summarizes the consultation, and responds to the issues and concerns, if any, identified during consultation. {quote}

{quote}Response: The Department expects operating units to address written consultation summaries in their handbooks or other guidance, as appropriate. Written summaries are not intended to be used to document regular communications and interactions between Department employees and Tribes; rather, these written communications are part of the consultation process. {quote}

{quote}Comment 46: A written summary of consultation should include the Tribe’s responses and should become part of the official record on consultation activities maintained by the operating unit and the Department, and should form the basis for a tribal impact summary. {quote}

{quote}Response: E.O. 13175 requires a tribal summary impact statement when an agency (1) promulgates regulations that have tribal implications, that impose substantial direct compliance costs on Indian tribal governments, and are not required by statute, or (2) promulgates regulations that have tribal implications and that preempt tribal law. The Department intends consultation reporting to be a separate component of all consultations, regardless of whether they involve regulations. In response to this comment, the Department has added the following language as a new subparagraph to 5.02.c. The head of
each operating unit will consult with Tribes and prepare tribal summary impact statements when promulgating any regulations that have tribal implications, that impose substantial direct compliance costs on Indian tribal governments, and that are not required by statute; and when promulgating any regulation that has tribal implications and that preempts tribal law.

Comment 47: The Department should distribute a follow-up report detailing immediate and long-term actions to be taken after consultations, and should add language in Section 7.02.e. to the effect that documentation includes any proposal for Departmental follow-up actions.

Response: The Department does not adopt the recommendation. Section 7.02.e. sufficiently addresses this request by requiring the Department or operating unit to provide tribal officials with “a formal written communication that summarizes the consultation, and responds to the issues and concerns, if any, identified during the consultation.”

Changes to the Proposed Policy

The policy statement adopted in this Notice differs from the proposed policy statement as follows:

(a) Proposed policy Section No. 1, “Introduction,” subparagraphs 01. and 04. were modified in response to comments.

(b) Proposed policy Section No. 2, “Background,” subparagraph 01. was modified to include wording on consultation with Alaska Native Corporations in compliance with existing law.

(c) Proposed policy Section No. 4, “Definitions,” subparagraph 03. was modified to expressly state that the definition of operating units includes all bureaus and agencies in response to comments.

(d) Proposed policy Section No. 4, “Definitions,” was modified to include a definition for “Alaska Native Corporation” in response to comments.

(e) Proposed policy Section No 5, “Roles and Responsibilities for Consultation,” subsection 01. was modified to include additional reporting language in response to comments.

(f) Proposed policy Section No. 5, “Roles and Responsibilities for Consultation,” subsection 02. was modified in response to comments to include additional responsibilities language for the heads of operating units.

(g) Proposed policy Consultation Process Section No. 7, “Consultation Process,” subparagraph 01. was modified and includes additional language relating to the purpose of consultation.

(h) Proposed policy Consultation Process Section No. 7, “Consultation Process,” subparagraph 02. was modified in response to comments received to include additional language relating to responses to requests for tribal consultations.

(i) Proposed policy Section No. 8, “Implementation,” was renumbered to Section No. 9.

(j) A new Section No. 8, “Consultation with Alaska Native Corporations,” was added to address the consultation with Alaska Native Corporations.

The final Consultation and Coordination Policy of the U.S. Department of Commerce now reads as follows:

Tribal Consultation and Coordination Policy of the U.S. Department of Commerce

Section 1. Introduction

01. This “Tribal Consultation and Coordination Policy of the U.S. Department of Commerce” ("Tribal Consultation Policy" or "Policy") establishes the manner in which the Department of Commerce ("Department") works with Indian tribes on a government-to-government basis to build a durable relationship and address issues concerning tribal self-government, tribal trust resources, and tribal treaty and other rights, as well as support tribes in developing strong and stable economies able to participate in the national and global marketplace. The Department recognizes Indian tribal self-government and supports tribal sovereignty and self-determination.

02. The Department recognizes the Federal Government’s unique legal relationship, as established in the Constitution, statutes, treaties and federal court decisions, between Tribal governments and the Federal Government.

03. The Department and operating units will seek and promote cooperation within the Department and with other agencies that have related responsibilities. The Department’s mission encompasses many complex issues where cooperation and mutual consideration among governments (federal, state, tribal, and local) are essential. The Department and operating units will promote intradepartmental and interagency coordination and cooperation to assist Tribal governments in resolving issues requiring mutual effort.

04. Executive Order (E.O.) No. 13175, “Consultation and Coordination with Indian Tribal Governments,” requires federal agencies to have an accountable process to ensure meaningful and timely input by tribal officials in developing policies that have tribal implications. This Policy provides uniform standards and methodology outlining consultation procedures for all Department personnel working with Tribal governments regarding policies that have tribal implications. This Policy is to be construed consistent with Federal statutes, regulations, Presidential memoranda, Executive Orders, and other relevant Federal legal authorities.

Section 2. Background


02. This Policy is for internal management only and shall not be construed to grant or vest any right to any party not otherwise granted or vested by existing law or regulations.

Section 3. Authority

01. This Tribal Consultation Policy is issued pursuant to the authority of 5 U.S.C. 301 and Department Administrative Order (DAO) 218–8, “Consultation and Coordination with Indian Tribal Governments.” This Policy shall have the same force and effect as a DAO. Amendments (substantive changes) or revisions (corrections or updates) to this Policy may be developed and issued by the Department of Commerce Tribal Consultation Official or the Secretary’s designee in consultation with Tribal governments.

Section 4. Definitions

01. “Consultation,” as defined in Section 5 of E.O. No. 13175, refers to an accountable process ensuring meaningful and timely input from tribal officials on Department policies that have tribal implications.
02. “Indian tribe (or Tribe),” as defined in Section 1(b) of E.O. No. 13175, means an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 479a.

03. “Operating units,” as defined in Section 3.c.1 of Department Organization Order 1–1, are organizational entities outside the Office of the Secretary charged with carrying out specified substantive functions (i.e., programs) of the Department. The operating units are the components of the Department through which most of its substantive functions are carried out. “Operating units” includes all Department bureaus and agencies.

04. “Policies that have tribal implications,” as defined in Section 1(a) of E.O. No. 13175, refers to regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

05. “Tribal Consultation Official,” as defined in Section 5(a) of E.O. No. 13175, means the designee of the Secretary with principal responsibility for the implementation of this Policy.

06. “Tribal officials,” as defined in Section 1(d) of E.O. No. 13175, means elected or duly appointed officials of Indian tribal governments or authorized intertribal organizations.

07. “Alaska Native Corporation,” pursuant to 43 U.S.C. 1602 et seq., any Regional Corporation, any Village Corporation, any Urban Corporation, and any Group Corporation as defined in, or established pursuant to, the Alaska Native Claims Settlement Act.

Section 5. Roles and Responsibilities for Consultations

01. Department of Commerce Tribal Consultation Official

a. The Tribal Consultation Official is an individual in the Office of Legislative and Intergovernmental Affairs (OLIA) within the Office of the Secretary who is duly appointed to act as a liaison between the Secretary of Commerce and Tribal officials. The Tribal Consultation Official may delegate authority, as necessary, to the head of each operating unit. The Tribal Consultation Official has primary responsibility for ensuring compliance with DAO 218–8, this Policy, and E.O. No. 13175, and is responsible for tribal consultations and coordination for the Office of the Secretary programs.

b. The Tribal Consultation Official has responsibility for coordinating the implementation of this Policy and DAO 218–8 within the Department and all operating units.

c. The Tribal Consultation Official will engage tribal officials in periodic dialogue to discuss the Department’s implementation of this Policy. The dialogue will provide an opportunity for tribal officials to assess policy implementation, program delivery, and discuss outreach and communication efforts, and other issues.

d. The Tribal Consultation Official is responsible for submitting an annual report to OMB pursuant section 7(a) of E.O. No. 13175.

02. Head of operating unit Responsibilities

a. The head of each operating unit will designate an official in the headquarters office who has primary responsibility for ensuring compliance with this Policy within the operating unit. Each operating unit’s designated official will work with the Department Tribal Consultation Official to ensure coordination of tribal consultations, as necessary. The designated official is responsible for the development, maintenance and internal distribution of any guidance produced by the operating unit in compliance with the requirements of this Policy.

b. The head of each operating unit or the designated official may delegate authority to appropriate individuals within the operating unit.

c. The head of each operating unit will consult with Tribes and prepare tribal summary impact statements when promulgating any regulations that have tribal implications, that impose substantial direct compliance costs on Indian tribal governments, and that are not required by statute; and when promulgating any regulations that have tribal implications and that preempt tribal law.

Section 6. Training and Guidance

01. The Tribal Consultation Official and the head of each operating unit will ensure that personnel assisting with tribal consultations have appropriate training.

02. Each operating unit may develop and issue tribal consultation guidance to assist staff in preparing, reviewing and managing the consultation process within their respective operating units, so long as:

a. The guidance is consistent with DAO 218–8, and

b. The Department’s Tribal Consultation Official reviews the guidance.

Section 7. Consultation

01. The Consultation Process. Consultation may take a variety of forms. Implementing this Policy may require a range of formal and informal planning activities. The Department and operating units’ consultation processes may include one or more of the following: meetings, letters, conference calls, webinars, on-site visits, or participation in regional and national events. The Tribal Consultation Official or the head of each operating unit, as applicable, will make a reasonable effort to accommodate a tribal request for consultation. Ultimately, the consultation process is to entail an informed discussion of the proposed federal policy and associated tribal concerns between the designated Tribal Consultation Official and tribal officials.

02. Elements of the Consultation Process.

a. Ongoing communication shall be a regular part of the government-to-government relationship with tribal governments. The Department and operating units will engage in meaningful dialogue with Tribes regarding all policies that have tribal implications.

b. Exchange of Information. The Department and operating units will make a reasonable effort to identify and provide timely and accurate information for consultation.

c. Notification. The Department and operating units will notify Tribes of policies that have tribal implications. Follow-up may be necessary to ensure the appropriate tribal official has received the consultation notification and accompanying documents. These notifications do not replace or supersede any notifications that are required by statute or E.O. regarding tribal consultations.

d. Consultation Planning. The Department or operating units will coordinate with tribal officials to plan logistical considerations for the consultation. The Department or operating units will, when practical, allow Tribes a reasonable amount of time to prepare for consultation and submit their views on policies that have tribal implications. The Tribal Consultation Official or the head of each operating unit, as applicable, will treat a request for consultation from a tribal official in an expedited fashion and provide a written response confirming receipt of the request.

c. Written Communication and Record-Keeping. When a consultation
occurs between the Department or its operating units and Tribal officials, the Department or operating unit will provide the Tribal officials with a formal, written communication that summarizes the consultation, and responds to the issues and concerns, if any, identified during consultation. The Tribal Consultation Official or head of each operating unit conducting a consultation will maintain documentation addressing the consultation, tribal concerns, and recommendations in conformance with applicable records retention schedules.

Section 8. Consultation With Alaska Native Corporations


02. The Department interprets the term “Alaska Native Corporations” in this requirement to mean “Native Corporations” as that term is defined under the Alaska Native Claims Settlement Act (ANCSA) of 1971. Congress created regional, village, and urban corporations to manage the lands, funds, and other assets conveyed to Alaska Natives by ANCSA. There are 13 regional corporations and over 200 village corporations in Alaska. The village corporations generally represent shareholders in villages associated with the 229 federally recognized tribes in Alaska. Most Alaska Native Corporation shareholders also are members of a federally recognized tribe in Alaska.

03. The Department will implement the requirement to consult with Alaska Native Corporations in a manner as close as possible to consultations with federally recognized tribes in Alaska, while recognizing the important differences between sovereign tribal governments and the federal trust responsibility to those tribal governments and corporations obligated to maximize financial returns to shareholders. Alaska Native Corporations were established to operate as for-profit enterprises, and may not necessarily represent the same perspective or interests as the tribes. Consultation and coordination with the corporations will follow the same process as described in this Policy for tribes, with the following exceptions:

a. Consultations with Alaska Native Corporations will occur on a “government-to-corporation” basis, rather than “government-to-government” basis to reflect the distinction between sovereign governments and corporate entities.

b. Government-to-corporations consultations will occur with appropriate adjustments given the unique status, structure, and interests of Alaska Native Corporations.

Section 9. Implementation

01. The Tribal Consultation Official, located in OLIA within the Office of the Secretary, is responsible for ensuring implementation of this Policy. This responsibility may be delegated as appropriate. This Policy does not alter or affect any existing duty or authority of any individual operating unit.

02. This Policy is not intended to, and does not, grant, expand, create or diminish any legally enforceable rights, benefits, or trust responsibilities, substantive or procedural, not otherwise granted or created under existing law. Nor shall this Policy be construed to alter, amend, repeal, interpret, or modify tribal sovereignty, any treaty rights of any Indian tribes, or to preempt, modify, or limit the exercise of any such rights.

03. This Policy is intended to improve the Department’s management of its relations and cooperative activities with Indian tribes. The Department and operating units have no obligation to engage in any consultation activities under this policy unless they are practicable and permitted by law. Nothing in this policy requires any budgetary obligation or creates a right of action against the Department for failure to comply with this policy nor creates any right, substantive or procedural, enforceable at law by a party against the United States, its agencies, or any person.

04. This Policy shall be updated as necessary.

Section 10. Effective Date

01. This Policy is effective beginning with the date of this memorandum and will remain in effect until it is amended, superseded by a Departmental Administrative Order, or revoked.

Dated: May 21, 2013.

Rebecca M. Blank,
Acting Secretary of Commerce.

[FR Doc. 2013–13052 Filed 6–3–13; 8:45 am]
BILLING CODE 3510–17–P

DEPARTMENT OF COMMERCE
Economic Development Administration

Notice of Petitions by Firms for Determination of Eligibility To Apply for Trade Adjustment Assistance

AGENCY: Economic Development Administration, Department of Commerce.

ACTION: Notice and Opportunity for Public Comment.

Pursuant to Section 251 of the Trade Act 1974, as amended (19 U.S.C. 2341 et seq.), the Economic Development Administration (EDA) has received petitions for certification of eligibility to apply for Trade Adjustment Assistance from the firms listed below. Accordingly, EDA has initiated investigations to determine whether increased imports into the United States of articles like or directly competitive with those produced by each of these firms contributed importantly to the total or partial separation of the firm’s workers, or threat thereof, and to a decrease in sales or production of each petitioning firm.

LIST OF PETITIONS RECEIVED BY EDA FOR CERTIFICATION ELIGIBILITY TO APPLY FOR TRADE ADJUSTMENT ASSISTANCE


<table>
<thead>
<tr>
<th>Firm name</th>
<th>Firm address</th>
<th>Date accepted for investigation</th>
<th>Product(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Mile Solutions, Inc.</td>
<td>7540 Caldwell Avenue, Niles, IL 60714</td>
<td>5/22/2013</td>
<td>Firm manufactures electromechanical assemblies for the medical and industrial industries.</td>
</tr>
<tr>
<td>R&amp;R Tool &amp; Manufacturing, Inc.</td>
<td>1540 Lake St, LaPorte, IN 46350.</td>
<td>5/22/2013</td>
<td>Firm manufactures metal parts for air compressors from sheet metal, aluminum and stainless steel.</td>
</tr>
<tr>
<td>SAY Plastics, Inc.</td>
<td>165 Oak Lane, McSherrystown, PA 17344</td>
<td>5/24/2013</td>
<td>Firm manufactures thermoformed plastic components and assemblies for various industries that include medical, transportation and recreation.</td>
</tr>
</tbody>
</table>
May 24, 2013

Nick Dallman
Environmental Program Specialist
Alaska Department of Environmental Conservation
Wastewater Discharge Authorization Program
610 University Ave
Fairbanks, AK 99709

RE: Large Suction Dredging
General Permit in Norton Sound
Permit No. AKG374000

Dear Mr. Dallman:

The Alaska Department of Environmental Conservation (ADEC) proposes to issue an Alaska Pollutant Discharge Elimination System (APDES) General Permit for offshore large dredge operations in Norton Sound. The General Permit would authorize the discharge of wastewater from mechanical dredges, suction dredges with intake diameters greater than 10 inches, and suction dredge operations with a combination of intake hoses that have a combined intake area greater than 78 square inches. The coverage area would include marine waters of Norton Sound up to three nautical miles offshore between Cape Rodney at 166°24'09" west longitude and Cape Darby at 162°46'54" west longitude, with certain restrictions in the permit.

In a letter dated February 15, 2012, the National Marine Fisheries Service (NMFS) provided scoping comments to ADEC on the proposed General Permit. On April 25, 2013, ADEC published a draft General Permit for the proposed activities. After reviewing the draft General Permit and related documents, (Fact Sheet, and Ocean Discharge Criteria Evaluation developed by ADEC), we offer the following information in support of our earlier comments and in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

Background
On September 28, 2011, the Alaska Department of Natural Resources held a competitive sale for offshore mineral leases in Norton Sound. The lease sale offered a total acreage of 23,793 acres and is reported to have brought in $7.6 million in sales. Mineral leases were purchased by a range of bidders, from local residents to global mining companies. As of September 18, 2012, the lease sale, combined with media coverage and record gold prices, had resulted in 17 new or proposed permit applications for large gold dredge operations in Norton Sound (ADEC April 25,
2013). Although not all proposed operations are anticipated to reach development, ADEC anticipates that many will become operational. To accommodate new operations and streamline the permitting process for operations in Norton Sound, ADEC initiated development of this General Permit.

Although state agencies are not required to consult with NMFS on actions that may adversely affect Essential Fish Habitat (EFH), as ADEC notes, under section 305(b)(4)(A) of the MSA, NMFS is required to provide EFH Conservation Recommendations to federal and state agencies for actions that would adversely affect EFH. NMFS will not recommend that state or federal agencies take actions beyond their statutory authority. The Environmental Protection Agency approved the State of Alaska’s application to administer and enforce the APDES program in Alaska, and ADEC committed to use the program’s coordination procedures to provide NMFS with information necessary to identify actions that may adversely affect EFH.

**Essential Fish Habitat**

EFH within the project area has been described for red king crab, Alaska plaice, yellowfin sole, and all five Pacific salmon species. All of these species are found in nearshore waters of Norton Sound during certain stages of their life history. For example, adult yellowfin sole use shallow water substrates for spawning areas. Red king crab concentrate along shallow-water depth contours to form mating pairs, release eggs, or form clusters. Red king crab also migrate along these shallow contours. Juvenile and adult salmon use areas of Norton Sound to grow to maturity. All species are dependent on prey resources in this area. The specific habitat associations for these species are described on our website at http://www.alaskafisheries.noaa.gov/habitat/.

**Potential Impacts**

Offshore dredging and the discharge of spoils have the potential to affect marine invertebrates (including red king crab) by altering their habitat through turbidity, entainment of organisms, and exposure to trace metals, fuel spills, and noise disturbances (Minerals Management Service 1990). Previous mining operations off Nome resulted in considerable localized substrate alteration. Sediment fines destabilized by mining operations were redistributed by local currents and sea conditions (Jewett 1999). It is not known how long it takes for a community to fully recover, that is, to re-colonize dredged sites and return to comparable density, biomass, and number of taxa as before disturbance from mining. However, studies associated with the Nome Offshore Placer Project showed that even seven years after mining operations cease, seafloor habitats and species assemblages had not recovered to pre-disturbance conditions (Gardner, Jewett 1994). Further, evidence suggests that benthic communities may not ever re-colonize to their original structure after mining disturbance; instead, a somewhat different assemblage may result.

The studies from the Nome Offshore Placer Project documented that those waters deeper than 20 feet support more biodiversity and higher numbers of animals, especially in the cobble habitats. The studies also suggest that significant storm events and longshore currents cause extensive mixing of nearshore sediments and alteration of the sea floor. These natural events occur within
nearshore waters less than 25 feet in depth (Jewett 1999). The studies concluded that mining disturbances (including impacts from the associated discharge) to benthic substrate in water depths greater than 30 feet are distinguishable and the areas are slow to recover. Additionally, suspended sediments can travel well outside the disturbed area and settle on other undisturbed marine substrates. Also, sediment was found in red king crab stomachs, but whether this was due to an increase in suspended sediment or associated with a food source is not known. Some sediment is probably ingested while feeding on tube worms, starfish, and sea urchins. Fine sediments may inhibit growth in some species and smother benthic organisms (Jewett 1999).

In spring, sexually mature female crab migrate into relatively shallow water (less than 50 meters deep), upstream from prevailing currents, where they release planktonic larvae to drift passively for 2-5 months before settling into benthic habitats. Young of the year king crab (late age 0 to age 1+) select complex habitats (e.g. rocky rubble habitat) and are not found on homogeneous mud or silt bottom (Loher and Armstrong 2000). Survival of juvenile crab is primarily dependent on the availability and quality of cover from predators (Armstrong et al. 1987, Stone et al. 1992, Stone et al. 1993, Loher and Armstrong 2000); thus, their habitat requirements are driven by anti-predator strategy (Loher and Armstrong 2000), with profound effects on juvenile population dynamics and recruitment. Jewett et al. (1999) demonstrated that suction dredge mining in Norton Sound decreases habitat complexity and diversity. Again, recovery is slow, particularly for waters deeper than 30 ft.

Additionally, in its own studies on the effects of disturbance on benthic substrates and their inhabitants, NMFS found that many seafloor organisms are slow growing and reach their age of maturity (spawning age) later in their life history (NMFS 2005).

Essential Fish Habitat Conservation Recommendations
The North Pacific Fishery Management Council (NPFMC) is one of eight regional Fishery Management Councils established by the MSA to manage the fisheries of the United States. Each Council is responsible for the area adjacent to its constituent states, called the Exclusive Economic Zone (EEZ). Councils develop fishery management plans and management measures for the fisheries within their EEZ. NMFS approves and implements these plans and measures. Under section 305(b)(3)(A) of the MSA, Councils may comment on and make recommendations to the Secretary of Commerce and any federal or state agency concerning any activity or proposed activity authorized, funded, or undertaken by the agency that, in the view of a Council, may affect the habitat, including EFH, of a fishery resource under its authority. Recently the NPFMC provided comments to the Corps of Engineers (copy enclosed) on their concerns regarding the impacts of mining operations in Norton Sound. NMFS shares these concerns.

We note that the Corps of Engineers, the Environmental Protection Agency, and now ADEC all issue (or have issued) permits for dredging activities and the discharges associated with those activities in waters of the United States. Since 2000, NMFS has recommended that such permits restrict mining operations to waters less than 30 ft deep, based on increased benthic habitat complexity (benthic species diversity and habitat structure) in deeper waters, mediated by

3
differences in disturbance regimes (frequency and intensity of winter storms and sea ice). Our concerns have not changed about adverse effects of offshore dredging and the discharge of spoils on living marine resources, including EFH. We offer the following recommendations pursuant to Section 305(b)(4)(A) of the MSA:

1) The highest plankton production in spring is associated with the retreating ice edge and provides a seasonally important feeding habitat in Norton Sound that would be disrupted by the proposed dredging and associated discharge. Also, RKC associate with the ice edge and its movement through break-up and migrate into shallow nearshore areas for reproductive associations during this time. These associations include reproductive pair bonding, molting, and egg extrusion, all of which would be affected by dredging.

As currently written, the General Permit excludes dredging when sea ice is present or from March 1 to May 31. We applaud ADEC for including this restriction. However, we note that the General Permit allows the applicant to request an exception to the seasonal limitations. We recommend that any such request be authorized through the individual APDES permit process, rather than under the General Permit.

2) NMFS has previously recommended that operations not take place from June 1 through July 15, within a radius of one nautical mile from the mouth of anadromous streams identified in the Alaska Department of Fish & Game’s Anadromous Waters Catalog. This is because turbidity plumes from dredge operations have the potential to create a barrier to out-migrating juvenile salmon. ADEC has recognized this concern and included the recommendation as a condition of the General Permit.

3) Mining activities should be limited to water depths less than 30 ft. Environmental studies of offshore mining (specifically studies from the Nome Offshore Placer Project) have concluded that, in depths greater than 30 ft., mining disturbances (including the associated discharge) can adversely affect benthic substrate through turbidity, entrainment of organisms, exposure to trace metals, noise disturbances, and fuel spills (Minerals Management Service 1990).

The General Permit does not restrict mining operations to less than the 30-ft. contour. Instead it includes several Best Management Practices meant to address concerns related to habitat alteration. Unfortunately, these practices, although intended to minimize turbidity and limit the discharge to the footprint of the area to be physically dredged, still cause adverse effects to EFH. We therefore maintain that mining activities should be limited to water depths less than 30 ft.

4) In addition, we would argue that, for large scale mining operations, a permittee would find it difficult to comply with the Best Management Practice that states:

Red king crab mating pairs and clusters must be avoided. If red king crab mating pairs or clusters are observed, mining operations must move to an alternate location where no crabs are observed or cease operation until the crabs move away on their own.
We recommend that this Best Management Practice be expanded to include information on how it is to be enforced.

Should you have any questions regarding EFH please contact Brian Lance at 907-271-1301 or brian.lance@noaa.gov.

Sincerely,

James W. Balsiger, Ph.D.
Administrator, Alaska Region

Enclosure

cc:
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Chris.Oliver@noaa.gov
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References:


The meeting was chaired by Eric Olson. Member present were: Eric Olson, Ed Dersham, Roy Hyder from the North Pacific Fishery Management Council (Council); Karl Johnstone, Tom Kluberton, John Jensen from the Board of Fisheries (BOF). Also in attendance were Chris Oliver (Council Executive Director), Monica Wellard (Board Executive Director), Lance Nelson (AK Dept of Law), John Lepore (NOAA GC), and numerous other Council, Board, NMFS, and ADF&G staff.

The Protocol Committee received staff reports/updates on the following management issues (major questions or discussion points are summarized for each item):

A. Update on Council action on Gulf of Alaska non-pollock Chinook salmon bycatch (PSC) caps. Sam Cunningham- NPFMC Staff

The Council action in Juneau set a hard cap of 7,500 Chinook salmon, noting the balance struck between implementing a cap, and allowing prosecution of Federal trawl fisheries. Uncertainty pool allows some flexibility for trawl fleet from year to year (could rollover up to 1,000 fish from one year to next if under the cap), noting that bycatch could NOT exceed 15,000 fish over any two year period.

Board members had questions regarding the new full retention requirements, and associated genetic information to be collected on Chinook salmon, and whether sampling would indicate specific bycatch locations, depth, and other information on all bycaught salmon. Staff responded that many of the salmon are not counted/sampled until they arrive at the processor, but information can be linked back to fish tickets. Board members were also interested in the percentage of vessels/catch subject to observer coverage, and how bycatch numbers were obtained for unobserved hauls (extrapolations from observed hauls).

B. Update on Council action regarding BSAI salmon bycatch. Diana Stram - NPFMC Staff

Dr. Stram provided an overview of other salmon bycatch management measures implemented by the Council (Bering Sea/Aleutian Islands measures), including recognition of numerous requests for more stringent bycatch caps. The Council will be receiving a staff report in October which attempts to identify effectiveness of measures in place to date. This report will include updated information on Chinook salmon stock status in Alaska, updated information on genetics (stock of origin information), and estimates of current impacts. The Board expressed interest in that report and any potential next steps by Council.

C. Update on Council initiative for Gulf of Alaska trawl bycatch management. Chris Oliver – NPFMC staff

Mr. Oliver provided an update on Council discussion at the Council’s June meeting, noting that seven proposals had been submitted for Council consideration. Staff will be evaluating these proposals against the Council’s stated objectives (essentially to effectively manage bycatch while providing the trawl fisheries the tools necessary to do so), and the Council will further define its
management approaches at the October meeting in Anchorage. For the economic data collection aspect, the Council has prioritized this and is scheduled to take final action in October (in order to collect information that will allow a pre vs post examination of the management program). Changes in tendering activities are also being scrutinized and may be further addressed by the Council, as necessary, later this year.

Discussions noted that the range of alternatives is still open for Council to determine. Board members were concerned with the urgency of this initiative to address bycatch – Council members responded that numerous bycatch (PSC) measures have been implemented already (Chinook bycatch caps in all trawl fisheries in the GOA and reductions in halibut PSC caps), in advance of this initiative to provide tools to the fleet to further reduce/manage bycatch.

D. Update on Council actions regarding restructured observer program and electronic monitoring. Chris Oliver – NPFMC staff

Mr. Oliver provided an update to the Committee on recent actions by the Council, including a performance review of the new program (first 6 months), a review of the Strategic Plan to implement electronic monitoring (EM), and further Council actions to expedite EM, including formation of an EM Workgroup. Board members were keenly interested in the EM development, and had specific questions regarding how video data are handled in terms of reviewing fishing activities (recognizing this is a time consuming and expensive aspect of EM technology).

E. Update on status of Steller Sea Lion EIS and associated issues, including Aleutian Islands shoreside processing provisions and relationship to Board of Fish state water groundfish fishery proposals. Steve Maclean – NPFMC staff

Mr. Maclean provided an update on development of the EIS for potential SSL management measures to be considered and recommended by the Council in October, noting the need to also consider Board of Fisheries actions this fall relative to State water fisheries, particularly in the Aleutian Islands area. The Council provided the Committee with its June motion on this issue, which includes transmitting concerns to NMFS regarding the EIS analysis and the pending Biological Opinion (including use of the Recovery Plan criteria as the basis for analysis and a possible jeopardy/adverse modification decision in the pending BiOp).

F. Update on Federal definition of a halibut sport fishing guide and coordination of State and Federal regulations. Chris Oliver – NPFMC staff and Ed Dersham – NPFMC member

Mr. Oliver and Mr. Dersham provided the Committee with an overview of Council action on this issue (intent is to revise Federal definition to be consistent with State definition, which does not require the guide to be onboard the same vessel as the client to be considered guiding, in order to prevent circumvention of the differential bag limit for guided anglers in Area 2C; could also become an issue for Area 3A in the future). Council has final action scheduled for December. Board members expressed desire to have narrow, enforceable regulations. Council is considering removal of “by being onboard the vessel” and may also consider adding definitions of ‘assistance’ and ‘compensation’.
G. Report on Pacific cod and other ground fish proposals being considered by the Board of Fish. Mark Stichert and Heather Fitch – ADF&G staff

ADF&G staff provided a summary of proposals which will be considered by the Board of Fisheries at either their upcoming October meeting (Pacific cod proposals), or at future Board meetings (other proposals related to State water groundfish fisheries). Discussion by Committee members included timing of Board action, relationship to ongoing Council actions (including Gulf of Alaska trawl bycatch initiative and Steller sea lion considerations), and monitoring aspects (bycatch caps, observer requirements, etc) of State water fishery proposals.

III. Public Testimony was received by the following persons:

- Kelly Brennen- Seldovia Fish and Game Advisory Committee
- Jeff Steele
- Brent Paine- United Catcher Boats.
- Israel Payton- Matanuska Susitna Fish and Game Advisory Committee
- Bruce Morgan/ Jim Stubbs- Anchorage Fish and Game Advisory Committee
- John Zeller-Middle Kuskokwim Fish and Game Advisory Committee
- Craig Lowenberg- Bering Sea Pot Cod Cooperative
- Tony Guggenbickler- Wrangell Fish and Game Advisory Committee
- Henry Mitchell- Coastal Villages Region Fund
- Tom Payton- Mt. Yenlo Fish and Game Advisory Committee
- George Hutchings - Americans for Equal Access
- Frank Kelty- Unalaska Fish and Game Advisory Committee
- Tom Evich
- Beth Stewart- Peninsula Fishermen’s Coalition
- Tim Andrew – Association of Village Council Presidents
- Art Ivanoff- Southern Norton Sound Fish and Game Advisory Committee
- Mike Alfieri – F/V Ocean Storm
- Chad See – Freezer Longline Coalition
- Julie Bonney- Alaska Groundfish Databank
- John Martin Sr. and Victoria Johnson – Tenakee Tribe
- Rose Fosdick - Kawerak

IV. Committee Discussion of Agenda Items A through G

Committee discussion focused primarily on intersection of Council process with Board of Fisheries consideration of State water groundfish proposals. Council member Dersham noted the complexity of issues associated specifically with BOF Pacific cod proposals, and how Board action on State water cod fisheries would have substantial implications, and perhaps unintended consequences, for upcoming Council actions on Gulf of Alaska trawl bycatch management, while Mr. Olson reiterated the Council’s recognition of Board authority for State water fisheries. The Council will review relevant Board proposals at its meeting during the first week of October, and will forward to the Board specific comments prior to the Board’s meeting October 18 – 22. The Council committed to also have staff available to further advise the Board, if necessary, during its deliberations. Board members noted the lengthy process for Council management actions (analysis, review, and rulemaking) and hoped that Council input would further inform the Board in their consideration of State water fishery proposals (including information on monitoring and
 observer requirements, and any information on EM alternatives that may be useful to the Board deliberations on new state water fisheries).

V. Determination of next Protocol Committee meeting or full meeting of the Council/Board of Fisheries

The Executive Directors of the Council and Board will coordinate in terms of exchanging necessary information for this October’s respective meetings (or other meetings where additional Board proposals will be considered), and will determine the need and timing for the next meeting of the Joint Protocol Committee, or possibly a full joint meeting of the full Council and full Board.

VI. Other Business

No other business

VII. Adjourn

The meeting was adjourned at 3:06 pm
DRAFT Decisions Summary Document

2013 Annual Council Coordination Committee Meeting
May 6, 9-10, 2013
Washington, District of Columbia

Decision summary statements listed below for this Council Coordination Committee (CCC) meeting are listed under the agenda topic title as listed in the final agenda, shown at:

D. CCC Meeting Protocols
The CCC adopted modified terms of reference incorporating recommendations from the National Marine Fisheries Service (NMFS) regarding closed session language, a new statement regarding the functional relationship between the CCC and the individual Councils regarding recommendations to NMFS, and other minor revisions.

E. Budget Issues
The CCC received an update on 2013 funding and 2014 budget issues from NMFS, including a possible spending plan for FY 2013 containing an approximate 10 percent reduction compared with FY 2012 funding and slight increase from FY 2012 in the President's proposed budget for FY 2014. However, a formal spending plan has not been released for Congressional consideration and the CCC reached no decisions in reaction to the information presented.

F. Consideration of Managing Our Nations Fisheries 3 (MONF 3) Conference Results
The CCC discussed potential processes for moving ahead with the 128 conference findings, noting that the findings could not be categorized as consensus, majority, or minority findings. The CCC tasked the Pacific Council staff with assigning the findings into categories of (1) changes of a statutory nature, particularly associated with reauthorization of the Magnuson-Stevens Act (MSA), (2) changes of a regulatory nature, including (a) revision of National Standard Guidelines and (b) revisions to other regulations, and (3) changes that require a policy change without regulatory or statutory changes. The CCC established a CCC MSA Subcommittee, comprised of one representative to be designated from each Council, to develop recommendations on MONF3 findings for consideration by the full CCC, with an expectation that this consideration occur in late summer 2013 via special webinar CCC meeting. Regional Councils will make an effort to provide additional input to the CCC MSA Subcommittee as allowed by their schedules and the progress of the legislative process.

G. ESA Transparency
The CCC discussed and provided input on the Marine Fisheries Advisory Committee Endangered Species Act Working Group (Workgroup) Report options, which were designed to increase confidence in the science and process used for Section 7 consultations under the Endangered Species Act on Magnuson-Stevens Act fishery management actions. The CCC
recommended the Workgroup continue developing and refining the options for the final report, which is scheduled for October 2013, for CCC discussion at the 2014 interim meeting.

H. **Electronic Monitoring**
Terms of reference for the CCC’s Electronic Monitoring Workgroup were adopted (Agenda Item H. Supplemental Attachment 3), noting that Councils not represented on the workgroup can be added to the workgroup by notifying Kitty Simonds. The group will be convened by Kitty Simonds to meet over the summer, provide NMFS with comment on NMFS’ Policy on Electronic Technologies and Fishery-Dependent Data Collection, and provide input on any scientific and technical guidance being developed by NMFS. The Workgroup may also provide comment on the national EM workshop being developed by Lowman and Associates, as well as other items covered in the Workgroup’s terms of reference. It was agreed that the work group comments could go forward without returning to the CCC for endorsement.

I. **Allocation Review Process**
The CCC accepted the NMFS offers to (1) compile a listing of existing allocation decisions, including dates for those decisions so as to provide an indication fresh or stale status, and (2) provide recommendations from the Office of Science and Technology on specifications of a possible National SSC task to identify performance standards for possible allocation review processes and analysis of proposed allocation revisions; these work products are expected to be completed in time for consideration at the 2014 CCC interim meeting. The CCC would also consider ideas related to reallocation processes that were developed as findings during the MONF3 conference, and Council-specific proposals to move forward with an allocation review process. An update of progress on these matters is expected at the proposed CCC interim webinar meeting in late summer 2013.

After hearing the OIGR subcommittee report on the NOAA action plan in response to the OIG phase 1 Report on Magnuson-Stevens Act (MSA) Rulemaking, the CCC divided the OIGR Subcommittee into two separate subcommittees: one with a membership of primarily of RFMC members yet to be named, focusing on OIGR recommendations 1-3 dealing with financial disclosures; and a second with a membership primarily of Executive Directors yet to be named, focusing on OIGR recommendations 3-6 dealing with operational guidelines, regional operating agreements, and records handling. Each subcommittee was directed to work with NMFS in developing timelines and work products, particularly for matters currently scheduled in the NOAA action plan for completion before February 1, 2014. If possible, the late-summer CCC webinar interim meeting will consider any urgent recommendations.

K. **New NEPA Process**
The CCC reviewed the draft revised NEPA Policy Directive that is a result of discussions between the CCC NEPA consultation subcommittee (the Executive Directors of the North Pacific, South Atlantic, and Mid-Atlantic Councils) and NMFS (see Agenda Item K, Supplemental Attachment 5). The CCC approved the proposed edits with one minor change.\(^1\) The draft revised NEPA Policy Directive will be subject to review by NOAA Headquarters

\(^1\) In the first sentence under section II, Applicability, strike “In compliance with MSA section 304(i),”.

2
before final approval and promulgation. If additional changes are mandated by Headquarters review, NMFS will consult with the CCC NEPA consultation subcommittee before issuing a revised Policy Directive. In approving the changes, the CCC made clear that they do not believe the Policy Directive fully addresses the requirements in MSA section 304(i).

I. Next Meetings

The CCC tasked the Pacific Council with convening a special interim CCC meeting via webinar for the primary purpose of dealing with MONF3 findings, expected in late summer but to be timed to coincide with expectations of the House MSA legislation drafting, if possible. The CCC also set the 2014 annual CCC meeting to be during the week of May 12, 2014 in Virginia Beach, Virginia. No date or venue was selected for the 2014 interim CCC meeting typically held in January or February of each year.
Subject: NFI Questions Park Service's Use of Monterey Bay & MSC Ratings
From: Saving Seafood Alerts <alerts@savingseafood.org>
Date: 6/19/2013 10:35 AM
To: chris.oliver@noaa.gov

click here For a web page version of this alert

Saving Seafood

National Fisheries Institute Questions National Park Service's Planned Use of Monterey Bay & MSC Seafood Ratings

WASHINGTON (Saving Seafood) June 19, 2013 -- In a letter to the Secretary of the Interior, John Connelly, President of the National Fisheries Institute, takes issue with a National Park Service proposal to modify food offerings in national parks, by implementing its Sustainable Food Choice Guidelines for seafood. The guidelines state: "where seafood options are offered, provide only those that are 'Best Choices' or 'Good Alternatives' on the Monterey Bay Aquarium Seafood Watch list, certified sustainable by the Marine Stewardship Council, or identified by an equivalent program that has been approved by the NPS."

Mr. Connelly writes that the Magnuson-Stevens Act, the law managing US fisheries, is "a rigorous, participatory, and transparent system that ensures fish caught in US waters is sustainable." Because of this, and fisheries management that is "recognized as one of the best in the world," Mr. Connelly states that fish caught in the United States do not need additional third-party certification.

Mr Connelly also recommends NOAA's Fish Watch program as a source of information on sustainable seafood, stating that it "provides 'easy-to-understand science-based facts' to help vendors and consumers alike make smart sustainable seafood choices."

The full text of the letter is reproduced below.

The Honorable Sally Jewell
Secretary
United States Department of the Interior
1951 Constitution Avenue, NW
Washington, D.C. 20240

Dear Secretary Jewell:

Congratulations on your new initiative to promote healthy food options for the millions of visitors who travel to our National Parks. Encouraging Americans to enjoy healthy diets, especially those that include seafood, is an important mission of the National Fisheries Institute.

Our organization, which represents the full seafood value chain in the United States, requests more information to better understand what Interior and the National Parks Service means by "sustainable seafood" and what counts as "certified sustainable seafood" in the new guidelines for vendors.

The Department of Commerce and National Oceanic and Atmospheric Administration (NOAA) oversee implementation of the Magnuson Stevens Act (MSA), our nation's fisheries law. MSA is a rigorous, participatory, and transparent system that ensures fish caught in U.S. waters is sustainable. The science-based fisheries management system managed by NOAA is recognized as one of the best in the world. Moreover, NOAA's Fish Watch program provides "easy-to-understand science-based facts" to help vendors and consumers alike make smart sustainable seafood choices.

As the National Park Service develops the healthy food standards for its vendors, we ask you to recognize that any fish caught in U.S. waters is already "certified sustainable," based on rigorous NOAA oversight and does not need additional certifications. Similarly, any fish grown in the United States must follow strict state and federal laws.

Additional government requirements for third party certifications serve to increase costs and undermine the credibility and good work that Commerce and other regulators already oversee. In other words, why would Interior and NPS require third party certification of seafood sustainability if Commerce were doing its job well?

Please let me know if you have questions or concerns, although your federal partners at NOAA and Commerce and those regulating aquacultured fish are probably even better suited to ensure you fully appreciate the rigor of their system.
Sincerely

John Connelly
President
National Fisheries Institute

cc:
The Honorable Cameron Kerry
Acting Secretary, Department of Commerce U.S. Department of Commerce
1401 Constitution Ave., NW
Washington, D.C. 20230

Dr. Kathryn Sullivan
Acting Under Secretary of Commerce for Oceans and Atmosphere and Acting NOAA Administrator
1401 Constitution Avenue, NW
Washington, D.C. 20230

The Honorable Jon Jarvis Director, National Park Service 1849 C Street NW
Washington, DC 20240

Representative Doc Hastings
Chairman, House Committee on Natural Resources 1203 Longworth House Office Building
Washington, D.C. 20515

Representative Ed Markey
Ranking Member, House Committee on Natural Resources 2108 Rayburn House Office Building
Washington, D.C. 20515

Read a PDF of the letter here

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Saving Seafood Contact Information
phone: 202-595-1212
e-mail: info@savingseafood.org

Join Our Mailing List
MEMORANDUM FOR: William W. Stelle, Jr.  
Administrator, Northwest Region

FROM: James W. Balsiger, Ph.D.  
Administrator, Alaska Region

SUBJECT: 2012 Annual Report for the Alaska Groundfish Fisheries Chinook Salmon Incidental Catch and Endangered Species Act Consultation

June 21, 2013

We are providing to you the 2012 annual report on salmon incidental catch in the Alaska groundfish fisheries. This report fulfills one of the terms and conditions of the December 2, 2009, and the January 11, 2007 (NMFS 2007), supplements to the November 30, 2000, Biological Opinion (BiOp) regarding Authorization of the Bering Sea/Aleutian Islands (BSAI) and Gulf of Alaska (GOA) Groundfish Fisheries. In addition, a supplemental BiOp was issued on January 9, 2012, on the reinitiation of Endangered Species Act (ESA) section 7 consultation on incidental catches of Chinook salmon in the GOA groundfish fisheries, which concluded that the GOA groundfish fisheries are not likely to jeopardize the continued existence of the listed salmon Evolutionarily Significant Units (ESUs) (NMFS 2012).

This memorandum and attachments provide the latest information regarding salmon incidental catch in the Alaska groundfish fisheries and the progress on developing management measures to minimize the take of salmon in the groundfish fisheries. Information reported includes the 2012 incidental catch of salmon, the Coded-Wire Tag (CWT) recoveries, genetic studies, and the development and an update on the implementation of new management measures to minimize salmon incidental catch in the Bering Sea and GOA pollock fisheries. Each issue is detailed below.

We also request re-initiation of ESA section 7 consultation for the GOA groundfish fisheries due to the recovery of two coded-wire tagged Chinook salmon from the Snake River fall-run ESU in 2012 in the GOA pollock fishery. Additional information regarding this first-time event is further discussed under the section on CWT recoveries for the GOA groundfish fisheries.
Incidental Catch of Salmon in the Alaska Fisheries and the Incidental Take Statement for Chinook Salmon

The amount of Chinook salmon incidental catch in the Alaska groundfish fisheries in 2012 was below the incidental take statement amounts for both the BSAI and GOA groundfish fisheries. Attachment 1 provides updated sector-specific information regarding salmon incidental catch in the BSAI and GOA groundfish fisheries for 2004 through December 31, 2012. Approximately 87% of this incidental catch in the BSAI and GOA occurred in the pollock pelagic trawl fishery.

The amount of Chinook salmon incidental catch in the BSAI groundfish fisheries in 2012 of 12,947 fish (Attachment 2, Table 1), is less than the incidental take limit for Chinook salmon in the Bering Sea pollock fishery as managed under Amendment 91 prohibited species catch (PSC) limits and less than the combined incidental take limit of the PSC limit under Amendment 91 and the 8,745 Chinook salmon for the non-pollock fisheries in the BSAI management area. The BSAI fishery incidental take amount statement was revised in accordance with Amendment 91 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP) (NMFS 2009a). Table 1 in Attachment 2 provides data from 1991 to present for incidental catch of Chinook salmon in the Community Development Program (CDQ) fisheries and non-CDQ fisheries. The numbers in Attachment 2 tables vary slightly from Attachment 3 because catch accounting data from March 2013 was used to estimate incidental catch for Attachment 2, Tables 1 and 2, while May 2013 data was used to estimate incidental catch for Attachment 3. The Catch Accounting System is a dynamic system that is continuously updated. For the GOA groundfish fisheries in 2012, the estimated incidental catch of Chinook salmon was estimated at 22,550 fish (Attachment 3). This is below the incidental take statement of 40,000 fish in the 2012 supplemental BiOp.

North Pacific Groundfish and Halibut Observer Program Bycatch Sampling

The Alaska Fisheries Science Center (AFSC), Fisheries Monitoring and Analysis (FMA) Division manages the North Pacific Groundfish and Halibut Observer Program (Observer Program), which monitors groundfish and halibut fishing activities in the U.S. Exclusive Economic Zone off Alaska. The Observer Program is responsible for the collection of fisheries data used by managers for stock assessment and inseason monitoring of the commercial groundfish and halibut fisheries. Data collected by observers are used by managers to monitor quotas, manage groundfish and PSC, and document interactions with protected resources. These data provide the best available scientific information for managing fisheries and developing measures to minimize incidentally caught species, including salmon. The methods used to estimate the number of incidentally caught salmon in the Alaska federal groundfish fisheries vary by area and fishery.

Observers are deployed in the field for up to three months at a time and debrief with FMA staff following their deployment. The data are not finalized until all observers return from the field for debriefing and their data are scrutinized following FMA quality control protocols. Generally, the annual observer data are finalized in late February to early March of the year following the fishery; the 2012 observer data have been finalized.
The Bering Sea pollock fishery is one of the most heavily observed fleets in the nation. In August 2010, NMFS published regulations implementing Amendment 91 to the BSAI FMP (75 FR 53026, August 30, 2010). These regulations, effective January 1, 2011, require 100% observer coverage in the Bering Sea pollock fisheries regardless of vessel length, a census of all salmon species in every haul or fishing trip, and an expanded biological sampling program. Also, NMFS requires shoreside processors to provide a location from which the observer is able to view all sorting and weighing of fish, as well the storage area for salmon. A new sampling protocol for Chinook salmon in the Bering Sea pollock fishery was initiated at the start of the 2011 fishing year. This protocol was designed to conform with recommendations provided in Pella and Geiger (2009). This new protocol includes a complete census of salmon bycatch in the pollock fishery which is then sampled systematically by observers. On catcher/processors and motherships, the vessel personnel are required to save all salmon in an approved storage container until the end of the haul, and electronic monitoring systems are used to ensure compliance with this rule. Before the start of the next haul, the observers count and identify every salmon retained. Observers implement a systematic sampling design for the identified Chinook and chum salmon by selecting every tenth Chinook and every thirtieth chum encountered. The selected fish are used to obtain a length measurement, a genetic tissue sample, and five scales to verify species identification. These fish are also checked for a missing adipose fin, indicating a CWT.

Chinook and chum salmon that are not selected using the systematic sample design are identified by species and counted but no additional biological data are collected. All other salmon species are identified, measured, counted, and checked for a missing adipose fin. Additionally, a separate scale collection is done to verify the observer’s identification.

Catcher vessel observers check every salmon encountered in their randomly collected at-sea composition samples for missing adipose fins and collect a scale sample to verify species identification. The catcher vessel observers monitor to ensure that no salmon are discarded at sea to the best of their ability. Total retained salmon numbers and related genetic samples are obtained from catcher vessel pollock deliveries at the processing facility by the plant observer.

Once the catch is delivered to the processing facility, the plant and vessel observers monitor the entire offload to ensure that all retained salmon are sorted and placed in an approved salmon storage container. The observers collect total salmon numbers and associated biological specimens following the same procedure outlined above for catcher/processors and motherships.

In the 2012 Bering Sea pollock fishery, 1,157 Chinook and 819 chum salmon were measured for length. Of these fish, 1,122 Chinook and 717 chum were sampled for genetic tissue (Table 1). In addition, 5 Chinook, 1 chum, and 1 pink salmon were missing their adipose fin, and their heads were shipped to the Auke Bay Laboratories (Auke Bay Lab) to be scanned for CWT presence and analysis. It is important to note that every biological specimen, such as genetic tissue samples or scale samples, is associated with a length. For this reason the total number of length measurements is expected to exceed the total number of any biological specimen (Table 1).
BSAI Non-pollock Fishery Sampling and Data Collection

The non-pollock fisheries in the BSAI, such as flatfish and Pacific cod trawl, contribute a smaller number of incidentally caught salmon in comparison to the Bering Sea pollock fishery. In these fisheries, the total number of incidentally caught salmon was obtained by using vessel observer at-sea species composition samples that are extrapolated to the vessel’s total catch. Sampling protocols for observers in these non-pollock fisheries are different than those in the pollock fishery, and genetic tissue samples are not required to be collected. However, all salmon species encountered in the randomly collected at-sea species composition samples are checked for missing adipose fins indicating a potential CWT, and scale samples are collected to verify species identification.

In BSAI non-pollock fisheries in 2012, observers measured a total of 38 Chinook and 67 chum salmon; one Chinook salmon was missing an adipose fin and the head was shipped to the Auke Bay Lab (Table 1).

Table 1. Number of length, genetic, and CWT samples collected from incidentally caught salmon in the 2012 Bering Sea/Aleutian Islands pollock and non-pollock fisheries

<table>
<thead>
<tr>
<th>Area/fishery</th>
<th>Salmon species</th>
<th>Lengths</th>
<th>Genetic tissue</th>
<th>CWT¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS pollock</td>
<td>Chinook</td>
<td>1,157</td>
<td>1,122</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Chum</td>
<td>819</td>
<td>717</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Coho</td>
<td>7</td>
<td>n/a²</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Pink</td>
<td>42</td>
<td>n/a²</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sockeye</td>
<td>13</td>
<td>n/a²</td>
<td>0</td>
</tr>
<tr>
<td>subtotal</td>
<td></td>
<td>2,038</td>
<td>1,839</td>
<td>7</td>
</tr>
<tr>
<td>BSAI non-pollock</td>
<td>Chinook</td>
<td>38</td>
<td>n/a²</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Chum</td>
<td>67</td>
<td>n/a²</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Coho</td>
<td>2</td>
<td>n/a²</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Pink</td>
<td>0</td>
<td>n/a²</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sockeye</td>
<td>0</td>
<td>n/a²</td>
<td>0</td>
</tr>
<tr>
<td>subtotal</td>
<td></td>
<td>107</td>
<td>n/a²</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2,145</td>
<td>1,839</td>
<td>8</td>
</tr>
</tbody>
</table>

¹ Salmon head collected from fish missing adipose fin.
² n/a = not part of sampling protocol
³ length measurements
GOA Pollock Fishery Sampling and Data Collection

In 2012 the GOA groundfish fleet must have 100% coverage for catcher vessels greater than 125 ft. length overall (LOA), while catcher vessels between 60 ft. and 125 ft. LOA must have 30% coverage. In 2011, the Observer Program’s biological salmon sampling protocols for the GOA pollock fishery were revised to be as consistent as possible with the changes implemented in the Bering Sea pollock fishery. In January 2012, vessels participating in the directed pollock trawl fisheries agreed to voluntarily retain all salmon encountered while fishing for pollock in the Western and Central GOA in anticipation of Amendment 93 to the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP), which requires 100% retention of all salmon caught in Western and Central GOA pollock fisheries (NMFS, 2011). In July 2012, NMFS published regulations implementing Amendment 93 to the GOA FMP (77 FR 42629, July 20, 2012). These regulations, effective August 25, 2012, require 100% retention of all salmon caught in the directed pollock trawl fishery.

The voluntary 100% retention of all salmon in the pollock fishery allowed catcher vessel observers to check every salmon encountered in their randomly collected at-sea composition samples for missing adipose fins, collect a scale sample to verify species identification and complete a census of salmon retained by vessel personnel after monitoring the vessel offload at the processing facility. The catcher vessel observers monitor that no salmon are discarded at sea to the best of their ability. The vessel observers collect total salmon numbers and associated biological specimens following the same procedure outlined above for catcher/processors and motherships fishing for Bering Sea pollock. Genetic samples from Chinook and chum salmon were obtained by plant observers from vessel pollock deliveries at the processing facility using the systematic sample design described above.

It is important to note that, unlike in the Bering Sea pollock fishery, vessel observers were not deployed on all catcher vessels fishing pollock in the GOA, and plant observers only collected genetic samples from the salmon made available to them by the processing facility. Comparisons between vessel observer data, plant observer collections, and industry provided fish ticket data indicate discrepancies between the number of salmon caught on observed vessels and those made available for genetics sampling in the plant.

Data collected from the observed vessels indicate the relative numbers and species of salmon incidentally taken in the GOA pollock fishery. The total numbers of incidentally caught salmon were obtained using the number encountered by vessel observers during the vessel offload at the processing facility. In rare circumstances where the offload sample was not completed, NMFS Alaska Region used the number of salmon in the at-sea samples to extrapolate to the entire vessel offload.

Total numbers of all other salmon species were collected following the Chinook and chum sampling protocols described above while length measurements and biological data were only collected from salmon encountered within the at-sea composition sample or during the vessel offload monitored by the vessel observer. In the 2012 GOA pollock fishery, 1,017 Chinook, 4 chum, 17 coho, and 1 sockeye salmon were measured for length. Of these fish, 972 Chinook and 3 chum salmon were sampled for genetic tissue (Table 2). In addition, 24 Chinook and 1 coho
salmon were missing their adipose fin, and their heads were shipped to the Auke Bay lab to be scanned for CWT presence and analysis. It is important to note that every biological specimen, such as genetic tissue samples or scale samples, is associated with a length. For this reason the total number of lengths is expected to exceed the total number of biological specimens.

GOA Non-pollock Fishery Sampling and Data Collection

The non-pollock fisheries in the GOA, such as flatfish and Pacific cod trawl, contribute a smaller number of incidentally caught salmon in comparison to the pollock fishery. In 2012, observer coverage for groundfish vessels was the same for both pollock and non-pollock vessels with the exception of the rockfish fishery that requires 100% observer coverage regardless of vessel length.

In these non-pollock fisheries, the total number of incidentally caught salmon is obtained using at-sea species composition samples collected by vessel observers and extrapolated to the vessel’s total catch. Observers’ at-sea samples in these non-pollock fisheries are collected using the same methods as BSAI non-pollock fishery sampling protocols described above.

In the 2012 GOA non-pollock fisheries, observers measured a total of 78 Chinook, 12 chum, and 3 coho salmon. A total of 32 Chinook salmon were sampled for genetic tissue. Of these fish, 5 Chinook were missing an adipose fin (Table 2). Salmon heads were collected and shipped to the Auke Bay Lab to be scanned for CWT presence and analysis.

Table 2. Number of samples collected from incidentally caught salmon in the 2012 Gulf of Alaska pollock and non-pollock fisheries

<table>
<thead>
<tr>
<th>Area/fishery</th>
<th>Salmon species</th>
<th>Lengths</th>
<th>Genetic tissue</th>
<th>CWT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOA pollock</td>
<td>Chinook</td>
<td>1,017</td>
<td>972</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Chum</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Coho</td>
<td>17</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Pink</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sockeye</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>subtotal</td>
<td></td>
<td>1,039</td>
<td>975</td>
<td>25</td>
</tr>
<tr>
<td>GOA non-pollock</td>
<td>Chinook</td>
<td>78</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Chum</td>
<td>12</td>
<td>n/a</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Coho</td>
<td>3</td>
<td>n/a</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Pink</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sockeye</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
</tr>
<tr>
<td>subtotal</td>
<td></td>
<td>93</td>
<td>32</td>
<td>5</td>
</tr>
</tbody>
</table>

Total 1,132 1,007 30

1 Salmon head collected from fish missing adipose fin.
2 n/a = not part of sampling protocol
3 Length measurements
The CWT Program in the Greater Pacific Region of North America

Coded Wire Tags (CWTs) are an important source of information for the stock-specific ocean distribution of those Chinook salmon stocks that are tagged with CWTs and caught as bycatch in the BSAI and GOA groundfish fisheries. Since the late 1960s, CWTs have been used in the greater Pacific region (Alaska, British Columbia, Washington, Idaho, Oregon, and California) to mark anadromous salmonids, particularly hatchery fish (Nandor et al. 2010). Coastwide, more than 53 million juvenile Chinook salmon have been tagged with CWTs in the last several years (2009 and 2010 brood years) by 36 State, Federal, Tribal, and private entities in the United States and Canada, at more than 160 hatcheries and rearing facilities on the West Coast, in addition to natural origin fish trapped and tagged at many sites. The total number of Chinook salmon represented by these 53 million tagged Chinook salmon is over 162 million fish annually (2009 and 2010 brood years). Over a billion Chinook salmon from the greater Pacific region have been tagged with CWTs since 1968. CWT data are used for many purposes, including stock contribution studies where fishery managers seek information on the contribution rates of key stocks in a given fishery (by time and area strata) in order to better manage harvest rates for conservation of the resource (Nandor et al. 2010). CWT data play a key role in the Pacific Salmon Treaty allocations and management of transboundary stocks (Nandor et al. 2010). After 40 years, the CWT program in the greater Pacific region of North America continues to be the most important tool for salmonid research and management (Nandor et al. 2010).

However, CWTs do not provide information on all Chinook salmon stocks harvested in the GOA and BSAI. In particular, no wild or hatchery origin Alaska Chinook salmon stocks are currently being tagged with CWTs in other regions outside of Southeast Alaska. A tagging program on Chinook salmon in the Cook Inlet, Alaska region ended with the 2008 brood year, and no Western Alaska Chinook salmon stocks are currently being tagged. Yukon River (Whitehorse Hatchery, Yukon Territory, Canada) Chinook salmon were tagged with CWTs from 1984 to 2005, and after an interlude, that CWT tagging program was started again with the 2009 brood year.

Although some tagging of wild stocks occurs (mainly in Southeast Alaska), CWTs are used mostly for tagging of hatchery fish. Wild stocks of Chinook salmon are generally under-represented by CWTs, especially outside of Alaska. In the greater Pacific region, Alaska has had the strongest tagging program on wild stocks of Chinook salmon. Of the 26 million CWT Chinook salmon that have been tagged and released in Alaska from the 1992 brood onward, 88% were of hatchery origin and 12% were from wild stocks. Of the 787 million CWT Chinook salmon that have been tagged and released in all locations other than Alaska from the 1992 brood onward, 98% were of hatchery origin, 1% was from wild stocks, and 1% was from mixed-origin stocks.

Because of recent persistent statewide declines in Chinook salmon productivity in Alaska, the Alaska Department of Fish and Game (ADF&G) Chinook Salmon Research Team is recommending establishing a suite of twelve Chinook salmon indicator stocks of wild origin that will provide an ongoing statewide index of Chinook salmon productivity and abundance trends (ADF&G Chinook Salmon Research Team 2013). The twelve Chinook salmon indicator stocks originate in the Unuk, Stikine, Taku, Chilkat Rivers in the Southeastern Alaska region, the
Copper, Susitna, and Kenai Rivers in the Central Alaska region, the Karluk, Chignik, Nushagak, Kuskokwim Rivers in Western Alaska, and the U.S. side of the transboundary Yukon River (ADF&G Chinook Salmon Research Team 2013). A key component of the recommended stock assessment program will involve tagging a representative number of wild juvenile Chinook salmon from each indicator stock with CWTs (ADF&G Chinook Salmon Research Team 2013).

The CWT Program in Alaska

Processing Chinook Salmon Heads from Adipose Fin-Clipped Salmon at Auke Bay Laboratories CWT Lab at Ted Stevens Marine Research Institute (TSMRI)

CWTs are recovered from adipose fin-clipped salmon collected by the AFSC FMA Observer Program from the salmon bycatch in the GOA and BSAI groundfish fisheries. Salmon heads from adipose fin-clipped salmon are periodically sent to the Auke Bay Lab for processing. After CWTs are identified, extracted, read, and verified under a microscope, the recovery data associated with each CWT are entered into a NMFS database. Once the recovery data and tag data have been verified and finalized, they are reported to the coastwide Regional Mark Information System (RMIS) of the Pacific States Marine Fisheries Commission (PSMFC). At that point the data are available for further analysis.

CWT releases from ESA-listed ESUs

The North Pacific Fishery Management Council (NPFMC) contracted with Cramer Fish Sciences to compile a database of CWT release groups of ESA-listed west coast salmon and steelhead, last updated in January 2013 (Vaughan 2013). This database was compiled using the PSMFC’s RMIS CWT database and a list of artificial propagation programs determined by NMFS to be included in an ESA-listed ESU. From this database it can be determined which CWT Chinook salmon recovered in the GOA and BSAI originated from ESA-listed ESUs.

CWT Expansions

Ideally, it would be preferable to calculate a total estimated contribution of Chinook salmon from stocks of interest harvested in the GOA and BSAI in order to determine the impact of the fisheries on these stocks. Total estimated contributions for CWT recoveries can be calculated in a two-step process involving a sampling expansion factor and a CWT marking expansion factor (see Attachment 4, Recovery Estimation Technique, for a more detailed explanation).

Starting in 2011 in the Bering Sea pollock fishery, sampling expansion factors can be calculated for CWT recoveries from the bycatch, thus allowing calculation of total estimated contributions for stocks of interest. In 2011 in the BSAI, a systematic random sampling design recommended by Pella and Geiger (2009) was implemented by the Observer Program to collect genetic samples and check for adipose fin-clipped salmon from approximately 1 out of 10 Chinook salmon (10% sampling rate) encountered as bycatch in the Bering Sea pollock fishery. This 10% sampling rate for the BSAI was established to meet genetic sampling goals, and that salmon heads from adipose fin-clipped salmon would be collected at this same rate.
A sampling rate adequate for genetic sampling, however, may not necessarily be adequate for CWT sampling. According to the Regional Mark Processing Center of the PSFMC, all recovery agencies should strive to randomly sample at least 20% of the commercial landings to have a statistically acceptable estimate of total tag recoveries for a given area-time stratum (Nandor et al. 2010). The ADF&G Chinook Salmon Research Team also recommends that sampling for CWTs be increased to the coastwide standard of 20% of the catch in both the Eastern Bering Sea and GOA trawl fisheries (ADF&G Chinook Salmon Research Team 2013). It should also be pointed out that CWTs provide certain data that genetic sampling cannot replicate, such as positive identification that a fish originated from an ESA-listed ESU. However, there are considerable costs associated with higher sampling rates, as well as added logistical complexity of having differing sampling rates to meet different objectives (CWTs versus genetic samples).

Sampling expansion factors cannot be calculated for the CWT recoveries in the GOA pollock fishery before 2012 or the Bering Sea pollock fishery before 2011 because of limitations with how the data were collected. In these fisheries, salmon heads from adipose fin-clipped salmon were collected not only from the observers’ samples, but also opportunistically when encountered by observers outside of the sample. For CWT recoveries from these fisheries, it is unknown whether the CWTs were collected from inside or outside either the genetics or the observer species composition sample sets. A sampling expansion factor can only be calculated from CWTs recovered from inside a sample where the total number of sampled fish is known. Of the 71 documented CWT recoveries of Chinook salmon from ESA-listed ESUs by observers in the GOA trawl fishery before 2012, three CWTs are known to have been recovered from inside the sample, three CWTs were recovered outside the sample, and for the remaining 65, the sample status is unknown. Starting in 2012 in the GOA, adipose fin-clipped salmon were collected only from inside a genetic sample at the offload or from inside the vessel observer’s species composition sample.

However, CWT marking expansions can be calculated for each CWT recovery from the mark expansion factors for each tag code (Attachment 5, Table 1). Because not all fish in a tag release group are actually tagged with CWTs, marking expansion factors account for the fraction of each release group that is not tagged (see Attachment 4, Recovery Estimation Technique). Additionally for ESA-listed ESUs, the CWT mark expansion of each CWT recovery can be adjusted to take into account the untagged, wild component of each ESU that is not represented by CWTs to derive a total mark expansion for each ESU (Attachment 4). Without being able to calculate total estimated contributions because of unknown sampling expansion factors, total mark expansions offer the closest approximation to the contribution of Chinook salmon from ESA-listed ESUs in the GOA and BSAI. Total mark expansions should be considered minimal estimates for the actual total contribution of Chinook salmon from ESA-listed ESUs in the GOA before 2012 and the BSAI before 2011.

Occurrence of ESA-listed Chinook Salmon ESUs in the GOA and BSAI

Recoveries of CWTs from outside the sample (or from unknown sample origin) are still important for documenting occurrence of ESA-listed ESUs in the GOA and BSAI trawl fisheries. Chinook salmon from the Lower Columbia River (LCR), Upper Willamette River (UWR), Snake River fall-run (SRf-r), and Upper Columbia River Spring (UCR) ESUs have been recovered in
the GOA trawl fishery. Since 1984, CWTs have been recovered from 23 LCR, 109 UWR, 2 SRf-r, and 1 UCR Chinook salmon in the GOA trawl fishery, and from 9 LCR and 12 UWR Chinook salmon in the BSAI trawl fishery, both pre- and post-listing (Attachment 5, Tables 1 and 2). By applying a total mark expansion factor to account for the wild, untagged component of each ESU, the estimated numbers increase to 125 LCR, 405 UWR, 4 SRf-r, and 1 UCR Chinook salmon in the GOA and 10 LCR and 76 UWR Chinook salmon in the BSAI (Attachment 5, Tables 1 and 2). The number of CWT UWR recovered in 2012 (10) was the highest number recovered since 2000. The 2 SRf-r CWT recoveries in the GOA pollock fishery in 2012 are the first Chinook salmon from the SRf-r ESU ever recovered in the GOA.

Research surveys have documented the occurrence of other ESUs of ESA-listed Chinook salmon in the GOA besides the LCR, UWR, SRf-r, and UCR taken in the groundfish fisheries. Small numbers of the Puget Sound (PS) Chinook ESU, the Snake River Spring/Summer (SRS/S) Chinook ESU, and the Snake River Basin (SRB) steelhead ESUs have also been recovered in the GOA in addition to the LCR, UWR, SRf-r, and UCR Chinook ESUs also documented in the GOA fishery. Since 1991, CWTs have been recovered from 3 LCR, 1 PS, 5 SRS/S, 4 UCR, 12 UWR Chinook salmon and 1 SRB steelhead in domestic and foreign research surveys in the GOA (Attachment 5, Tables 3 and 4). By applying a total mark expansion factor to account for the wild, untagged component of each ESU, the estimated numbers increase to 7 LCR, 1 PS, 13 SRS/S, 5 UCR, and 89 UWR Chinook salmon (Attachment 5, Tables 3 and 4).

Origins and Distribution of CWT Chinook Salmon in the GOA

Over time the majority of CWT Chinook salmon recovered as bycatch in the GOA originated from British Columbia and Alaska. Recoveries of CWT Chinook salmon in the bycatch of the GOA groundfish fishery are summarized by state or province of origin (Attachment 9, Table 1). Since 1995, most of the recovered CWTs of Chinook salmon in the GOA fishery have originated from British Columbia (30%) and Alaska (29%), followed by Oregon (23%), Washington (18%) and Idaho (<1%). When accounting for CWT mark expansions for each tag code (see Attachment 4, Recovery Estimation Technique), British Columbia provided 48% of CWT Chinook bycatch, followed by Alaska (34%), Oregon (11%), Washington (8%), and Idaho (<1%). In 8 out of those 18 years, however, Alaska was the major provider of the year’s CWT Chinook salmon bycatch in the GOA after accounting for CWT mark expansions. Since the 1992 brood year, the major producing States’ release of Chinook salmon tagged with CWTs (expressed in numbers of juveniles released) have been Washington (45%), followed by California (22%), Oregon (14%), British Columbia (10%), Idaho (6%), and Alaska (3%). Based on CWT mark expansions, while 82% of the CWT Chinook salmon bycatch in the GOA has originated from British Columbia and Alaska, British Columbia and Alaska together produced only 13% of the CWT Chinook salmon released in the greater Pacific region of North America during this time period.

Few CWTs have been recovered in the GOA trawl fishery in the last few years (excluding the 71 CWTs recovered in a CWT Tunnel Detector Test described later in this report), compared to previous years. In the 2011 GOA trawl fishery, 19 adipose fin-clipped Chinook salmon were collected from the 297 fish examined by observers, an adipose-clip rate of 6.4%. Eight CWT Chinook salmon were recovered from the 2011 GOA groundfish fisheries bycatch (Attachment
In the 2012 GOA trawl fishery, 30 adipose fin-clipped Chinook salmon were collected from the 1017 fish examined by observers, an adipose-clip rate of 2.9%. Five CWT Chinook salmon have been recovered from the 2012 GOA bycatch sampled by observers. The 2012 CWT summary data should be considered preliminary.

Most of the Chinook salmon recovered with CWTs and harvested in the GOA originated from hatchery production (Attachment 9, Table 3), a reflection of the fact that wild stocks of Chinook salmon are under-represented by CWTs, especially outside of Alaskan production. Overall since 1995, 95% of the Chinook salmon bycatch represented by CWTs has been of hatchery origin, 3% from wild stocks, and 2% of mixed hatchery-wild stocks. For Alaska-origin CWT Chinook salmon, however, wild stocks comprised 9% of the bycatch of Alaskan stocks in the GOA since 1995, with hatcheries providing the other 91%. Since 2009, wild stocks have provided 19% of the Alaska-origin CWT Chinook salmon harvested in the GOA, with hatchery stocks providing the other 81%. Washington was the only other state of origin with recoveries of tagged, wild Chinook salmon in the GOA.

The CWT Chinook salmon recovered in the GOA comprised a variety of run-types, and the percentage of each run-type varied by state or province of origin (Attachment 9, Table 5). The different designated run-types are determined by the tagging agency. Overall, the most prevalent run-type of CWT Chinook salmon in the GOA was Spring (45%), followed by Fall (31%), Summer (20%), and small numbers of other run-types. For Alaska stocks, 100% of CWT recoveries were Spring run-type. For British Columbia, the most prevalent run-type was Summer (43%), followed by Fall (31%) and Spring (26%). Washington Chinook were predominantly Fall run-type (57%), followed by Summer (25%), Late Fall Upriver Bright (8%), Spring (6%), and Late Fall (3%). Oregon Chinook were predominantly Spring (54%), followed by Fall (41%), Late Fall Upriver Bright (3%), and Winter (1%).

The CWT Chinook salmon recovered in the GOA from 1995 to 2012 comprised a number of age classes from age-2 to age-6 (Attachment 7, Table 1). Ages of CWT recoveries were calculated by subtracting the brood-year of each CWT recovery from the recovery-year to come up with a total-age for each fish. Almost half of the CWT recoveries were from age-3 fish (45%), followed by age-4 (33%), age-2 (15%), age-5 (6%), and age-6 (1%).

CWT Tunnel Detector Test for the GOA Pollock Fishery

In 2012, Auke Bay Lab conducted a CWT Tunnel Detector Test, a feasibility study with the ultimate goal of increasing the sampling rate for CWTs in the Chinook salmon bycatch from the GOA pollock trawl fishery. A CWT tunnel detector was tested at a processing plant in Kodiak, Alaska during two study periods in the GOA pollock fishery in September and October, 2012. Because the tunnel detector detects CWTs electronically, a successful test and future implementation of tunnel detectors at processing plants could augment the number of salmon heads collected from adipose fin-clipped salmon by observers on fishing vessels. Use of tunnel detectors in processing plants could thus be an effective means to increase the sampling rate for CWTs from the Chinook salmon bycatch in the GOA pollock fishery.
Many of the 2012 CWTs reported above were recovered during the CWT Tunnel Detector Test. A total of 1,203 Chinook salmon was tested with the tunnel detector, resulting in 71 CWT recoveries, a CWT occurrence ratio of 1 CWT per 16.9 fish examined (5.9% CWT occurrence rate). This compares favorably with the CWT occurrence ratio of 1 CWT per 16.5 fish examined (6.0% CWT occurrence rate) observed in the Southeast Alaska Chinook troll fishery for 2012 (Ron Josephson, ADF&G, personal communication, 2012). Out of the 1,203 Chinook salmon examined, 187 had a clipped adipose fin, a rate of 15.5%. Similarly, of the total Chinook salmon sampled in the southeast Alaska troll fishery in 2012, 15.4% had clipped adipose fins. Out of the 71 CWTs recovered in the Tunnel Detector Test, 61 (86%) had a clipped adipose fin, and 10 (14%) had no fin clips. Overall, 33% of Chinook salmon with an adipose fin clip had a CWT, while 67% of Chinook salmon with an adipose clip had no CWT.

The use of tunnel detectors at processing plants has the potential to increase the numbers of CWTs recovered in the Chinook salmon bycatch in the GOA trawl fisheries. At the CWT occurrence rate of 5.9% observed in the Tunnel Detector Test in 2012, the total bycatch of 20,769 Chinook salmon in 2011 would have been expected to include 1,225 CWTs. A sampling rate of 20% could thus have been expected to yield 245 CWTs, in contrast to the actual sampling regime for CWTs in the GOA in 2011 which yielded only 8 CWTs (Attachment 9) out of the total bycatch of 20,769. With implementation of Amendment 93 and the CWT recoveries collected in the 2012 Tunnel Detector Test, the observed recovery of CWTs increased to 76 tagged fish, an improvement over 2011 recovery based on similar quantities of incidentally caught salmon; but still not meeting the recommended 20% sampling rate.

The number of tagged Chinook salmon recovered in the Tunnel Detector Test in 2012 represents the highest number of CWTs recovered in the GOA since 2000, both in terms of observed number of tags and CWT mark expansions (Attachment 9, Tables 1 and 2). Oregon and Washington contributed the largest portion of the Chinook salmon bycatch in the GOA as sampled with the Tunnel Detector Test in 2012, with Alaska and British Columbia contributing a lesser portion, in terms of both observed numbers of tags and CWT mark expansions (Attachment 9, Table 2). This is opposite to the trend in the 1995–2012 averages, where Alaska and British Columbia contributed the largest portion of the bycatch, and Oregon and Washington contributing lesser portions (Attachment 9, Table 1). Only Chinook salmon of hatchery origin were recovered in the Tunnel Detector Test in 2012 (Attachment 9, Table 4), in contrast to the 1995–2012 averages, where a small percentage of wild fish have been recovered (Attachment 9, Table 3).

Chinook salmon recovered in the Tunnel Detector Test were comprised of a variety of run-types, and the percentage of each run-type varied by state or province of origin. All Alaska Chinook recoveries were spring-type Chinook, as is generally consistent with Chinook CWT recoveries from 1995–2012 (Attachment 9, Tables 5 and 6). A larger percentage of British Columbia Chinook salmon captured in 2012 was summer run than in 1995–2012. For Oregon and Washington Chinook salmon, larger proportions of spring run and late fall upriver brights were recovered in 2012 than in 1995–2012. The only Idaho Chinook salmon recovered was a single late fall upriver bright.

Age class distributions were also different in the 2012 Tunnel Detector Test than in 1995–2012 (Attachment 7, Tables 1 and 2). Age refers here to total-age, freshwater plus saltwater periods.
Most CWT recoveries were Age-2, followed by Age-3 and small numbers of Age-4 and Age-5. For the 1995–2012 period, most recoveries of CWT Chinook salmon were Age-3, followed by Age-4, then Age-2.

A complete report on the CWT Tunnel Detector Test is being drafted and should be available for review later in 2013. Clearly, the use of tunnel detectors has the potential to increase the number of CWTs obtained from the bycatch of Chinook salmon and this increases the sampling rate as well. However, to achieve basic statistical goals, CWT sampling must be stratified by area, gear, and time period (Pacific Salmon Commission Coded Wire Tag Workgroup 2008). Estimates of tagged fish harvested in a sample stratum depend on some basic assumptions (Pacific Salmon Commission Coded Wire Tag Workgroup 2008):

1) Sampling in each stratum is representative.

2) The total harvest is known or estimated without bias for the purposes of calculating a sample expansion factor to expand the observed tagged fish to total tagged fish harvested.

3) The sample rate is sufficient to provide an adequate number of tag recoveries to meet statistical criteria to estimate fishery and stock parameters. Currently there is a general criterion that fisheries be sampled at 20% of the catch per strata (Pacific Salmon Commission Coded Wire Tag Workgroup 2008).

NMFS needs to evaluate if the use of tunnel detectors can be practically implemented in the field, and, if so, on what scale and at what cost. Funding would need to be identified to support additional sampling.

The CWT Tunnel Detector Test was designed to be a feasibility study on the practical application of this technology in a processing plant. It was not designed to provide a random, representative sample of the entire Chinook salmon bycatch in the 2012 GOA pollock fishery in this time-area-gear stratum, and the CWT recoveries from the Tunnel Detector Test should not be expanded to Chinook salmon harvested by other vessels fishing in this fishery and delivering to other plants for the purpose of calculating total estimated contributions.

Origins and Distribution of CWT Chinook Salmon in the BSAI

Overall, the majority of CWT Chinook salmon recovered as bycatch in the BSAI originated from British Columbia and Alaska. Recoveries of CWT Chinook salmon in the bycatch of the BSAI groundfish fishery are summarized by state or province of origin (Attachment 6, Table 1). Since 1995, most of the observed CWTs of Chinook salmon in the BSAI fishery have originated from British Columbia (36%) and Alaska (35%), followed by Oregon (17%), Washington (10%), Yukon Territory (3%), and California (<1%). When accounting for CWT mark expansions for each tag code (see Attachment 4, Recovery Estimation Technique), British Columbia provided 61% of CWT Chinook bycatch, followed by Alaska (23%), Oregon (10%), Washington (4%), Yukon Territory (1%), and California (1%). Since the 1992 brood year, the major producing states’ release of Chinook salmon (expressed in numbers of juvenile salmon) tagged with CWTs was led by Washington (45%), followed by California (22%), Oregon (14%), British Columbia (10%), Idaho (6%), and Alaska (3%). Based on CWT mark expansions, while 84% of the CWT
Chinook salmon bycatch in the BSAI has originated from British Columbia and Alaska, British Columbia and Alaska together produced only 13% of the CWT Chinook salmon released in the greater Pacific region of North America during this time period.

Starting in 2011, sampling expansion factors can be calculated for CWT recoveries in the bycatch of the Bering Sea pollock fishery, thus allowing calculation of total estimated contributions for stocks of interest. However, few CWTs have been recovered in the BSAI trawl fishery in the last couple years. In the 2011 BSAI trawl fishery, 13 adipose fin-clipped Chinook salmon were collected from the 2,513 fish examined by observers, an adipose-clip rate of 0.5%. Two CWT Chinook salmon were recovered from the 2011 BSAI bycatch, both originating from Washington (Attachment 6, Table 1), leading to a total estimated contribution of Washington-origin Chinook salmon in the 2011 BSAI bycatch of 21.4 fish. In the 2012 BSAI trawl fishery, 6 adipose fin-clipped Chinook salmon were collected from the 1,160 fish examined by observers, an adipose-clip rate of 0.5%. Two CWT Chinook salmon were recovered from the 2012 BSAI bycatch, one originating from Alaska and one from British Columbia origin, leading to a total estimated contribution of 11.7 Alaska-origin Chinook and 65.2 British Columbia-origin Chinook salmon in the 2012 BSAI bycatch. The 2012 CWT summary data should be considered preliminary.

Most of the Chinook salmon with CWTs recovered in the BSAI originated from hatchery production (Attachment 6, Table 2), a reflection of the fact that wild stocks of Chinook salmon are under-represented by CWTs, especially outside of Alaskan production. For Alaska-origin CWT Chinook salmon however, wild stocks increased to 6% of the bycatch of Alaskan stocks in the BSAI since 1995, with hatcheries providing the other 94%. For all the CWT Chinook salmon that have been tagged and released in all locations other than Alaska from the 1992 brood onward, 98% were of hatchery origin, 1% were from wild stocks, and 1% were from mixed stocks. Washington was the only other state of origin with a recovery of a wild stock in the BSAI.

The CWT Chinook salmon recovered in the BSAI comprised a variety of run-types, and the percentage of each run-type varied by state or province of origin (Attachment 6, Table 3). The different designated run-types are determined by the tagging agency. Overall, the most prevalent run-type of CWT Chinook salmon in the BSAI was Fall (41%), followed by Spring (40%), Summer (18%), and small numbers of other run-types. For Alaska stocks, 100% of CWT recoveries were Spring run-type. For British Columbia, the most prevalent run-type was Fall (43%), followed by Summer (37%) and Spring (20%). Washington Chinook were predominantly Fall run-type (76%), followed by Spring (16%), Summer (4%), and Late Fall Upriver Brights (4%). Oregon Chinook were predominantly Fall (69%), followed by Spring (27%), Winter (3%), and Late Fall Upriver Brights (1%). For Yukon Territory, Spring was the most prevalent run-type (50%), followed by Summer (29%), Fall (14%), and Late Fall (7%).

The CWT Chinook salmon recovered in the BSAI from 1995 to 2012 comprised a number of age classes from age-2 to age-6 (Attachment 7, Tables 1). Almost half of the CWT recoveries were from age-3 fish (48%), followed by age-4 (28%), age-2 (17%), age-5 (6%), and age-6 (1%). Ages of CWT recoveries were calculated by subtracting the brood-year of each CWT recovery from the recovery-year to come up with a total-age for each fish. The 1995–2012 age
distributions of CWT Chinook salmon in the BSAI bycatch are similar to the age distributions of CWT Chinook salmon in the GOA bycatch.

**Genetic Research and Results on Salmon in the BSAI and GOA**

**Genetic Analysis of Salmon Bycatch in the BSAI**

In 2013, the NMFS AFSC Auke Bay Lab reported genetic stock identification results for a subset of Chinook salmon bycatch samples collected in the Bering Sea from the bycatch of the 2011 groundfish trawl fisheries (Guthrie et al. 2013). Samples were genotyped for the 43 unlinked single-nucleotide polymorphism (SNP) markers represented in the ADF&G genetic baseline. In 2011, the genetic samples were collected as part of the vessel observer’s species-composition analysis; therefore, stock composition estimates apply to the sample set and may not represent the entire Chinook salmon bycatch. The majority of the 2,473 Chinook salmon bycatch samples taken in 2011 originated from stocks in Coastal Western Alaska (68%), with smaller contributions from North Alaska Peninsula (9%), British Columbia (8%), and U.S. west coast (6%). The remaining 9% comprised stocks from Northern Alaska Peninsula, Washington, Oregon, and Upper and Middle Yukon River. These estimates are similar to the 2008 to 2010 Chinook salmon bycatch estimates; however, Coastal Western Alaska and North Alaska Peninsula stock compositions trended downward between 2008 and 2010 but increased in 2011 (Attachment 8). Temporal analysis of the samples revealed changes in Chinook salmon stock composition during 2011, with lower contribution of North Alaska Peninsula and Upper Yukon River, and higher concentrations of Coastal Western Alaska Chinook salmon stocks during the B season of the groundfish fishery, compared with the A season.

While changes in sampling protocols between years necessitate caution in comparing annual analyses across years, when the stock compositions were analyzed for 2011, Coastal Western Alaska and Northern Alaska Peninsula stock compositions trended downward between 2008 and 2010 but increased in 2011 (Attachment 8, Figure 1). The Yukon River contribution dropped to its lowest levels in 2011, while British Columbia and West Coast U.S. stock compositions continued to trend upward (Attachment 8, Figure 1). In addition, the extent to which any salmon stock is impacted by the bycatch of the Bering Sea trawl fishery is dependent on many factors including (1) the overall size of the bycatch, (2) the age of the salmon caught in the bycatch, (3) the age of the returning salmon, and (4) the total escapement of the affected stocks taking into account lag time for maturity and returning to the river. As such, a higher stock composition estimate one year does not necessarily infer greater impact than a smaller estimate in another year.

Regulations on prohibited species bycatch management at 50 CFR 679.21(f) implemented under Amendment 91, require that all salmon taken as bycatch in the Bering Sea pollock fishery be sorted by species and counted to ensure compliance with the salmon bycatch caps for the pollock fishery. This has provided additional opportunities for observers to provide representative samples from the salmon bycatch for genetic analysis, and improve the capability to characterize the origin of salmon taken as bycatch in the Bering Sea pollock fishery. In 2011, systematic random sampling was employed to take genetic samples from every tenth incidentally caught Chinook salmon from the pollock trawl fishery. The same systematic random sampling methods were applied in 2012.
Genetic Analysis of Salmon Bycatch in the GOA

While genetic and scale pattern derived stock composition analyses have been completed for available sample sets from the Chinook salmon Prohibited Species Catch (PSC) of the BSAI groundfish trawl fisheries (Myers and Rogers 1988; Myers et al. 2004; NMFS 2009a; Guyon et al. 2010a; Guyon et al. 2010b, Guthrie et al. 2013), limited sampling has precluded estimates of stock composition for salmon PSC in the GOA pollock trawl fishery.

For the 2011 genetic analyses, approximately 240 Chinook salmon axillary process samples from the Western GOA were received by the NMFS Auke Bay Lab from the Alaska groundfish fisheries PSC. This represents an overall fraction sampled of 1.7%. The lack of representative samples and small sample sizes preclude calculating statistically reliable stock composition estimates of the 2011 GOA Chinook salmon bycatch as a whole (Guthrie et al. 2013). Samples were genotyped for 43 SNP markers represented in the ADF&G coastwide Chinook salmon baseline. The 2010 and 2011 GOA samples were predominantly from Chinook salmon stocks from the U.S. Pacific Northwest, British Columbia, and coastal southeastern Alaska (Attachment 8, Figure 2). For reasons discussed above, these results provide “presence” indicators of Chinook salmon stocks rather than relative abundance (Guthrie et al. 2013).

Chinook Salmon Management Measures

Bering Sea Management Measures—Amendment 91

Amendment 91 to the BSAI FMP was implemented in September 2010 (75 FR 53026, August 30, 2010), for management of Chinook salmon bycatch in the Bering Sea pollock fishery. Amendment 91 (NMFS 2009b) combines a PSC limit on the amount of Chinook salmon that may be caught incidentally with an incentive plan agreement (IPA) and performance standard designed to minimize bycatch to the extent practicable. Amendment 91 applies only to management of the Bering Sea pollock fishery and does not affect the management of pollock fisheries in the Aleutian Islands. Under Amendment 91, the pollock fleet is prevented from exceeding the 60,000 Chinook salmon PSC limit in every year. Each year, NMFS allocates a portion of the 60,000 Chinook salmon PSC limit to the mothership sector, catcher/processor sector, inshore cooperatives, and Western Alaska Community Development Quota Program groups if an IPA is formed and approved by NMFS. The sector-level performance standard of 47,591 Chinook salmon is a tool to ensure that each sector does not fully harvest its Chinook salmon PSC allocation in most years. For a sector to continue to receive Chinook salmon PSC allocations under the 60,000 Chinook salmon PSC limit, that sector may not exceed its portion of 47,591 in any three years within seven consecutive years. If a sector fails this performance standard, it will permanently be allocated an annual fixed portion of the 47,591 Chinook salmon PSC limit. All vessels choosing to not participate in an IPA would fish under a portion of the “opt-out” cap of 28,496 Chinook salmon PSC limit and would be ineligible to participate in management measures intended to offer flexibility to vessels harvesting pollock. Chinook salmon bycatch in the BSAI has remained well below 47,591 Chinook salmon, since implementation of this program (Attachment 2, Table 1). For more information see http://www.alaskafisheries.noaa.gov/sustainablefisheries/bycatch/salmon/chinook/feis/eis_1209.pdf
GOA Management Measures—Amendment 93

In 2012, Amendment 93 to the GOA FMP was implemented in the GOA to limit the amount of Chinook salmon caught in the pollock fishery (77 FR 42629, July 20, 2012). Amendment 93 establishes separate PSC limits in the Central and Western GOA for Chinook salmon that would cause NMFS to close the directed pollock fishery in the Central or Western regulatory areas of the GOA, if the applicable limit is reached. This action also requires retention of salmon by all vessels in the Central and Western GOA pollock fisheries until the catch is delivered to a processing facility where an observer is provided the opportunity to count the number of salmon and to collect scientific data or biological samples from the salmon.

Under Amendment 93, the Chinook salmon PSC in the Central and Western GOA pollock fisheries is limited to no more than 25,000 salmon. This amount is below the 2007 Incidental Take Statement of 40,000 fish for Chinook salmon in the GOA groundfish fisheries. A component of Amendment 93 requires full retention of salmon species incidentally caught in the Central or Western GOA pollock fisheries, which is a necessary step to facilitate future stock of origin analyses.

GOA Chinook Salmon Measures: Amendment 97

In June 2013, the NPFMC recommended GOA Amendment 97 to reduce catch of Chinook salmon PSC in the Central and Western GOA for all trawl fisheries, except the directed pollock fishery. If approved by the Secretary of Commerce, this recommendation would set an annual Chinook salmon PSC limit of 7,500 in the Central and Western GOA for Chinook salmon, which would close fisheries in those regulatory areas once a limit is attained. An additional PSC buffer would provide an incentive to annually reduce Chinook salmon PSC to less than 6,500 fish annually. Implementation of some of the management measures evaluated in the draft analysis for this item may require an amendment to the GOA FMP, as well as amendments to implementing regulations. Reducing salmon incidental catch continues to be an important issue for the NPFMC, NMFS Alaska Region, western Alaska communities, and the fishing industry. For more information on this proposal, see the NPFMC web site at http://www.alaskafisheries.noaa.gov/npfmc/bycatch-controls/GOA-salmon-bycatch.html.

Observer Restructuring

In all groundfish and halibut fisheries with partial coverage vessels, NMFS implemented a randomized deployment of observers in January 2013 to yield unbiased estimates of total catch and catch composition. This new deployment program may improve estimation of Chinook salmon bycatch in directed pollock fisheries of the GOA. Additional details on the Observer Program are available at http://www.alaskafisheries.noaa.gov/sustainablefisheries/observers/

The new Observer Program continues to incorporate accounting for Chinook salmon bycatch in the Bering Sea groundfish fisheries developed under Amendment 91. These procedures are unchanged.
Preliminary Information on Coded Wire Tags Recovered in 2013

While this report applies to 2012 incidental catch and CWT data, the request for initiation of Section 7 consultation is also influenced by new CWT data. In 2013 an Exempted Fishing Permit was issued for further experimentation on a salmon excluder device, designed to reduce bycatch of Chinook salmon and other salmon species. In the spring of 2013, that experiment captured approximately 378 Chinook salmon, of which two had CWTs from the SRf-r Chinook stock. While these were fish caught during an experiment, they were caught with groundfish trawl gear in the directed commercial fishery. Thus, we believe that these recoveries provide additional evidence to support our consultation request.

Potential effects of the GOA groundfish Fisheries on the SRf-r Chinook Salmon ESA – ESU

While the two SRf-r Chinook salmon are the first occurrence of this ESU recovered in the Alaska groundfish fisheries, the SRf-r Chinook salmon ESU has experienced substantial recovery since listing. The returns of the SRf-r are enumerated at the Lower Granite Dam of the Snake River. Between 2010 and 2012, approximately 36,000 SRf-r Chinook salmon have returned to the Lower Granite Dam, approximately 9,000 of which are attributed to the wild adult proportion of the ESU. The number of the SRf-r ESU taken in the GOA groundfish fishery is likely to be small, in comparison to the increasing numbers of this ESU available to restore the population. We are unable to enumerate SRf-r Chinook salmon in the GOA groundfish fisheries at this time, but will continue to monitor for its presence through CWT analysis of samples collected by observers. Thus, we request re-initiation of ESA section 7 consultation for the GOA groundfish fisheries due to the recovery of two coded-wire tagged Chinook salmon from the Snake River fall-run ESU in 2012 in the GOA pollock fishery.

If you have any questions, please contact Jeff Hartman at jeff.hartman@noaa.gov or 907-586-7442.
Attachments
1. BSAI and GOA groundfish fisheries total Chinook salmon catch 2004–2012
2. Chinook salmon mortality in BSAI groundfish fisheries
3. Chinook salmon mortality in GOA groundfish fisheries
4. Recovery Estimation Technique
5. Number Recovered and Mark Expansion of ESA-listed CWT Chinook salmon by ESU 1984–2012 GOA and BSAI trawl fisheries (pre and post listing; and run)
6. Number and Mark Expansion of CWT Chinook salmon recovered in the bycatch of the BSAI groundfish fishery by rearing type, run year, and state or province of origin, 1995–2012
7. Age structure of CWT Chinook salmon recovered in the bycatch of the BSAI and GOA groundfish fisheries, 1995–2012, excluding all stocks of Alaska origin
9. Number and Mark Expansion of CWT Chinook salmon recovered in the bycatch of the GOA groundfish fisheries by run year, rearing type, and state or province of origin, 1995 through 2012

c:
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Table 1. BSAI groundfish fisheries total Chinook salmon catch compared against total groundfish catch: 2004–2012*

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<tbody>
<tr>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
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<td>82,695</td>
<td>121,770</td>
<td>21,481</td>
<td>12,406</td>
<td>9,693</td>
<td>25,499</td>
<td>11,344</td>
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<td>1,054</td>
<td>1,256</td>
<td>446</td>
<td>931</td>
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<td>725</td>
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<td>166</td>
<td>636</td>
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<td>308</td>
<td>354</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>All Targets</td>
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<td>56</td>
<td>31</td>
<td>74</td>
<td>10</td>
<td>11</td>
<td>12</td>
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<td>74,266</td>
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<td>129,579</td>
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<td>12,479</td>
<td>26,670</td>
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<tbody>
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<td>Trawl Gear</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>1,341,395</td>
<td>980,866</td>
<td>810,475</td>
<td>803,513</td>
<td>1,199,034</td>
<td>1,204,378</td>
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<td>81,230</td>
<td>85,564</td>
<td>93,077</td>
<td>43,859</td>
<td>38,238</td>
<td>36,938</td>
<td>44,549</td>
<td>53,932</td>
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<td>194,683</td>
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<td>293,334</td>
<td>245,561</td>
<td>277,416</td>
<td>310,371</td>
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<td>80,320</td>
<td>85,325</td>
<td>83,688</td>
<td>99,496</td>
<td>100,458</td>
<td>86,259</td>
<td>79,280</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>122,831</td>
<td>144,323</td>
<td>143,798</td>
<td>136,863</td>
<td>178,038</td>
<td>196,490</td>
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<td>1,981,113</td>
<td>1,982,108</td>
<td>1,860,289</td>
<td>1,546,070</td>
<td>1,337,568</td>
<td>1,355,187</td>
<td>1,818,251</td>
<td>1,858,814</td>
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*2012 data are preliminary

Source: NMFS Alaska Region Catch Accounting System: 3/20/2013
<table>
<thead>
<tr>
<th>Table 2. GOA groundfish fisheries total Chinook salmon catch compared against total groundfish catch: 2004–2012*</th>
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</thead>
<tbody>
<tr>
<td><strong>Trawl Gear Pelagic</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Trawl Gear Non-Pelagic</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Non-Trawl Gear All Targets</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

| **Trawl Gear Pelagic** | Pollock Target | 57,984 | 83,218 | 73,225 | 52,832 | 47,182 | 39,558 | 74,743 | 72,908 | 99,623 |
| | Other Targets | 977 | 1,433 | 3,497 | 4,647 | 4,522 | 3,381 | 4,743 | 4,123 | 4,452 |
| **Trawl Gear Non-Pelagic** | Pollock Target | 7,195 | 897 | 3,259 | 1,351 | 3,556 | 1,921 | 2,994 | 9,217 | 3,576 |
| | Pacific Cod Target | 16,785 | 12,443 | 11,403 | 13,590 | 22,857 | 8,736 | 17,230 | 13,945 | 20,201 |
| | Flatfish | 20,449 | 29,622 | 41,313 | 42,572 | 47,085 | 52,052 | 42,619 | 45,017 | 32,543 |
| | Other Targets | 26,094 | 21,884 | 22,149 | 20,337 | 20,452 | 22,579 | 24,203 | 20,464 | 23,626 |
| **Non-Trawl Gear All Targets** | 59,180 | 50,758 | 53,912 | 54,101 | 56,181 | 55,019 | 71,117 | 84,022 | 74,125 |
| **TOTAL** | 188,664 | 200,254 | 208,758 | 189,429 | 201,835 | 183,246 | 237,649 | 249,695 | 258,146 |

| **Gulf of Alaska Chinook Rate** | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| **Trawl Gear Pelagic** | Pollock Target | 0.216 | 0.320 | 0.213 | 0.665 | 0.226 | 0.074 | 0.574 | 0.171 | 0.186 |
| | Other Targets | - | 0.044 | 0.002 | 0.065 | 0.161 | 0.037 | 0.031 | 0.014 | 0.135 |
| **Trawl Gear Non-Pelagic** | Pollock Target | 0.126 | 0.045 | 0.271 | 0.462 | 0.123 | 0.058 | 0.145 | 0.147 | 0.078 |
| | Pacific Cod Target | 0.167 | 0.229 | 0.167 | 0.195 | 0.123 | 0.433 | 0.450 | 0.322 | 0.026 |
| | Flatfish | 0.043 | 0.013 | 0.006 | 0.041 | 0.032 | 0.023 | 0.034 | 0.023 | 0.049 |
| | Other Targets | 0.025 | 0.059 | 0.017 | 0.002 | 0.001 | 0.012 | 0.078 | 0.066 | 0.044 |

*2012 data are preliminary
Source: NMFS Alaska Region Catch Accounting System: 3/20/2013
Table 1. Chinook salmon mortality in BSI groundfish fisheries

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual with CDQ</th>
<th>Annual without CDQ</th>
<th>Annual CDQ only</th>
<th>A season with CDQ</th>
<th>A season without CDQ</th>
<th>B season with CDQ</th>
<th>B season without CDQ</th>
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</thead>
<tbody>
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<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
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<tr>
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<td>10,536</td>
<td>na</td>
<td>Na</td>
<td>na</td>
<td>2,488</td>
<td>na</td>
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<tr>
<td>1993</td>
<td>37,282</td>
<td>4,900</td>
<td>2,136</td>
<td>38,921</td>
<td>36,699</td>
<td>3,936</td>
<td>2,133</td>
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<tr>
<td>1994</td>
<td>21,430</td>
<td>2,006</td>
<td>1,939</td>
<td>18,939</td>
<td>18,284</td>
<td>3,146</td>
<td>655</td>
</tr>
<tr>
<td>1995</td>
<td>60,802</td>
<td>2,402</td>
<td>43,316</td>
<td>19,868</td>
<td>42,028</td>
<td>18,049</td>
<td>1,289</td>
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<td>34,129</td>
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<td>33,144</td>
<td>14,995</td>
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<tr>
<td>1997</td>
<td>18,930</td>
<td>36,501</td>
<td>17,991</td>
<td>32,322</td>
<td>939</td>
<td>4,179</td>
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<tr>
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<td>18,284</td>
<td>12,609</td>
<td>17,991</td>
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<td>59,984</td>
<td>55,431</td>
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<td>361</td>
<td>3,136</td>
<td>361</td>
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<td>783</td>
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<td>25,691</td>
<td>21,964</td>
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<td>62,582</td>
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<td>15,193</td>
</tr>
<tr>
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<td>27,402</td>
<td>18,028</td>
<td>18,284</td>
<td>17,991</td>
<td>3,146</td>
<td>655</td>
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<td>52,450</td>
<td>29,248</td>
<td>1,289</td>
<td>939</td>
<td>4,179</td>
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<tr>
<td>2005</td>
<td>13,407</td>
<td>34,129</td>
<td>13,407</td>
<td>14,995</td>
<td>13,407</td>
<td>1,289</td>
<td>655</td>
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<td>2006</td>
<td>307</td>
<td>996</td>
<td>391</td>
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<td>391</td>
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</table>

Table 2. Chinook salmon mortality in BS pollock directed fisheries

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual with CDQ</th>
<th>Annual without CDQ</th>
<th>Annual CDQ only</th>
<th>A season with CDQ</th>
<th>A season without CDQ</th>
<th>B season with CDQ</th>
<th>B season without CDQ</th>
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<td>Na</td>
<td>na</td>
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<td>Na</td>
<td>Na</td>
<td>na</td>
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<td>10,579</td>
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<td>19,554</td>
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<td>420</td>
<td>7,158</td>
<td>7,578</td>
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Notes: Updated 3/25/13

Starting in 2011, the sampling method for salmon in BS pollock directed fisheries changed to census counts
Non-CDQ data for 1991–2002 from blend program database (bshark.dbf)
Non-CDQ data for 2003–2007 from Catch Accounting System database (akfish_v_gg_pscg_estimate)
CDQ data for 2011–2012 from Catch Accounting System database (akfish_v_gg_taxa_primary_psc)
CDQ data for 1992–1997 from blend program database (bshark.dbf)
CDQ data for 1998 from blend program database (bshark.dbf)
CDQ data for 1999–2000 from Catch Accounting System database (akfish_v_gg_catch_catch_report_total_catch)
CDQ data for 2001 from Catch Accounting System database (akfish_v_gg_pscg_estimate_cda)
CDQ data for 2002 from Catch Accounting System database (akfish_v_gg_taxa_primary_psc)
A season: January 1 to June 10; B season: June 11 to December 31
For specific pollock season dates by year: see (https://www.alaska.fisheries.noaa.gov/sustainablefisheries/instance/bai_fishing_seasons.pdf)
Source: NMFS Alaska Region Catch Accounting System: 3/25/2013
### Chinook salmon bycatch (numbers of salmon) by quarter from 1991 to 2013 in the GOA pollock and other non-pollock groundfish fisheries.

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Total</th>
<th>First Quarter</th>
<th>Second Quarter</th>
<th>Third Quarter</th>
<th>Fourth Quarter</th>
<th>Annual non-pollock</th>
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<td>4,400</td>
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<td>2,207</td>
<td>5,137</td>
<td>13,152</td>
</tr>
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<td>5,123</td>
<td>1,076</td>
<td>10,629</td>
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<td>4,652</td>
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<td>10,633</td>
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<td>412</td>
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<td>993</td>
<td>5,309</td>
<td>9,028</td>
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</tr>
</tbody>
</table>

1991 - 2002: Blend data. Week end date was used to determine quarters.
Week end dates do not always match quarter dates.

2003 - Current: Catch Accounting System.
Due to changes in regulatory pollock season dates from 1991 to 2001 and to match current pollock season dates, data were grouped by quarter.
First Quarter: Jan 1 - Feb 28
Second Quarter: Mar 1 - May 31
Third Quarter: Jun 1 - Sep 30
Fourth Quarter: Oct 1 - Dec 31
Updated 5/30/2013
Attachment 4

Recovery Estimation Technique

The total number of fish from a particular release group that are caught in a particular area during a particular time period can be estimated in a two-step process (Nandor et al. 2010). The first step is to calculate a sampling expansion factor \( a \) for the fishery in each year (Johnson 2004):

\[
a = \frac{\text{total catch of each species by fishery by year}}{\text{sampled catch of each species by fishery by year}}.
\]

A sampling expansion factor can only be calculated from CWTs recovered from inside a sample where the number of sampled fish is known. CWT recoveries from outside the sample (“select” recoveries where the total number of fish examined is unknown) cannot be used to calculate a sampling expansion factor.

For the sampled catch, the estimated total recoveries of tags for each release group of interest by fishery and year are calculated:

\[
R_{Ti} = aR_{Oi};
\]

\( R_{Ti} \) = estimated total recoveries of tags for the \( i^{th} \) release group;
\( R_{Oi} \) = observed number of tags for the \( i^{th} \) release group release group;
\( a \) = sampling expansion factor for each fishery in each year.

The second step is to account for the fraction of each release group of interest that was tagged (Johnson 2004):

\[
C_T = \sum_{i=1}^{n} b_i R_{Ti};
\]

\( C_T \) = the total estimated contribution for a release group of interest;
\( b_i \) = a CWT marking expansion factor for the \( i^{th} \) release group = (total fish released)/(total fish marked) for the \( i^{th} \) release group;
\( R_{Ti} \) = estimated total recoveries of tags for the \( i^{th} \) release group.

The contribution estimates are then summed over all relevant area and time strata. These are the simplest forms of recovery expansion equations (Nandor, et. al. 2010).

For ESA-listed ESUs, the CWT mark expansion factor can be additionally expanded to take into account the untagged, wild component of each ESU that is not represented by CWTs. A total mark expansion factor \( c_j \) for each ESU can be calculated:

\[
c_j = 1 / (\text{proportion hatchery component for the } j^{th} \text{ ESU}).
\]
The proportion hatchery component is calculated separately for each ESU based on the mean hatchery/wild ratio of a number of years of adult returns for each ESU (Appendix Table 1). The total estimated mark expansion of recoveries \( R_{TMEij} \) can be calculated:

\[
R_{TMEij} = c_j b_{ij};
\]

\( R_{TMEij} \) = the total estimated mark expansion for the \( i \)th release group in the \( j \)th ESU; 
\( c_j = 1 / \) (proportion hatchery component for the \( j \)th ESU); 
\( b_{ij} \) = the CWT marking expansion for the \( i \)th release group in the \( j \)th ESU.

Once again, the contribution estimates are then summed over all relevant area and time strata. For these calculations, each tag code is considered to be a separate release group.

Appendix Table 1. Percentages of hatchery and wild components and Total Mark Expansion Factors for Chinook salmon ESUs.

<table>
<thead>
<tr>
<th>Chinook salmon ESU name</th>
<th>% Hatchery</th>
<th>% Wild</th>
<th>Total Mark Expansion Factor</th>
<th>Source of hatchery/wild ratios</th>
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<tbody>
<tr>
<td>Lower Columbia River</td>
<td>88.9</td>
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<td>1.12</td>
<td>2008-2010 adult return estimates(^1)</td>
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<tr>
<td>Puget Sound</td>
<td>95.0</td>
<td>5.0</td>
<td>1.05</td>
<td>Recent adult return estimates(^2)</td>
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<tr>
<td>Snake River fall-run</td>
<td>75.2</td>
<td>24.8</td>
<td>1.33</td>
<td>2007-2011 spawning escapement estimates(^3)</td>
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<tr>
<td>Snake River spring/summer-run</td>
<td>73.2</td>
<td>26.8</td>
<td>1.37</td>
<td>1995-2012 adult return estimates(^4)</td>
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<tr>
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<td>1.12</td>
<td>1995-2012 adult return estimates(^4)</td>
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<td>Upper Willamette River</td>
<td>81.7</td>
<td>18.3</td>
<td>1.22</td>
<td>2005-2010 adult return estimates(^1)</td>
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</tbody>
</table>

\(^1\) Vaughan 2011.  
\(^2\) LaVoy 2013a.  
\(^3\) LaVoy 2013b.  
\(^4\) Joint Columbia River Management Staff 2013.
### Table 1. Number and mark expansion of ESA-listed CWT salmon by ESU recovered in the bycatch of the GOA and BSAI groundfish fisheries, summed over pre-listing and post-listing periods, 1984–2012.

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<th>BSAI</th>
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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/13
### Table 2. Number and mark expansion of ESA-listed CWT salmon recovered in the GOA and BSAI groundfish fisheries by ESU by year.

#### A. Lower Columbia River Chinook ESU

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<th>Listing status</th>
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<th>Number Recovered</th>
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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/13
Attachment 5, Table 2 continued

Table 2. Number and mark expansion of ESA-listed CWT salmon recovered in the GOA and BSAI groundfish fisheries by ESU by year.

B. Snake River fall-run Chinook

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<th>Listing status</th>
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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/13
Table 2. Number and mark expansion of ESA-listed CWT salmon recovered in the GOA and BSAI groundfish fisheries by ESU by year.

C. Upper Columbia River spring Chinook ESU

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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013
Attachment 5, Table 2 continued

Table 2. Number and mark expansion of ESA-listed CWT salmon recovered in the GOA and BSAI groundfish fisheries by ESU by year.

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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013
Attachment 5 continued

Table 3. Number and mark expansion of ESA-listed CWT salmon recovered in GOA research surveys, post-listing, 1991–2012. No ESUs were ever captured in GOA research surveys pre-listing, and no ESA-listed CWT salmon have been recovered in BSAI research surveys.

<table>
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<tr>
<th>Listing status</th>
<th>ESU name</th>
<th>Number Recovered</th>
<th>CWT Mark Expansion</th>
<th>Total Mark Expansion</th>
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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013

Table 4. Number and mark expansion of ESA-listed CWT salmon recovered in GOA research surveys by ESU, by run year, post-listing, 1991–2012. No ESUs were ever captured in GOA research surveys pre-listing, and no ESA-listed CWT salmon have been recovered in BSAI research surveys.

A. Lower Columbia River Chinook ESU

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<th>Listing Status</th>
<th>ESU Name</th>
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<th>Mark expansion</th>
<th>Total Mark expansion</th>
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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/13
Attachment 5 continued

Table 4. Number and mark expansion of ESA-listed CWT salmon recovered in GOA research surveys by ESU, by run year, post-listing, 1991–2012. No ESUs were ever captured in GOA research surveys pre-listing, and no ESA-listed CWT salmon have ever been recovered in BSAI research surveys.

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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/13
Attachment 5, Table 4 continued

Table 4. Number and mark expansion of ESA-listed CWT salmon recovered in GOA research surveys by ESU, by run year, post-listing, 1992–2012. No ESUs were captured in GOA research surveys pre-listing, and no ESA-listed CWT salmon have been recovered in BSAI research surveys.

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<th>C. Snake River spring/summer Chinook ESU</th>
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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/13
Attachment 5, Table 4 continued

Table 4. Number and mark expansion of ESA-listed CWT salmon recovered in GOA research surveys by ESU, by run year, post-listing, 1991–2012. No ESUs were recovered in GOA research surveys pre-listing, and no ESA-listed CWT salmon have been recovered in BSAI research surveys.

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<th>Listing Status</th>
<th>ESU Name</th>
<th>Run Year</th>
<th>Number Recovered</th>
<th>Mark expansion</th>
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Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/13
**Attachment 5, Table 4 continued**

**Table 4.** Number and mark expansion of ESA-listed CWT salmon captured in GOA research surveys by ESU, by run year, post-listing, 1991–2012. No ESUs were captured in GOA research surveys pre-listing, and no ESA-listed CWT salmon have ever been recovered in BSAI research surveys. Observed numbers include CWTs that are collected and verified.

<table>
<thead>
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<th>Listing Status</th>
<th>ESU Name</th>
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<th>Number Recovered</th>
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<td>Snake River Basin Steelhead</td>
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<td>2010</td>
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<td>0.0</td>
</tr>
<tr>
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<td></td>
<td>2011</td>
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<td>0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2012</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/13
Table 1. Number and mark expansion of CWT Chinook salmon recovered in the bycatch of the BSAI groundfish fisheries run year and state or province of origin, 1995 through 2012.

<table>
<thead>
<tr>
<th>run_year</th>
<th>Alaska</th>
<th>British Columbia</th>
<th>California</th>
<th>Oregon</th>
<th>Washington</th>
<th>Yukon Territory</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number Recovered</td>
<td>CWT Mark Expansion</td>
<td>Number Recovered</td>
<td>CWT Mark Expansion</td>
<td>Number Recovered</td>
<td>CWT Mark Expansion</td>
<td>Number Recovered</td>
</tr>
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<td>1</td>
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<tr>
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<td>20</td>
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<tr>
<td>1997</td>
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<td>0.0</td>
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<tr>
<td>1998</td>
<td>26</td>
<td>82.0</td>
<td>28</td>
<td>220.3</td>
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<td>16.4</td>
<td>1</td>
</tr>
<tr>
<td>1999</td>
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<td>2.9</td>
<td>5</td>
<td>81.4</td>
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<td>0.0</td>
<td>1</td>
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<tr>
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<td>0.0</td>
<td>1</td>
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<tr>
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<td>16.9</td>
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<td>0.0</td>
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<tr>
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<td>82.3</td>
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<tr>
<td>2004</td>
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<tr>
<td>2005</td>
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<td>17</td>
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<td>2006</td>
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<td>38.8</td>
<td>8</td>
<td>93.7</td>
<td>0</td>
<td>0.0</td>
<td>6</td>
</tr>
<tr>
<td>2007</td>
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<td>12.2</td>
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</tr>
<tr>
<td>2008</td>
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<td>0</td>
<td>0.0</td>
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</tr>
<tr>
<td>2009</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
<td>4.8</td>
<td>0</td>
<td>0.0</td>
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<tr>
<td>2010</td>
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<td>2.9</td>
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<td>0.0</td>
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</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>1</td>
<td>1.7</td>
<td>1</td>
<td>9.4</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>168</td>
<td>618.7</td>
<td>172</td>
<td>1674.7</td>
<td>2</td>
<td>16.4</td>
<td>75</td>
</tr>
<tr>
<td>mean</td>
<td>9.3</td>
<td>34.4</td>
<td>9.6</td>
<td>93.0</td>
<td>0.1</td>
<td>0.9</td>
<td>4.4</td>
</tr>
<tr>
<td>average%</td>
<td>35%</td>
<td>23%</td>
<td>36%</td>
<td>61%</td>
<td>0%</td>
<td>1%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/13
### Table 2. Number of CWT Chinook salmon recovered in the prohibited species catch of the BSAI groundfish fisheries by state or province of origin and rearing type, 1995 through 2012.

<table>
<thead>
<tr>
<th>Origin</th>
<th>Rearing Type</th>
<th></th>
<th></th>
<th></th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hatchery</td>
<td>Mixed</td>
<td>Wild</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alaska</td>
<td>158</td>
<td>0</td>
<td>10</td>
<td></td>
<td>168</td>
</tr>
<tr>
<td>British Columbia</td>
<td>172</td>
<td>0</td>
<td>0</td>
<td></td>
<td>172</td>
</tr>
<tr>
<td>California</td>
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<td>2</td>
</tr>
<tr>
<td>Oregon</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>Washington</td>
<td>47</td>
<td>1</td>
<td>1</td>
<td></td>
<td>49</td>
</tr>
<tr>
<td>Yukon Territory</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>468</td>
<td>1</td>
<td>11</td>
<td></td>
<td>480</td>
</tr>
<tr>
<td><strong>average % of total</strong></td>
<td>98%</td>
<td>0%</td>
<td>2%</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013

### Table 3. Percent run-type of CWT Chinook salmon recovered in the prohibited species catch of the BSAI groundfish fisheries by state or province of origin by run type, 1995 through 2012.

<table>
<thead>
<tr>
<th>Origin</th>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
<th>Late Fall</th>
<th>Late Fall Upriver Bright</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>British Columbia</td>
<td>20%</td>
<td>37%</td>
<td>43%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>California</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Oregon</td>
<td>27%</td>
<td>0%</td>
<td>69%</td>
<td>3%</td>
<td>0%</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td>Washington</td>
<td>16%</td>
<td>4%</td>
<td>76%</td>
<td>0%</td>
<td>0%</td>
<td>4%</td>
<td>100%</td>
</tr>
<tr>
<td>Yukon Territory</td>
<td>50%</td>
<td>29%</td>
<td>14%</td>
<td>0%</td>
<td>7%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>40%</td>
<td>18%</td>
<td>41%</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013
Table 1. Age structure of CWT Chinook salmon captured in the bycatch of the GOA and BSAI groundfish fisheries, 1995–2012

<table>
<thead>
<tr>
<th>Fishery*</th>
<th>Age-2</th>
<th>Age-3</th>
<th>Age-4</th>
<th>Age-5</th>
<th>Age-6</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOA</td>
<td>15%</td>
<td>45%</td>
<td>33%</td>
<td>6%</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td>BSAI</td>
<td>17%</td>
<td>48%</td>
<td>28%</td>
<td>6%</td>
<td>1%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Excludes Alaska stocks

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013

Table 2. Age structure of CWT Chinook salmon recovered in the bycatch of the GOA pollock fishery as sampled in the Tunnel Detector Test, 2012.

<table>
<thead>
<tr>
<th>Fishery</th>
<th>Age-2</th>
<th>Age-3</th>
<th>Age-4</th>
<th>Age-5</th>
<th>Age-6</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOA</td>
<td>52%</td>
<td>44%</td>
<td>3%</td>
<td>1%</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Excludes Alaska stocks

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013
Figure 1. Comparison of yearly stock composition estimates (2008–2011) based on available genetic samples from the Bering Sea Chinook salmon bycatch. The same genetic baseline and general regional groupings were used in all analyses. GOA group consists of combined values for NW GOA, Copper, and NE GOA. BAYES 95% credible intervals are plotted for yearly estimates. Source: Guthrie et al. 2013

Figure 2. Comparison of yearly stock composition estimates (2010–2011) based on available genetic samples from the GOA salmon bycatch. The same genetic baseline and general regional groupings were used in all analyses. BAYES 95% credible intervals are plotted for yearly estimates. Source: Guthrie et al. 2013
Table 1. Observed number and mark expansion of CWT Chinook salmon recovered in the bycatch of the GOA groundfish fisheries by run year and state or province of origin, 1995 through 2012.

<table>
<thead>
<tr>
<th>run_year</th>
<th>Alaska</th>
<th>British Columbia</th>
<th>Idaho</th>
<th>Oregon</th>
<th>Washington</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number Recovered</td>
<td>CWT Mark Expansion</td>
<td>Number Recovered</td>
<td>CWT Mark Expansion</td>
<td>Number Recovered</td>
<td>CWT Mark Expansion</td>
</tr>
<tr>
<td>1995</td>
<td>4 11.9</td>
<td>17 177.3</td>
<td>0 0.0</td>
<td>4 7.0</td>
<td>2 2.0</td>
<td>27 198.2</td>
</tr>
<tr>
<td>1996</td>
<td>14 92.4</td>
<td>10 152.9</td>
<td>0 0.0</td>
<td>3 3.5</td>
<td>2 2.0</td>
<td>29 250.7</td>
</tr>
<tr>
<td>1997</td>
<td>2 17.4</td>
<td>12 82.9</td>
<td>0 0.0</td>
<td>4 10.6</td>
<td>1 3.7</td>
<td>19 114.6</td>
</tr>
<tr>
<td>1998</td>
<td>30 157.8</td>
<td>50 585.3</td>
<td>1 1.0</td>
<td>10 55.2</td>
<td>9 19.0</td>
<td>100 818.3</td>
</tr>
<tr>
<td>1999</td>
<td>45 244.3</td>
<td>51 295.9</td>
<td>0 0.0</td>
<td>32 76.7</td>
<td>17 127.9</td>
<td>145 744.7</td>
</tr>
<tr>
<td>2000</td>
<td>24 224.9</td>
<td>18 38.1</td>
<td>0 0.0</td>
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<td>10 16.2</td>
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<td>10 100.2</td>
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<td>4 4.0</td>
<td>32 195.6</td>
</tr>
<tr>
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<td>10 47.2</td>
<td>5 113.0</td>
<td>0 0.0</td>
<td>4 4.3</td>
<td>3 3.7</td>
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</tr>
<tr>
<td>2003</td>
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<td>2 28.6</td>
<td>0 0.0</td>
<td>4 8.3</td>
<td>1 1.0</td>
<td>9 60.3</td>
</tr>
<tr>
<td>2004</td>
<td>3 30.5</td>
<td>4 22.0</td>
<td>0 0.0</td>
<td>5 16.9</td>
<td>1 1.1</td>
<td>13 70.6</td>
</tr>
<tr>
<td>2005</td>
<td>3 33.6</td>
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<td>2 3.1</td>
<td>2 2.2</td>
<td>11 125.4</td>
</tr>
<tr>
<td>2006</td>
<td>10 58.3</td>
<td>7 158.3</td>
<td>0 0.0</td>
<td>2 2.1</td>
<td>5 14.5</td>
<td>24 233.1</td>
</tr>
<tr>
<td>2007</td>
<td>13 99.1</td>
<td>3 50.9</td>
<td>0 0.0</td>
<td>2 2.1</td>
<td>5 21.3</td>
<td>23 173.3</td>
</tr>
<tr>
<td>2008</td>
<td>6 52.3</td>
<td>1 1.0</td>
<td>0 0.0</td>
<td>3 9.3</td>
<td>12 12.9</td>
<td>22 75.5</td>
</tr>
<tr>
<td>2009</td>
<td>5 41.4</td>
<td>2 5.2</td>
<td>0 0.0</td>
<td>2 2.8</td>
<td>4 4.5</td>
<td>13 53.9</td>
</tr>
<tr>
<td>2010</td>
<td>10 81.3</td>
<td>4 4.0</td>
<td>0 0.0</td>
<td>10 25.9</td>
<td>12 23.7</td>
<td>36 135.0</td>
</tr>
<tr>
<td>2011</td>
<td>3 32.3</td>
<td>1 51.4</td>
<td>0 0.0</td>
<td>2 13.4</td>
<td>2 2.0</td>
<td>8 99.2</td>
</tr>
<tr>
<td>2012</td>
<td>8 56.5</td>
<td>13 34.7</td>
<td>1 2.0</td>
<td>24 134.1</td>
<td>30 59.2</td>
<td>76 286.5</td>
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<td>210 1962.9</td>
<td>2 3.0</td>
<td>157 441.8</td>
<td>122 320.9</td>
<td>693 4132.3</td>
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<tr>
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<td>11.2 78.0</td>
<td>11.7 109.0</td>
<td>0.1 0.2</td>
<td>8.7 24.5</td>
<td>6.8 17.8</td>
<td>38.5 229.6</td>
</tr>
<tr>
<td>average % of total</td>
<td>29% 34%</td>
<td>30% 48%</td>
<td>0% 0%</td>
<td>23% 11%</td>
<td>18% 8%</td>
<td>100% 100%</td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013
Table 2. Number of Chinook salmon CWTs recovered and CWT Mark Expansion of CWT Chinook salmon captured in the bycatch of the GOA groundfish fishery as sampled in the Tunnel Detector Test, 2012.

<table>
<thead>
<tr>
<th>run_year</th>
<th>Number Recovered</th>
<th>CWT Mark Expansion</th>
<th>Number Recovered</th>
<th>CWT Mark Expansion</th>
<th>Number Recovered</th>
<th>CWT Mark Expansion</th>
<th>Number Recovered</th>
<th>CWT Mark Expansion</th>
<th>Number Recovered</th>
<th>CWT Mark Expansion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>5</td>
<td>56.5</td>
<td>13</td>
<td>34.7</td>
<td>1</td>
<td>2.0</td>
<td>24</td>
<td>134.1</td>
<td>30</td>
<td>59.2</td>
</tr>
<tr>
<td>average</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total</td>
<td>7%</td>
<td>14%</td>
<td>18%</td>
<td>14%</td>
<td>1%</td>
<td>1%</td>
<td>34%</td>
<td>53%</td>
<td>39%</td>
<td>19%</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013
### Table 3. Number of CWT Chinook salmon captured in the bycatch of the GOA groundfish fishery by state or province of origin and by rearing Type, 1995–2012. Observed numbers include CWTs that are collected and verified.

<table>
<thead>
<tr>
<th>Rearing Type</th>
<th>Origin</th>
<th>Unknown</th>
<th>Hatchery</th>
<th>Mixed</th>
<th>Wild</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0</td>
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<td>202</td>
</tr>
<tr>
<td></td>
<td>British Columbia</td>
<td>0</td>
<td>210</td>
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<td>0</td>
<td>210</td>
</tr>
<tr>
<td></td>
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<td>1</td>
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<td>108</td>
<td>11</td>
<td>3</td>
<td>122</td>
</tr>
<tr>
<td>TOTAL</td>
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<td>1</td>
<td>659</td>
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<td></td>
<td>0%</td>
<td>95%</td>
<td>2%</td>
<td>3%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013

### Table 4. Number of CWT Chinook salmon captured in the bycatch of the GOA groundfish fishery by state or province of origin and by rearing type, as sampled in the Tunnel Detector Test, 2012. Observed=collected/verified.

<table>
<thead>
<tr>
<th>Rearing Type</th>
<th>Origin</th>
<th>Unknown</th>
<th>Hatchery</th>
<th>Mixed</th>
<th>Wild</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alaska</td>
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<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
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<td>0</td>
<td>0</td>
<td>13</td>
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</tr>
<tr>
<td></td>
<td>Oregon</td>
<td>0</td>
<td>24</td>
<td>0</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Washington</td>
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<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013
### Table 5. Percent run-type of CWT Chinook salmon captured in the bycatch of the GOA groundfish fishery by state or province of origin, 1995–2012

<table>
<thead>
<tr>
<th>Run-type</th>
<th>Origin</th>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
<th>Late Fall</th>
<th>Late Fall Upriver Bright</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alaska</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
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<tr>
<td></td>
<td>British Columbia</td>
<td>26%</td>
<td>43%</td>
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<td>0%</td>
<td>0%</td>
<td>100%</td>
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<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Oregon</td>
<td>54%</td>
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<tr>
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<td>Washington</td>
<td>6%</td>
<td>25%</td>
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<td>3%</td>
<td>8%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>MEAN</strong></td>
<td></td>
<td>45%</td>
<td>20%</td>
<td>31%</td>
<td>0%</td>
<td>1%</td>
<td>3%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013

### Table 6. Percent run-type of CWT Chinook salmon captured in the bycatch of the GOA groundfish fishery by state or province of origin, as sampled in the Tunnel Detector Test, 2012

<table>
<thead>
<tr>
<th>Run-type</th>
<th>Origin</th>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
<th>Late Fall</th>
<th>Late Fall Upriver Bright</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alaska</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>British Columbia</td>
<td>15%</td>
<td>77%</td>
<td>8%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Idaho</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Oregon</td>
<td>63%</td>
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<td>29%</td>
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<td>0%</td>
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</tr>
<tr>
<td></td>
<td>Washington</td>
<td>22%</td>
<td>11%</td>
<td>50%</td>
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<td>0%</td>
<td>17%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>MEAN</strong></td>
<td></td>
<td>32%</td>
<td>23%</td>
<td>33%</td>
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<td>12%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: NMFS Alaska Fisheries Science Center Auke Bay Laboratories, Adrian Celewycz, 3/31/2013
May 28, 2013

LETTER OF ACKNOWLEDGEMENT (LOA): 2013-06

Ms. Sheyna Wisdom
Program Manager, Olgoonik Fairweather LLC
3201 C Street, Suite 700
Anchorage, AK  99503-8728

Dear Ms. Wisdom:

This letter acknowledges that you have submitted a scientific research plan dated May 20, 2013 for Natural Resources Consultants, Inc. (NRC)-Olgoonik Fairweather LLC research, Chukchi Sea Environmental Studies Program (CSESP), aboard R/V Westward Wind, as specified at 50 CFR 600.745.

Vessel Name:    R/V Westward Wind, Radio call sign WCX9055
                USCG Document Number 595289

Chief Scientist:    Dr. Jeff June, NRC

Effective Dates:     August 1 – October 1, 2013

Study Area:    The research will be conducted in the northeastern Chukchi Sea, as specified in the research plan.

This LOA is separate and distinct from any permit required by any other applicable law. In order to facilitate identification of your activities as scientific research, you should carry a copy of your scientific research plan and this LOA on board the vessel while conducting scientific research activities.

Generally, activities conducted in accordance with a scientific research plan as acknowledged by a LOA are presumed to be scientific research. This presumption may be overcome if it can be shown that an activity does not fit the definition of scientific research activity or is outside the scope of your scientific research plan.
We request that you provide a copy of any cruise report or other publication created as a result of the cruise, including the amount, composition and disposition of your catch, to:

Dr. Douglas P. DeMaster  
Science and Research Director  
Alaska Fisheries Science Center  
7600 Sand Point Way NE, Bldg. 4  
Seattle, WA 98115

While incidental take of marine mammals is not permitted under this LOA, we request that any incidental take of, or injuries or mortalities to, marine mammals during the course of this research be reported within 24 hours to Jon Kurland (jon.kurland@noaa.gov, 907-586-7638) or Robyn Angliss (robyn.angliss@noaa.gov, 206-526-4032).

For information regarding this LOA, please contact John Clary, (206) 526-4039; FAX (206) 526-4004; e-mail at john.c.clary@noaa.gov.

Douglas P. DeMaster  
Science and Research Director, Alaska Region

cc:  
F/AK – J. Balsiger  
F/AKR – J. Hartman  
F/AKC – J. Clary  
F/AKC1 – R. Nelson  
F/AKC2 – P. Livingston  
F/AKC3 – J. Bengtson  
F/AKC4 – P. Mundy  
F/EN4 – (Juneau), (Anchorage), (Kodiak), (Sitka), (Homer) (Dutch Harbor)  
F/SF – E. Menaches  
F/IA1 – D. Swanson  
USCG D17 - Commander (DRE/PPI)  
ADF&G – Office of the Commissioner  
NPFMC – C. Oliver
Dr. Douglas P. DeMaster  
National Oceanic and Atmospheric Administration (NOAA)  
Science and Research Director  
Alaska Fisheries Science Center  
7600 Sand Point Way ND, Bldg. 4  
Seattle, WA 98115

May 20, 2013

RE: Request for a Letter of Acknowledgement

Dear Dr. DeMaster:

Olgoonik Fairweather LLC (OF), plans to conduct an oceanographic survey in Alaska waters in the northeastern Chukchi Sea in 2013. OF has operated the Chukchi Sea Environmental Studies Program (CSESP) funded by ConocoPhillips, Shell Exploration and Production Company (Shell), and Statoil USA Exploration and Production Company (Statoil) for the last five years. As part of the 2012 Letter of Authorization (LOA), NOAA asked to receive a final report; however, the 2012 final report is not yet available and will be submitted upon completion (anticipated to be late August). An electronic 2011 final report on CD was mailed to your office earlier this year, and all final reports are available on our project website: www.chukchiscience.com. To support the 2013 program, OF and NRC are requesting a Letter of Acknowledgement (LOA) to conduct the work described below in accordance with our scientific research plan.

In 2009, the fish portion of the program was led by Drs. Brenda Norcross and Brenda Holladay of the University of Alaska Fairbanks (UAF) Institute of Marine Science and consisted of mid-water and benthic trawls. In 2010, the fish portion was led by Drs. Bob Meyer and Benny Gallaway of LGL Alaska Research Associates, Inc and consisted of various sizes of mid-water and benthic trawls. Both programs were conducted off the R/V Westward Wind (detail provided below). In 2011, Dr. Jeffrey June of Natural Resources Consultants, Inc. (NRC) took over the project and sampled using mid-water and benthic trawls from the Alaska Department of Fish and Game (ADF&G) F/V Pandalus.

In 2012, CSESP removed the trawling component and included only hydroacoustic surveys for fish simultaneously with the marine mammal/seabird transects and sampling events at fixed stations for benthic infauna (van Veen grab), benthic epifauna (high-definition camera), zooplankton, and physical oceanography. NRC provided oversight of the hydroacoustic collection and are in the process of preparing the final report in collaboration with the concurrent NOAA studies in the Chukchi Sea. With a reduction in funding from the sponsors, OF has adjusted the scope of 2013 program. As in 2012, there will be no trawling component in CSESP, but hydroacoustic data collection will still occur along with the marine mammal/seabirds and other biological oceanography data collected from a CTD, van Veen grab, and zooplankton
nets. At this time, there is no funding for analyses of these data, but OF will archive the dataset for future analyses.

The overall purpose of this research program is to assess the biological and physical status of lease areas within the northeastern Chukchi Sea for ongoing oil and gas resource exploration. The program is designed for information sharing among all stakeholders in the Arctic Seas and the data gathered will contribute to baseline information to allow for the analysis and assessment of potential impacts to the ecosystem. All reports, presentations, and information are available for viewing and download on the program website: www.chukchiscience.com. A general operations plan of the Chukchi Sea studies program is included as Attachment A. The effective dates of this survey will be during the period of August 1, 2013 through October 15, 2013.

Vessel Identification Information – R/V Westward Wind
Radio call sign: WCX-9055
USCG document #: 525289
Collection area: NE Chukchi Sea (see map in Attachment A)
Survey Fieldwork dates: August 1 – October 1, 2013

If you have any questions or concerns, please contact me at 907-267-4611 or sheyna.wisdom@fairweather.com.

Sincerely,

Sheyna Wisdom
Program Manager
Olgoonik Fairweather LLC

Attachments:
Attachment A  Chukchi and Beaufort Sea Plan of Operations with Maps
Attachment B  R/V Westward Wind Description

cc:
John Clary, NOAA
ATTACHMENT A
Chukchi and Beaufort Sea Plan of Operations and Maps
OLGOONIK
Fairweather LLC

CHUKCHI AND BEAUFORT SEA ENVIRONMENTAL STUDIES PROGRAMS
PLAN OF OPERATIONS
2013
EXECUTIVE SUMMARY

Olgoonik Fairweather LLC (OF) will be managing several marine science research programs in the U.S. Chukchi and Beaufort Seas in the 2013 open water season on two research vessels, the R/V Westward Wind and R/V Norseman II. The general timing of the programs is late July through mid-October 2013. OF contracts these two vessels for the season and fills in vessel use time with various contracts to allow for significant cost sharing for mobilization and transit, as well as to maximize “science time” by managing crew changes in the Arctic (rather than traveling back to Nome or Dutch Harbor for each crew change or vessel resupply).

On the R/V Westward Wind, OF will operate the Chukchi Sea Environmental Studies Program (CSESP) and the Shell Offshore Inc. (Shell) Baseline Environmental Sampling Program in the Beaufort and Chukchi Seas. On the R/V Norseman II, OF will operate a portion of the CSESP (moorings), Shell moorings in the Beaufort Sea, and scientific research for two studies contracted by the University of Alaska Fairbanks (UAF). For the two UAF contracts, OF provides vessel and logistics for the scientists only; the study plans are managed directly by the Principle Investigators are not included further in this Plan of Operations. For the industry-funded programs, OF provides vessels, logistics, training, and manages all the subcontractors; therefore, details of these programs are included in this Plan of Operations.

The CSESP is a multi-year, multi-disciplinary studies program jointly funded by ConocoPhillips, Shell, and Statoil and operated by OF. This year will be the 6th year of the program which is an environmental baseline data collection program comprised of some components of the marine ecosystem: physical oceanography, chemical oceanography, biological oceanography (benthic, plankton, fish), seabirds, marine mammals, and passive acoustics. The CSESP focuses on the above companies prospects within Lease Sale 193 in the northeastern Chukchi Sea. Detailed information about the CSESP program and all final reports, presentations, abstracts can be downloaded on the website at http://www.chukchiscience.com.

In addition to the jointly funded CSESP, OF deploys and retrieves scientific instrumentation in the Beaufort Sea for Shell, including metocean instrumentation and passive acoustics. OF will also be working directly for Shell in the Chukchi and Beaufort Seas to collect data for their Baseline Environmental Sampling Program in support of the Environmental Protection Agency (EPA) pre-drilling requirements. Although Shell is not drilling in 2013, they have elected to collect environmental chemistry, benthic, and other environmental data on 2-3 identified well sites this season.

This Plan of Operations summarizes the scientific activities planned for 2013 for both the Chukchi and Beaufort Sea by OF.

SECTION 1  CHUKCHI SEA ENVIRONMENTAL STUDIES PROGRAM

1.1 Program Description

OF will be operating the jointly funded CSESP for the sixth year. CSESP includes data collection at all trophic levels including: marine mammals, seabirds, fish, acoustics, and oceanography (physical, chemical, and biological) in the Lease Sale 193. The regional study area sampled in 2011 and 2012 will not be included this year, but rather, the overall study area will return to the three prospect-specific study areas samples since 2008 for ConocoPhillips (Klondike Study area) and Shell (Burger Study Area) and since 2010 for Statoil (Statoil Study Area), as shown in Figure 1. Each study area is comprised of set transects for surveying seabirds and marine mammals and fixed stations for collecting physical, chemical, and biological oceanographic data. In addition to the prospect-specific study areas, the team has committed to participate in the National Oceanic and Atmospheric Administration (NOAA)’s Distributed Biological Observatory (DBO) program by collecting samples on the DBO line in the Chukchi Sea, http://www.arctic.noaa.gov/dbol/. Figure 1 shows the Point Lay DBO line, however, our team is currently working with the DBO team to identify the preferred line prior to the second science cruise.

In addition, several types of scientific instrumentation are deployed throughout the northeastern Chukchi Sea for collecting meteorological and oceanographic (metocean) and acoustic data. Figure 2 shows the locations of these instruments in the Chukchi Sea.
Updated maps and study plans are located on the project website, www.chukchiscience.com. Furthermore, all stations and equipment locations will be uploaded on the Arctic Ocean Observing System (AOOS) research assets maps located on the AOOS website, www.aoos.org.

Figure 1. Chukchi Study Area Plan Proposed 2013 Science Plan Overview.
Figure 2. Chukchi Sea 2013 Metocean and Passive Acoustics Locations
1.2 Research Vessels

OF has contracted two research vessels to operate this year, as in the last three seasons. All of the scientific sampling will take place on the R/V Westward Wind, managed by Aldrich Offshore Services (Figure 3). The Westward Wind is a 155-ft vessel capable of carrying up to 34 passengers with wet and dry lab space. With her deck in the middle of the ship, we are able to sample in worse weather than other vessels. The Westward Wind and her crew have been integral in the continued success of the program since 2009. She will also deploy and retrieve all of the passive acoustic recorders in the Chukchi Sea this year.

![Figure 3. Research Vessel Westward Wind](image)

The metocean instruments in the Chukchi Sea will be deployed/retrieved on the R/V Norseman II, managed by Norseman Maritime Charters (Figure 4). The Norseman II is a 115-ft forward wheelhouse vessel capable of carrying up to 29 passengers. The Norseman II and her crew have been integral in the success retrieval rate of 110% in the Chukchi and Beaufort Seas since 2009 (recovered one mooring assumed lost from the previous year).

![Figure 4. Research Vessel Norseman II](image)

1.3 Schedule

The general timing of the CSESP is late Jul through mid-October, depending on ice and weather. The vessels will mobilize in Seward and Nome and are anticipated to be in the northeastern Chukchi Sea by July 28, 2013. The Westward Wind and Norseman II will share duties for the first mooring cruise, which takes in place in late July/early August and the Norseman II will then transit to the Beaufort Sea for the Shell mooring. She will remain on other non-industry contracts until the end of the season, when she comes back to retrieve the Shell mooring in late September/early October. The Westward Wind will stay in the Chukchi Sea for science cruises 1 and 2, and will work in both Chukchi and Beaufort Seas for Shell's Baseline Environmental Sampling Program. A summary of cruise lengths is provided below:
Westward Wind

- Chukchi Mooring (Acoustics): 7 days
- Science Cruise #1: 18 days (6 days for each study area)
- Shell Baseline Environmental Sampling: 21 days (14 days in Chukchi, 7 days in Beaufort)
- Science Cruise #2: 23 days (6 days for each study area plus 5 days DBO)
- Chukchi Mooring: 7-10 days

Norseman II

- Chukchi Mooring (Metocean): 7 days
- Beaufort Mooring: 7-10 days
- UAF Contracts
- Beaufort Mooring: 7-10 days
- Chukchi Mooring: as needed

1.4 Scope of Work

For the 2013 program, the physical and biological oceanographic sample stations are laid out on a 30 x 30 nautical mile (NM) grid on each prospect-specific study area, as shown on Figure 1. A total of 72 stations are identified on this grid; 25 of these are around ConocoPhillips Devils Paw prospect (Klondike study area), 25 in Shell’s Burger prospect (Burger study area), and 22 (four of which are included in the Burger study area) in Statoil’s Amundsen’s prospect (Statoil study area). The seabird/marine mammal transects are laid out every 3.75 NM in a north-south direction. A summary by discipline is provided in the following text.

1.4.1 Physical Oceanography

Principal Investigator: Dr. Thomas Weingartner, University of Alaska Fairbanks (UAF) Institute of Marine Science (IMS)

Objectives: The primary objective of the physical oceanography program is to describe spatial and seasonal characteristics of the water masses and circulation in the study area. The main objective of the 2013 oceanographic data will be to combine the physical-oceanographic data with the various biological measurements.

Scope of Work:

- Use a Conductivity, Temperature, Depth (CTD) sampler to determine water-column structure at every fixed station.
- Use a sea-surface temperature, salinity, and fluorescence (SSTSF) sampler to measure SST and salinity as the vessel is underway.
- Use a vessel-mounted acoustic Doppler current profiler (VM-ADCP) to determine water-column structure as vessel is underway.
- No field personnel from Dr. Weingartner's lab are required.

1.4.2 Chemical Oceanography

Principal Investigator: Dr. Jeremy Mathis, UAF

Objectives: Describe spatial and inter-annual variability in the marine carbon cycle to assess the extent and potential impacts of ocean acidification concurrent with other physical and chemical oceanographic measurements.

Scope of Work:

- Use a CTD sampler to determine pH and water column carbonate chemistry at fixed stations.
1.4.3 Plankton Ecology

Principal Investigator: Dr. Russell Hopcroft, UAF

Objectives: Describe spatial and seasonal characteristics of the plankton (phytoplankton and zooplankton) communities in the regional study area. A secondary objective is to obtain opportunistic samples of zooplankton where bowhead whales are observed feeding to determine both the type of prey as well as the concentration that elicits bowhead feeding activity.

Scope of Work:

- Use 150 μm vertical net and 505 μm oblique net to collect zooplankton at every other fixed station.
- Use a CTD to collect water samples for chlorophyll-α analysis at every fixed station.
- One field personnel from Dr. Hopcroft’s lab will be on the vessel. This person will also assist the ocean acidification field lead on each cruise.

1.4.4 Benthic Ecology

Principal Investigator: Dr. Amy Blanchard, UAF

Objectives: Describe spatial characteristics of the benthic invertebrate community in the study area. Assess species composition, abundance and biomass of macrobenthic communities, and opportunistically sample in areas of observed gray whale feeding activity in the area.

Scope of Work:

- Use a van Veen grab for sampling infauna, tissue isotope analysis, sediment grain size, and chlorophyll-α on the second science cruise only.
- Use of digital photography for sampling epifauna.
- One field personnel from Dr. Blanchard’s lab will be on the vessel. OF will provide two interns.

1.4.5 Seabird Ecology

Principal Investigators: Dr. Robert Day and Ms. Adrian Gall, ABR Inc.

Objectives: Describe the spatial and seasonal characteristics and abundance of seabird community in the study area.

Scope of Work:

- Conduct at-sea transects while the ship is running a fixed course. Transects on the prospect-specific study areas are spaced 3.75 NM apart.
- Collect data with a line-transect methodology that uses the “snapshot method” of counting flying birds. When possible, record data on distance of observation so that detection correction factors can be applied to improve density estimates.
- Record data on species (to lowest possible taxon), total number, number in each sex-class (male, female, unknown sex), number in each age-class (juvenile, subadult, adult, unknown age), habitat (air, water, flotsam/jetsam), and behavior (flying, sitting, swimming, feeding, comfort behavior, courtship behavior, other).

1.4.6 Marine Mammal Ecology

Principal Investigator: Dr. Lisanne Aerts, LAMA Ecological
Objectives: Describe the spatial characteristics of the marine mammal use of the study area. Determine species composition, distribution, abundance and density, and determine important areas for life cycle events such as feeding. (based on behavioral observations).

Scope of Work:

- Conduct visual surveys from the vessel along transect lines equidistantly spaced over the study area. The line-transect method will be used to estimate numbers of marine mammals in the development area. Transects on the prospect-specific study areas are spaced 3.75 NM apart.
- Collect sighting data, including species, number of individuals, number of juveniles/calves/pups/cubs, location (lat/long), time of sighting, behavior (feeding, swimming, mating, etc.), direction of travel, pace, and reaction to vessel.

1.4.7 Passive Acoustics

2013 CSESP consists of a passive acoustic monitoring program that will provide information on the ambient sound levels and the distribution of vocalizing marine mammals within the regional study area. The acoustics program includes overwinter recorders and summer recorders. The overwintering recorders operate 20% of the time over the course of 1-year and the summer recorders operate 100% of the time over approximately 4 months.

Principal Investigator: Mr. David Hannay, JASCO Applied Sciences

Objectives: The overall program in the Chukchi Sea is designed to address the ambient and industrial sound levels in the region; detect and classify species of vocalizing marine mammals in the prospects; and detect and classify species within the regional study area.

ConocoPhillips and Statoil have elected to not participate in the deployment of any overwintering recorders in 2013 or the deployment/recovery of any Barrow recorders. The proposal also includes deployment and retrieval of up to eleven (11) summering moorings for Shell on the Burger study area.

Scope of Work:

- **2012-2013 Overwinter Acquisition:** The 9 recorders that were deployed in mid-October 2012 will be recovered in mid- to late-July 2013 (CL50, PL50, PLN40, PLN80, W35, W50, WN20, WN40, B5). Data will be analyzed and integrated in the 2013 annual report. If ice conditions allow, the 6 recorders deployed in 2012 on Hanna Shoal region (PLN100, PLN120, WN60, WN80, PBN20, PBN40). If ice conditions do not allow, these recorders will be recovered in mid-October.
- **2013 Regional Summer Program:** Deploy 20 in late July to record full-time to October. These recorders will operate on a full duty cycle to record to October. The 4 recorders near Barrow (B5, B15, B30, B50) will be deployed/recovered only for Shell.
- **2013-2013 Overwinter Deployment:** Deploy 8 recorders in October 2013 for Shell.
- **2013 Drillsite Deployment:** Deploy up to 11 recorders in late July to record full time to October 8 km from the Shell Burger drill site.

1.4.8 Metocean Instrumentation

The 2013 Program includes deployment and/or recovery of a variety of instrumentation (Figure 2), as follows:
- **Metoecean buoys**: anchored on the seafloor, but float at the surface to collect ambient air and seawater temperature, wind, and other data at the sea surface. Three metoecean buoys will be deployed in late July and retrieved in early October. The vendor is RPS Evans Hamilton, Inc. One metoecean buoy is deployed near Klondike, one is deployed near Burger, and one is deployed near Hanna Shoal.

- **Upward-looking Sonar (ULS) packages (a combination of Ice Profiling Sonar [IPS] and Acoustic Doppler Current Profilers [ADCP] instruments)**: anchored on the seafloor with instruments that float just above the seafloor, to collect current and ice speeds in the water column over a period of one year. The vendor is ASL Environmental Sciences, Inc.
  - ConocoPhillips has two ULS packages (ADCP01/IPS01 in Klondike and ADCP02/IPS02 off of Wainwright). They will be retrieved in late July and not redeployed this year.
  - Statoil has two ULS packages (ADCP/IPS03 and ADCP/IPS04 in Statoil). They will be retrieved in late July and not redeployed this year.
  - Shell has two ULS packages (CJ01/02 on Crackerjack and BU01/BU02 on Burger). They will be retrieved, refurbished, and redeployed in the same location. Shell will also move two ULS packages from Camden Bay to off of Wainwright.

- **Acoustic Wave and Current Profiler (AWAC)**: anchored on the seafloor for profiling currents from the subsea. OF will retrieve one in Burger deployed in 2012. The vendor is RPS Evans Hamilton Inc.

**SECTION 2 BEAUFORT SEA**

OF will be conducting an acoustic and meteocean science program in the Beaufort Sea in 2013 for Shell. This will be the third year for this program. The overall program is designed to assess ambient and industrial sound levels; detect, classify species, and localize vocalizing marine mammals; and collect meteocean air and ocean data, including ambient air and seawater temperature, wind, current, and ice velocities. All work in the Beaufort Sea will be conducted from the R/V Norseman II (Figure 4).

### 2.1 Passive acoustics

Shell has included deployment and recovery of a passive acoustic monitoring program in the Beaufort Sea from Harrison Bay to Camden Bay. Directional Autonomous Seafloor Acoustic Recorders (DASARs) will be deployed in five arrays consisting of seven recorders between Harrison Bay and Camden Bay.

**Principal Investigator:** Dr. Katherine Kim and Dr. Susanna Blackwell, Greeneridge Sciences, Inc.

**Objectives:** The overall program in the Beaufort Sea is designed to address the ambient and industrial sound levels in the region; detect and classify species of vocalizing marine mammals in the prospects; and detect and classify species within the study area. Figure 5 shows recording locations.

**Scope of Work:**

- **2012-2013 Overwinter Acquisition:** The five (5) recorders that were deployed in mid-October 2012 will be recovered in early August 2013.

- **2013 Summer Program:** Up to thirty-five (35) recorders will be deployed in early August to record full-time to late September/early October. These recorders will operate on a full duty cycle to record to October.

- **2013-2014 Overwinter Deployment:** Deploy up to five (5) overwinter recorders in late September/early October to be recovered in 2014.
2.2 Metocean Instrumentation

The 2013 Shell Beaufort Program includes deployment and/or recovery of a variety of instrumentation (Figure 5), as follows:

- **Metocean buoys**: anchored on the seafloor, but float at the surface to collect ambient air and seawater temperature, wind, and other data at the surface. Two metocean buoys will be deployed in late July and retrieved in early October. One is located in Harrison Bay and one is located in Camden Bay. The vendor is RPS Evans Hamilton, Inc.

- **Upward-looking Sonar (ULS) packages (a combination of Ice Profiling Sonar [IPS] and Acoustic Doppler Current Profilers [ADCP] instruments)**: anchored on the seafloor and float just above the seafloor, to collect current and ice speeds in the water column over a period of one year. The vendor is ASL Environmental Sciences, Inc.
  - Shell has two ULS packages (V01/V02 in offshore Camden Bay and A01/A02 in nearshore Camden Bay). They will be retrieved, refurbished, and redeployed in the Chukchi Sea

- **Acoustic Wave and Current Profiler (AWAC)**: anchored on the seafloor for profiling currents from the subsea. We will deploy one in Harrison Bay. The vendor is RPS Evans Hamilton Inc.

SECTION 3 SHELL BASELINE ENVIRONMENTAL SAMPLING PROGRAM

The proposed 2013 Shell Baseline Environmental Sampling Program includes data collection and analysis supporting baseline site characterization at two proposed drill locations in the Chukchi Sea (Burger Lease Area) (Figure 6) and at one proposed drill site location in the Beaufort Sea (Sivuliq Lease Area) (Figure 7). The work is expected to occur for approximately 20 days on the R/V Westward Wind from late-August to early September, beginning in the Chukchi Sea and following in the Beaufort Sea. The specific discipline components of the baseline sampling work include benthic ecology and taxonomy, sediment and tissue (biota) physical and chemical measurements, and sediment profile imaging (SPI).

All sampling is focused in the vicinity of the drill sites with the exception of limited far-field sample collection, which will also occur in both the Chukchi and Beaufort Seas. Figures 7 and 8 depict the locations of the lease areas in the Beaufort and Chukchi Seas, respectively.

3.1 Benthic Ecology

**Objectives:** Determine baseline infaunal species abundance, composition, distribution, and taxonomy and compare results to already existing baseline data. The subcontractor lead for the benthic ecology work NewFields.

**Scope of Work:**

- Measure baseline infaunal species abundance (individuals per m²), biomass (g wet weight per m²), diversity, and taxonomy.
- For field methods, a double van Veen grab sampler will be used to collect sediment for benthic sieving.
- Sediment is sieved until the only remaining material is biological and larger sediment grains.
- Infaunal samples will be preserved in 10% buffered formalin. Benthic ecology samples are co-collected with sediment for physical and chemical analysis and SPI sample locations.
3.2 Environmental Chemistry

Objectives: Measure sediment and biota concentrations and compare to already existing baseline concentrations in the prospect areas and in the broader, regional area. The subcontractor lead in the field for the environmental chemistry discipline is Battelle. Battelle will conduct hydrocarbon analysis on sediment and biota samples. Battelle Marine Sciences Laboratory (Sequim, WA) will conduct methyl-mercury analysis on sediment and biota samples. John Trefry of Florida Institute of Technology (FIT) will conduct metals analysis on sediment and biota samples.

Scope of Work:

- Determine target analyte concentrations of hydrocarbons and metals, in sediments and biota (tissues).
- Compare baseline chemical data to existing baseline data collected in previous years to determine whether any statistically significant differences occur.
- Compare the measured concentrations of target analytes to established thresholds for ecosystem health (potential toxicity).
- Field methods include collecting sediment using a double van Veen grab and sediment corer. Biota for chemical analysis will be collected using a double van Veen grab and clam rake or similar apparatus (e.g., small benthic trawl). Sediment samples for environmental chemistry are co-collected with samples for benthic ecology; this allows for statistically linked data. Environmental chemistry sample collection and benthic sampling will also occur at the same location as the SPI data collection.

3.3 Sediment Profile Imaging

Objectives: Take plan-view and cross-sectional digital photographs of the seafloor and sediment-water interface to provide a baseline of the physical sea-bottom at drill site locations. The subcontractor lead for the SPI work is NewFields.

Scope of Work:

- Evaluate plan-view and cross-sectional digital photographs of the seafloor and sediment-water interface for various parameters including sediment grain size, surface relief, and apparent color redox potential discontinuity layer.
- Compare baseline digital photographs and qualitative evaluation data to existing baseline data collected in 2012 at the Burger A location.
- Field methods include the use of a SPI system equipped with a waterproof, pressure-resistant digital camera. The SPI unit contains a large frame that protects the system from damage during deployment and retrieval on and off the vessel.
Figure 6. Map of Burger Prospect Area, Chukchi Sea and focus of Shell Environmental Baseline Sampling Program in 2013.
ATTACHMENT B

R/V Westward Wind Description
R/V Westward Wind

The Westward Wind is the standard in marine research and development among client choices available in the AOS managed fleet. A converted crab catcher processor the Westward Wind is a tough, heavy duty vessel with long voyage capabilities and the tools necessary to complete complex and difficult assignments. The forward factory was converted to a wet or dry science lab with office space and dedicated hardware and software necessary to acquire accurate and timely data. This vessel has a long history of operations in ice covered waters with competent personnel. The machine space of this vessel includes twin 6170 Lugger mains and three auxiliary generators which allow the vessel to operate under the harshest conditions in a marine environment. The vessel has accommodations for 34 personnel with an exercise room and media center for off duty personnel, while on 24-hour operations. The freezer capacity of this vessel allows for storage of scientific samples and acquisitions for the duration of the voyage. The vessel has an unsurpassed level of competence in the personnel it employs with regard to the theater of operations. The Westward Wind provides a safe and competent platform for extreme marine environments.

For additional information on this vessel, please contact:

David Aldrich
Aldrich Offshore Services
(907) 244-0060
dgaldrich@aldrichoffshore.com
Vessel General Information

Vessel Home Port: Seattle, Washington
Hull Material: Steel
Builder: Bender Marine, Louisiana
Year Built: 1978
Official Number: 595289
IMO Number: 774367
Length (ft): 155.7
Hull Depth (ft): 13.8
Hull Breadth (ft): 34
Gross Tonnage: 289
Net Tonnage: 197
Main Engine: Twin Lugger 6170, 700 hp
Bow Thruster: 250 HP
Main Generator: 250KW & 100KW
Aux Generators: 450 KW
Fuel Capacity: 70,000 gallons
Fuel Burn at Cruise: 900 gallons
Fuel Burn Working: 600 gallons
Potable Water Cap.: 20,000 gallons
Lube Oil Cap.: 1,400 gallons
Range: 12,000 miles
Cruise: 10 knots
Crew: 10
Accommodations: 32
May 28, 2013

LETTER OF ACKNOWLEDGEMENT (LOA): 2013-07

Ms. Sheyna Wisdom
Program Manager, Olgoonik Fairweather LLC
3201 C Street, Suite 700
Anchorage, AK 99503-8728

Dear Ms. Wisdom:

This letter acknowledges that you have submitted a scientific research plan dated May 20, 2013, for University of Alaska Fairbanks (UAF)-Olgoonik Fairweather LLC research, Beaufort Marine Fish Transboundary Survey, aboard F/V Norseman II, as specified at 50 CFR 600.745.

Vessel Name: F/V Norseman II, Radio call sign WDD6688,
USCG Document Number: 601068

Chief Scientist: Dr. Brenda Norcross, UAF

Effective Dates: September 1 – October 1, 2013

Study Area: The research will be conducted in the Beaufort Sea,
as specified in the research plan.

This LOA is separate and distinct from any permit required by any other applicable law. In order to facilitate identification of your activities as scientific research, you should carry a copy of your scientific research plan and this LOA on board the vessel while conducting scientific research activities.

Generally, activities conducted in accordance with a scientific research plan as acknowledged by a LOA are presumed to be scientific research. This presumption may be overcome if it can be shown that an activity does not fit the definition of scientific research activity or is outside the scope of your scientific research plan.
We request that you provide a copy of any cruise report or other publication created as a result of the cruise, including the amount, composition and disposition of your catch, to:

Dr. Douglas P. DeMaster  
Science and Research Director  
Alaska Fisheries Science Center  
7600 Sand Point Way NE, Bldg. 4  
Seattle, WA 98115

While incidental take of marine mammals is not permitted under this LOA, we request that any incidental take of, or injuries or mortalities to, marine mammals during the course of this research be reported within 24 hours to Jon Kurland (jon.kurland@noaa.gov, 907-586-7638) or Robyn Angliss (robyn.angliss@noaa.gov, 206-526-4032).

For information regarding this LOA, please contact John Clary, (206)526-4039; FAX (206) 526-4004; e-mail at john.c.clary@noaa.gov.

[Signature]  
Date

Douglas P. DeMaster  
Science and Research Director, Alaska Region

cc:  
F/AK – J. Balsiger  
F/AKR – J. Hartman  
F/AKC – J. Clary  
F/AKC1 – R. Nelson  
F/AKC2 – P. Livingston  
F/AKC3 - J. Bengtson  
F/AKC4 – P. Mundy  
F/EN4 - (Juneau), (Anchorage), (Kodiak), (Sitka), (Homer) (Dutch Harbor)  
F/SF – E. Menashes  
F/IA1 - D. Swanson  
USCG D17 - Commander (DRE/PPI)  
ADF&G – Office of the Commissioner  
NPFMC - C. Oliver
May 20, 2013

RE: Request for a Letter of Acknowledgement – Beaufort Marine Fish Transboundary Cruise

Dear Mr. DeMaster:

Olgoonik Fairweather LLC (OF) under the guidance of Principle Investigator, Dr. Brenda Norcross of the University of Alaska Fairbanks (UAF), will implement a transboundary (U.S. and Canadian waters) marine fish survey in the eastern part of the Beaufort Sea Outer Continental Shelf Planning Area. To support this program, OF and UAF requests a Letter of Acknowledgement (LOA) to conduct this work in accordance with our scientific research plan.

The purpose of this study is to implement a marine fish survey in the Beaufort Sea Outer Continental Shelf Planning Area. Marine fish species fulfill many ecologically important roles in the Beaufort Sea food web. To understand the food web in this area, information about currents, upwelling, hydrographic structure, and benthic invertebrate and plankton distributions is needed in addition to fish habitats and life histories. This sample plan will document and correlate baseline fish and invertebrate (benthic and zooplankton) species presence, abundance, distribution, and habitat in the eastern Beaufort Sea OCS lease area during the open-water season. Furthermore, the physical and chemical water characteristics that will contribute to a collaborative effort to document oceanographic boundary conditions in the eastern US Beaufort Sea will be documented. The oceanographic data will also provide boundary conditions for the BOEM’s ocean modeling and Oil Spill Risk Analyses.

A general operations plan of the Beaufort Sea studies program is included as Attachment A.

Cruise Objective
The objective of the cruise is to collect quantitative data to assess abundance and distribution of marine fishes and invertebrates that occupy the Alaskan and Canadian Beaufort Sea during the open-water season.

The following samples may be collected:

- Water column hydrography
- Water samples
- Zooplankton
- Small pelagic fishes
- Bottom trawls for demersal fishes and epibenthic invertebrates
- Invertebrate infauna
- Sediment characteristics
Timing of cruise
The vessel will depart from West Dock, Prudhoe Bay, AK approximately August 10, 2013; the actual date will move forward or backward dependent on weather. The cruise is planned to last 21 days. On September 5, 2013 (after 21 days), sampling will end and the vessel will transit to either West Dock to disembark scientists and samples.

Fishing Activities
The vessel that has been contracted for use in the fish portion of the program is the R/V Norseman II. For a more detailed version of the vessel description, see Attachment B.

Vessel Specs – R/V Norseman II
Length: 115 ft
Radio call sign: WDD6688
USCG #: 601068
Collection area: Beaufort Sea (see map in Attachment A)
Survey Fieldwork dates: ~August 10 – September 5, 2013

If you have any questions or concerns, please Sheyna Wisdom the OF Program Manager, at 907-267-4611 or sheyna.wisdom@fairweather.com. You may also contact Dr. Brenda Norcross, Principle Investigator, at 907-479-0518 (office), 907-378-3420 (cell) or bnorcross@alaska.edu.

Sincerely,

Sheyna Wisdom
Program Manager
Olgoonik Fairweather LLC

Attachments:
Attachment A University of Alaska Anchorage Beaufort Transboundary Cruise Study Plan
Attachment B R/V Norseman II Description

cc:
Dr. Brenda Norcross, University of Alaska Fairbanks
Lorena Edenfield, University of Alaska Fairbanks
Jeff Hastings, Olgoonik-Fairweather
John Clary, NOAA
ATTACHMENT A
University of Alaska Anchorage Beaufort Transboundary Cruise Study Plan
2013 Beaufort Transboundary Cruise (TB-2013-US)

Principle Investigator: Brenda L. Norcross bnorcross@alaska.edu  
phone: 907-474-7990 (office); 907-479-0518 (home), 907-378-3420 (cell)  
Institute of Marine Science / University of Alaska Fairbanks  
P.O. Box 757220, 905 N Koyukuk Drive, Fairbanks Alaska 99775

Chief Scientist: Lorena Edenfield leedenfield@alaska.edu  
phone: 907-474-7938 (office), 907-978-4826 (cell)  
Institute of Marine Science / University of Alaska Fairbanks  
P.O. Box 757220, 905 N Koyukuk Drive, Fairbanks Alaska 99775

Vessel: R/V Norseman II (boat specifications can be found in Appendix A)  
Radio Call Sign: WDD6688  
USCG #: 601068  
Open-port phone number: 1-480-768-2500 + 8816 7770 2483  
Fleet 55 phone number: 011 8707 6485 0112  
Iridium satellite phone: 1-480-768-2500 + 8816 3161 6459  
Captian email: captain.n2@amosconnect.com  
Shore Point of Contact (daily contact at 4:00pm, communications protocols can be found in Appendix B):  
Sheyna Wisdom, sheyna.wisdom@fairweather.com,  
Olgoonik-Fairweather, LLC  
907-748-5864 (cell)  
907-267-4611 (office)

A. 2013 Field Season Schedule  
30 June – 16 July 2013- Gear shipped from Fairbanks, AK to Seward, AK to be loaded on Westward Wind  
TBD 2013- Vessel to vessel transfer of gear from Westward Wind to Norseman II in Nome  
1—2 July- Coldwater survival training and HSE day in Fairbanks  
10 August 2013 - Embark scientists and begin cruise from West Dock, AK (Prudhoe Bay); the actual date may be shifted forward or backward dependent on weather and progress of earlier cruises. Begin transit to the eastern edge of the sampling area (~1 day transit).  
5 September 2013- End cruise at West Dock, AK; offload personnel and samples  
TBD October 2013- Demobilize in Seward, AK

B. CRUISE PARTICIPANTS (name, affiliation, role, e-mail, gender):  
Fisheries  
1. Lorena Edenfield, UAF- project manager leedenfield@alaska.edu, F  
2. Kelly Walker, UAF kwalker2@alaska.edu, F  
3. Julia Dissen, UAF disserj@gmail.com, F  
4. Sarah Apsens, UAF apsens@uw.edu, F  
5. Thaddaeus Buser, UAF tbuser@alaska.edu, M
6. Kate Wedemeyer, BOEM kate.wedemeyer@boem.gov, F

Epibenthic Invertebrates
7. Katrin Iken, UAF kbiken@alaska.edu, F
8. Bodil Bluhm, UAF babluhm@alaska.edu, F
9. Lauren Bell, UAF lebell2@alaska.edu, F
10. Carlos Serratos, UAF serratos.carlos@gmail.com, M

Zooplankton/Oceanographic
11. Russ Hopcroft, UAF hopcroft@ims.uaf.edu, M
12. Caitlin Smoot, UAF casmoott@alaska.edu, F
13. Elizaveta Ershova, UAF eershova@alaska.edu, F

Alternate Science Crew
1. Emily Sousa, UAF eesousa@alaska.edu, F
2. Crystal Cano, UAF canocrysal@gmail.com, F

Science crew total N = 13: N=10 female, N=3 male

R/V Norseman II Personnel
1. TBD, Captain
2. TBD, Mate
3. TBD, Engineer
4. TBD, Assistant Engineer
5. TBD, Cook
6. TBD, Assistant Cook
7. TBD, Medic
8. TBD, AB
9. TBD, AB
10. TBD, AB
11. TBD, AB
12. TBD, AB
13. TBD, AB

Vessel crew total N=13

C. CORE PROJECT SUMMARY

A team of scientists from the University of Alaska Fairbanks (UAF) and the Canadian Department of Fisheries and Oceans (DFO) will conduct the work specified in the Bureau of Ocean Energy Management (BOEM) Agreement Number M12AC00011, “US-Canada Transboundary Fish and Lower Trophic Communities.”

The overall goal of the proposed study is to implement a marine fish survey in the eastern part of the Beaufort Sea Outer Continental Shelf (OCS) Planning Area. To ensure that this is a dual-nation transboundary effort that covers the pertinent Beaufort Sea region from 147 to 137° W, we are collaborating with scientists from Canada’s DFO Central Arctic Region to coordinate cruise times and sample collections (20–1000 m depth), and to share collection and analytical methods, data formats, and results. This multi-year sample plan will allow us to document and correlate benchmark fish and invertebrate (benthic and zooplankton) species presence, abundance, distribution, and habitat in the eastern Beaufort Sea OCS lease area during the open-water season. It will contribute samples and data to support Canadian development of a Beaufort shelf fish and marine mammal food web model. Furthermore, we will document physical and
chemical water characteristics that will contribute to a collaborative effort to document oceanographic boundary conditions in the eastern US Beaufort Sea. Based on the results of the open-water surveys, we will recommend refinements of survey methods and future monitoring methods.

Minimal historical data exist for marine fish populations and their prey on the Beaufort Sea shelf. Fish surveys have been conducted sporadically, in 1977 (Frost and Lowry 1983), 1990 (nearshore survey, Thorsteinson et al. 1992), 2008 (Rand and Logerwell 2010; Logerwell et al. 2011) and 2011 (Norcross et al. 2012). The area sampled has ranged from Barrow to the Alaska – Canada border, however contemporary data are absent east of 145° W. As offshore oil development interest expands, more information about the sparsely documented fish and invertebrate species inhabiting the area is required.

The purpose of this study is to implement a marine fish survey in the Beaufort Sea Outer Continental Shelf Planning Area with field collections in 2012, 2013, and 2014. Marine fish species fulfill many ecologically important roles in the Beaufort Sea food web. To understand the food web in this area, information about currents, upwelling, hydrographic structure, and benthic invertebrate and plankton distributions is needed in addition to fish habitats and life histories. The oceanographic data will also provide boundary conditions for the BOEM’s ocean modeling and Oil Spill Risk Analyses.

Alaska Natives along the Beaufort Sea coast have three major concerns regarding their natural resources. The first is oil and gas development, most notably the potential impact of an oil spill. The second concern is potential development of commercial fisheries (Isaac Nukapigak, Alaska Eskimo Whaling Commission, Commissioner from Nuiqsut, 16 Feb 2012). The third concern is the effects of climate change on their marine ecosystem. Fish resources are important both directly as a subsistence food resource in Inupiaq coastal communities and indirectly as forage for upper trophic levels in the Beaufort Sea ecosystem, which are important for the subsistence lifestyle. The present study will address all three of these concerns by informing local communities about the species, size composition and age structure of the fishes along their coast and providing ecosystem-based information to decision makers. Alaska and North Slope Borough residents have expressed that more information is needed for the marine environment. The present study will benefit the State of Alaska by providing a comprehensive assessment of eastern Beaufort Sea fish and lower trophic level resources. This knowledge is needed to assess potential risks of exploitation, oil and gas development, commercial fisheries development and climate change. The present study will provide the Alaska OCS Region and BOEM information for continued fish and invertebrate benchmark monitoring to provide useful information to upcoming National Environmental Policy Act (NEPA) reviews.

NEPA analysts currently must rely on limited historical data and extrapolation from the western Beaufort Sea to project potential development impacts on eastern Alaskan Beaufort Sea marine fishes and lower trophic communities. The results of the present study in the eastern Beaufort Sea will provide BOEM with knowledge about what fish species inhabit the lease area, as well as baseline information about abundance, distribution, habitat, and seasonal/interannual variability of both fish and invertebrates in this understudied lower trophic food web. The present study also will provide information used in environmental impact statements and environmental assessments under NEPA.

The US and Canada share the Beaufort Sea continental shelf and slope ecosystem. The Beaufort Sea continental shelf extends from the Barrow Canyon in western Alaska, east across the US-Canada border, across the Canadian Mackenzie River Canyon, to the Canadian Arctic
Archipelago. In Barrow Canyon, the Alaska Coastal Current forms a coastal jet that sweeps along the Beaufort Sea continental slope west to east in the absence of an easterly wind. However, under the influence of a strong easterly wind, the jet at the edge of the Beaufort shelf reverses and flows westward (Pickart et al. 2011). US Beaufort Sea waters also are influenced by the dynamics of the Mackenzie River, the 12th largest river in the world and the 4th largest river in the Arctic. The Mackenzie River outflow plays a major role in the ecology of the Beaufort Sea shelf including the habitat and ecology of the trans-boundary fish species that range across the US and Canada border. Therefore, we are planning our fish survey together with Canada’s DFO to provide an understanding of how the Mackenzie River and Mackenzie Canyon influence the biology and ecosystem on the shelf and slope of our shared Beaufort Sea, particularly with respect to critical fish habitat, sensitive fish life history stages, migratory pathways and ecological data.

D. CRUISE OBJECTIVE
- Collect quantitative data to assess abundance and distribution of marine fishes and invertebrates that occupy the eastern Alaska part of the Beaufort Sea during the open-water season.

We anticipate collecting the following samples:
- Water column hydrography
- Water samples
- Zooplankton
- Ichthyoplankton
- Small pelagic fishes
- Demersal fishes
- Epibenthic invertebrates

This cruise plan is subject to change while in the field, based on weather and gear conditions.

D.1. Planned sequence of gear deployment
1. CTD with rosette (hydrographic data, water chemistry)
2. Vertical tow, at 20 and 50 m (zooplankton)
3. Bongo (zooplankton, ichthyoplankton)
4. Multinet, at stations deeper than 50 m (zooplankton, ichthyoplankton)
5. IKMT (small pelagic fishes)
6. PSBT or PSBT-A (bottom fishes and epibenthic invertebrates)
7. Canadian benthic trawl for gear comparisons with Norcross/UAF PSBT-A
8. Otter trawl (bottom fishes and epibenthic invertebrates)

E. COLLABORATIVE EFFORTS
Ichthyoplankton processing (Norcross) will occur if separately funded.

F. STATION LOCATIONS AND TIMING
F.1 Transects
Up to eight transects may be sampled in 2013, though we anticipate sampling six transects. Each transect will consist of up to nine stations, located at predetermined depths (20, 50, 75, 100, 200, 350, 500, 750, and 1000 m). Transects are spaced evenly throughout the western Canada (Transects TBS and GRY, Figure 1) and eastern Alaska part of the Beaufort Sea (Transects A1–A6, Figure 1). Exact station locations along each transect will be determined while at sea, based on ship’s fathometer readings. Table 1 shows coordinates for transect endpoints.

Fishes and epibenthic invertebrates will be sampled using the Isaacs-Kidd midwater trawl, plumb staff beam trawl or modified plumb staff beam trawl, Canadian benthic trawl for gear comparisons, and otter trawl. Zooplankton, including ichthyoplankton, will be collected by bongo trawl. A vertical plankton net will be used at the 20 and 50 m stations, while a multinet will be used at stations 100 m and deeper. A CTD will be used to collect water samples and oceanographic data. If time is not available, sampling gears will be cut based on the following criteria: 1) performance and efficiency of gear on previous transects, and 2) time required to fish gear. Table 2 shows anticipated sampling efforts at each depth.

If bottom relief indicated by vessel fathometer display is untrawizable, the entire station will be shifted a maximum of 5 nm east or north from the planned site. If the station still appears untrawizable, it will be abandoned and the vessel will transit to the next planned station. If we encounter ice, we will sample as close to the ice as feasible.
Figure 1. Map of 2013 Collaborative sampling area. The UAF cruise will sample transects A1–A6, TBS, and GRY.
Table 1. Proposed transect endpoints. Station locations will be determined at time of sampling based on field site depth contours.

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Table 2. Ideal sampling efforts at predetermined depths. The mid-shelf station will sample zooplankton at a location that is spatially approximately halfway between the 50 and 100 m depths.

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<th>Sampling Gear</th>
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</tr>
</tbody>
</table>

TB-2013-US Cruise Plan, April 2013 draft
F.2 Timing of cruise

Personnel will embark and the cruise will depart from Oliktok Point, Prudhoe Bay, AK approximately 10 August 2013; it is possible the actual date will move forward or backward dependent on weather. Weather permitting, we will transit to the western edge of the sampling area. Gear preparation will occur during initial transit from West Dock. The timing of this cruise allows for 21 sampling days. We estimate that each transect will take approximately 2.6 days to complete with all gears. After 21 days, sampling will end and the vessel will transit to either Wainwright or West Dock to disembark scientists and samples approximately 2 September 2013.

G. STANDARD OPERATING PROCEDURES

G.1. CTD

G.1.a. Stations will be sampled by a CTD/rosette

- Seabird SBE-25 Sealogger with PAR sensor, Fluorometer/transmissometer, and altimeter mounted onto SBE-55 Eco-Water sampler with six 4-L Niskin bottles, deployed with SOSI ECO-Winch 265
- Weight of package ~200 lbs. when bottles empty

CTD will measure basic water quality, including temperature, conductivity (salinity), pressure (depth), dissolved oxygen, pH, Fluorescence (Turner Fluorometer), and PAR (Biospherical Par sensor) at up to 8 times per second in real time. Bottles are triggered at fixed depths during the up-cast to collect water samples. Water samples will be filtered and frozen for chlorophyll a extraction, and whole water aliquots will be frozen to assess dissolved nutrients post-cruise. Several trace metals and stable isotope signatures will also be determined post-cruise.

G.1.b. Back-up CTD, owned by Olgoonik-Fairweather, LLC.

- Spares for many items prone to failure (mostly electronic cables and termination) will be available for the CTD and rosette.
- An SBE 19 SeaCat profiler will also be taken as backup – this instrument does not allow for the full suite of sensors that the SBE-25 handles, and can either be installed on the rosette or deployed autonomously and downloaded post-cast.

CTD launch and recovery protocols are weather dependent. In calm seas, control may be maintained by one individual working in conjunction with the winch and/or A-frame operator(s). As weather state increases, direct control of the CTD will require use of tag-line.

Upon launch, the CTD is immediately lowered to 3–5 m of water depth to remove it from potential harm by the ship. Power is then turned on, logging of data is commenced, and several minutes may be required for the pump on the unit to start. Once the pump starts, the unit is raised to just below the surface then descent begins at ~0.5 m/sec on shallow cast and up to 1 m/sec on deeper casts. The cast is stopped ~2–3 meters above the bottom based on information provided by an altimeter mounted on the bottom of the CTD.

A bottle is electronically triggered at the bottom of the cast, the ascent begins, stopping at pre-determined depths for collecting water samples. The last bottle is triggered at the surface while observed by deck personal, logging is stopped, and the power turned off prior to retrieval. In rougher seas tag lines may need to be clipped on to affiliate save retrieval. The CTD is generally lifted or dragged to suitable location on deck and secured prior to removing samples from the water bottles.
Particulate organic matter as the baseline reference for food web analysis will be collected from Niskin bottles from CTD up-casts at every station. Water from either the chlorophyll maximum layer identified from the CTD down-casts, or from about 10 m depth, will be filtered onto pre-combusted, 25 mm diameter GFF filters using a filtration manifold and vacuum pump, until filters show slight color. Care will be taken that no larger plankton animals remain on the filters, by pre-filtering the water over 200 µm mesh. Three replicate filters will be prepared, if possible from water from different Niskin bottles. Filters will be placed in small petri-dishes and kept frozen at -20 ºC until further processing.

Sensor failures are generally obvious, and where possible alternate sensors will be installed. Periodic QC checks/calibrations will be made using samples collected for DO (Winkler titration), pH, and salinity to be determined post-cruise. All sensors are periodically calibrated; the temperature and conductivity sensors are typically calibrated at both the beginning and end of the field season.

G.2. Vertical Net

- Frame: twin Stainless-steel 60 cm ring net frame
- Net: 60 cm x 2.5 m 150 µm mesh cylindrical/conical MARMAP style
- Codend: 150 µm, 11 cm (diameter) x 21 cm (length), PVC
- Weights ~50 lbs.
- Backups available for all components

Zooplankton collection methods follow those currently employed by Hopcroft’s lab, including the Chukchi Sea Environmental Studies Program (CSESP). Zooplankton will be collected by a pair of 150 µm mesh Bongo nets of 60 cm diameter hauled vertically (or obliquely at slow ship-speed in shallow water, approximately 0.5 m/sec wire speed) from within 3 m of the bottom; the volume of water filtered will be measured by one-way General Oceanics flowmeters in each net rigged not to record during descent.

Nets are deployed by one individual on deck working in conjunction with the A-frame and winch operator. Ascent speed is ~0.5 m/sec. Flowmeter readings are recorded immediately before and after the casts, nets are washed down to consolidate the catch prior to sample removal from the cod-end, then preserved in 5% buffered formalin and 95% ethanol.

Planktonic organisms for food web analysis will be sampled using a vertical haul 505 µm ring net to a maximum depth of 100 m. Dominant representatives covering a range of taxonomic groups and feeding guilds will be collected as representatives of the pelagic food web at each station, including copepods, chaetognaths, and amphipods. Planktonic organisms will be collected in replicates of three, but several individuals may have to be combined to achieve sufficient mass for an individual sample. Plankton samples will be kept frozen until further processing. Vouchers will be kept in 10% buffered formalin. Should time on board the vessel allow, we will dry all isotope samples at 60 ºC for 24 h in a drying oven. This reduces the danger of sample loss should freezer failure occur, and reduces freezer space needs on board.

G.3. Bongo Net

- Net #1 (collected for Hopcroft – preserve in formalin)
- Net #2 (collected for Norcross – preserve in ethanol)
  - Frame: twin aluminum 60 cm ring net frame (sturdy)
  - Net: 60 cm x 2.6 m 505 µm mesh MARMAP style nets
- Codend: 505 \( \mu \)m, 11 cm (diameter) \( \times \) 21 cm (length), PVC
- Bongo weight: \( \sim \)70 lbs.

One sample of zooplankton and one of ichthyoplankton will be collected at each station using a paired 60 cm bongo frame deployed with two nets of 505 \( \mu \)m mesh. The bongo will be towed in a double oblique haul as the vessel moves ahead at 2 kts. Each net will have a General Oceanic mechanical flowmeter (model 2030R Standard flowmeter) attached in the mouth to calculate volume of water filtered. As the vessel moves ahead at 2 kts, the bongo net is deployed from a single cable at a constant wire speed of \( \sim \)40–45 m per minute to a maximum depth of 5–10 m above the bottom, or a maximum depth of 200 m at deep stations. Once the desired depth is reached, the bongo will be retrieved at a wire speed of 20 m/min. The ship’s speed will be adjusted to maintain a wire angle of \( 45^\circ \pm 5^\circ \) (\( \sim \)1–2 kts) during the entire tow. Time, maximum depth (recorded by a TDR), wire out, and flow meter count will be recorded. Once on deck, catches will washed into the codend, and preserved in 5–10% buffered formalin or 95% ethanol. As time allows, replicate samples will be collected from sites at which large amounts of ichthyoplankton were collected. Discussions are underway to add an acoustic depth transponder to the Bongo nets to facilitate getting them closer to the bottom and more evenly fishing the water column.

**G.4. Multinet**

- Hydrobios MIDI Multinet, 3000 m depth rating, rigged for vertical operations with 4
  - point bridle
- 5 net system, 0.25 m\(^2\) mouth, electronic flowmeters, 150 \( \mu \)m mesh 2 m long standard nets
- Weighted Cod-end holder
- Unit weight \( \sim \)400 lbs., length \( \sim \)3.5 m plus bridle

The Multinet is intended for use at stations in excess of 100 m to provide information the layering of zooplankton and ichthyoplankton. A non-closing side net may be attached to the system to provide non-quantitative samples for various analyses.

Prior to deployment, the spring-loaded nets are cocked and the safely latch engaged. The net is powered up to ensure communications to the logging computer then powered down. The net is positioned under the A-frame and lifted (with stabilizing tag lines used where needed) – generally the load-bearing lines to the cod-end basket can be used to adequately stabilize the unit. In coordination with the A-frame and winch operator the net is deployed, the safety latch disengaged, the unit powered up, and the system lowered at \( \sim \)0.5–1 m/sec (dependent on weather) until the basket is as close to the bottom as practical. Depth is monitored by onboard depth sensors as well as observations by the ship’s echo-sounder. The first net is opened at the bottom and the unit is raised at 0.5 m/sec with nets triggered electronically at pre-determined depths. Ascent continues until the net is 1–2 m clear of the water, where upon logging is stopped and the unit powered down. Tag lines are employed as needed during retrieval. To facilitate access to the nets, the Multinet is rolled onto the “bottom” side while on deck, then dragged into position where it can be secured prior to wash down. Collections from the multinet will be preserved in 5–10% buffered formalin.

**G.5. Isaacs-Kidd Midwater Trawl (IKMT)**

- N=2 nets, N=1 frame, N=1 bridle, N=2 codends
• Mouth dimensions: 1.5 m wide x 1.8 m high
• Mesh: 3 mm stretch

Pelagic fishes will be collected using an Isaacs-Kidd Midwater Trawl (IKMT) with 3 mm mesh throughout body and codend. The IKMT mouth is 1.5 m wide by 1.8 m high, with an effective fishing area of 2.137 m² when fished at 45° angle. A rigid diving vane keeps the mouth of the net open during towing and exerts a depressing force to stabilize the net vertically. A Star-Oddi Centi DST time depth recorder (TDR) will be attached to the top of the IKMT frame and will provide a post-haul record of fishing depth. A “lazy line” fastened at the mouth of the codend facilitates hooking up to the snatch block to lift the lower net and catch onboard. The IKMT will be deployed from the stern and towed with the current at a speed of 4 kts over ground in a double oblique tow. During the haul, the towing cable will be continuously released or retrieved at the rate of approximately 30 m/min; rate will be modified to maintain the target 45° wire angle. The fishing goal is to examine the water column from the surface to 10 m above the seafloor, or to 200 m at deeper sites. One photograph will be taken of the entire IKMT catch, and a second photograph may be taken to indicate type & quantity of fishes. At sea processing of fishes is described in section H. Catch-per-unit-effort (CPUE) of IKMT hauls is calculated as (# fish x 1000) / (haul distance in m x 2.137 m² net opening) and reported as # fish per 1000 m³.

G.6. Benthic beam trawls (PSBT, PSBT-A, CBT)

• Plumb staff (PSBT) or modified plumb staff (PSBT-A) beam trawl:
  • PSBT or PSBT-A: N= 7 nets, N=7 bridles using Spectra,
  • Beams: N=10 each 10 ft. (3.05 m) length with reinforced center,
  • Tip weights: N=12; one at each end of footrope, 40 lbs. each,
  • Roller gears: N= 4
  • Extra bellies: N=2
• Canadian benthic trawl (CBT) - N=1 net, N=1 beam

G.6a. Plumb staff beam trawl (PSBT)

• Net: 4.7 m headrope, 4.6 m footrope, 7 mm mesh in body, 4 mm mesh as codend liner

• Modified from Gunderson & Ellis (1986) for work in Alaska by shortening the beam from 3.66 m to 3.05 m, seizing a lead-filled line to the footrope and 6-inch (15 cm) lengths of chain at 15 cm intervals along the footrope, lengthening the codend from 1 m to 4 m to avoid overfilling the codend, and building ‘weak links’ into the bridle and footrope. The weak links are of n=6 (#15 size) or 4 (#18 size) wraps of tarred twine between the two connection points; they allow a snagged net to collapse or tear away rather than ripping, thus maintaining the integrity of the net and avoiding time-consuming repairs.

G.6b. Modified plumb staff beam trawl (PSBT-A)

• Same mesh configuration as PSBT: 4.7 m headrope, 4.6 m footrope, 7 mm mesh in body, 4mm mesh as codend liner
  • Modified from Gunderson and Ellis (1986) by Abookire and Rose (2005). Modifications are designed to improve bottom trawling in uneven complex habitats
  • Additional chain below footrope with 10.2 cm steel rollers; different bridle to avoid obstructions; and include the addition of footrope rollers; an extra bridle for additional support when encountering obstacles.
  • Addition in 2013 of Spectra line in bridles and head and footropes
G.6.c. Canadian DFO Benthic trawl (CBT)

- Net: 4.2 m headrope, 4.2 m footrope, 10 mm mesh in body, 6 mm mesh as codend liner

Demersal fishes and invertebrates will be collected with a 10 ft. (3.05 m) plumb staff beam trawl (PSBT or PSBT-A). Guide lines will be added where needed to deploy or retrieve safely, e.g., attached at the tip weights, codend tie, and a ‘lazy line’ that provides a hauling point from the beam to just above the codend. A rigid 3 m pipe forward of the net holds the mouth open for an effective swath of 2.26 m, allowing for accurate quantifications of trawl effort by area swept or by duration of tow. The vertical opening of the net is approximately 1.2 m. A time-depth recorder (TDR) will be attached to the net headrope.

The PSBT and PSBT-A will be deployed from the stern. The towing cable will be deployed at 30 m/min with a ratio of 2.5–5 m of towing cable to 1 m of water depth. Haul distance is calculated between the positions of the vessel when scope is fully deployed and when the haul back begins. Haul duration will be approximately 3–5 minutes depending on the substrate. The PSBT will be towed with the current while the vessel is moving at 1–1.5 kt speed over ground. Upon retrieval of the net, the catch will be determined to be either qualitative or quantitative. A haul will be considered qualitative, not quantitative, if the net was damaged during the tow sufficiently to lead to loss of catch or to alter the net dimensions, overfull codend occurred, high proportion of pelagic rather than demersal animals collected, or problems occurred with launching and retrieving the net. If a haul is determined to be qualitative, a second PSBT/PSBT-A haul may be conducted for that station. The catch will be brought on board and a digital photograph will be taken with a label indicating the station name. Sediment type observed in the catch will be recorded (rocks, shell hash, mud etc.). Muddy catches will be dumped into 3 mm mesh sieves and sprayed with a hose to remove mud before sorting the catch. The approximate volume and sediment type of each tow will be recorded and the entire catch will be sorted to remove fishes. Generally 100% of the catch will be sorted for fishes. If the catch is large enough that fish or invertebrate subsampling is required, the haul will be mixed to provide an unbiased, representative subsample. CPUE of PSBT catch is calculated as (# fish x 1000) / (haul distance in m x 2.26 m net swath) and reported as # fish per 1000 m².

Comparison tows will be conducted at some stations with the Canadian benthic trawl (CBT) to compare catch composition with the Norcross/UAfs PSBT or PSBT-A. The CBT will be deployed from the stern. The towing cable will be deployed at 30 m/min with a ratio of 2.5–5 m of towing cable to 1 m of water depth. Haul distance is calculated between the positions of the vessel when scope is fully deployed and when the haul back begins. Haul duration will be approximately 3–5 minutes depending on the substrate. The CBT will be towed with the current while the vessel is moving at approximately 2 kt speed over ground. Upon retrieval of the net, the catch will be determined to be either qualitative or quantitative. A haul will be considered qualitative, not quantitative, if the net was damaged during the tow sufficiently to lead to loss of catch or to alter the net dimensions, overfull codend occurred, high proportion of pelagic rather than demersal animals collected, or problems occurred with launching and retrieving the net. If a haul is determined to be qualitative, a second CBT haul may be conducted for that station. The catch will be brought on board. A digital photograph of the catch will be taken with a label indicating the station name. Sediment type observed in the catch will be recorded (rocks, shell hash, mud etc.). Muddy catches will be dumped into 3 mm mesh sieves and sprayed with a hose to remove mud before sorting the catch. The approximate volume and sediment type of each tow will be recorded and the entire catch will be sorted to remove fishes. Generally 100% of the
catch will be sorted for fishes. If the catch is large enough that fish or invertebrate subsampling is required, the haul will be mixed to provide an unbiased, representative subsample.

G.7. Otter trawl

- 9.1 m Otter Trawl (OT)- N=6 lined + 1 unlined nets; n=4 pair doors; n=5 bridles
  - Bridles: 27.4 m bridles
  - Doors: 61 cm x 122 cm doors with steel shoes
  - Mesh: body- 38 mm stretch, codend liner- 19 mm stretch

The otter trawl will be deployed from the stern and towed at a speed of 2 kts on the bottom for approximately 10 minutes. As with the PSBT/PSBT-A, upon retrieval of the net, the catch will be determined to be either qualitative or quantitative. If the trawl is determined to be qualitative, a second tow may take place. The catch will be brought on board. A digital photograph of the catch will be taken together with a label indicating the station name. Sediment type observed in the catch will be recorded (rocks, shell hash, mud etc.) and approximate volume of the catch will be estimated. Generally, 100% of the catch will be sorted for fishes. If the catch is large enough that fish or invertebrate subsampling is required, the haul will be mixed to provide an unbiased, representative subsample.

H. Disposition of fishes captured in all trawls

Fishes will be euthanized according to approved UAF International Care and Use Committee protocol 134765-13 by placing the fish in a 130 mg/liter solution of tricaine methanesulfonate (MS-222) in freshwater until gill movement ceases. Euthanized fish will be placed on frozen ice packs or in ice water during processing. Fish identification keys and descriptive information (e.g., Matarese et al. 1989 and Mecklenburg et al. 2002) will be used for identification. Fishes will be sorted into species and weighed as a group. Approximate total length (to nearest 10 mm) will be measured. All fishes will be retained and brought to shore. The first 20 individuals from each 10 mm increment for each haul will be returned to the UAF Fisheries Oceanography Lab for precise measurement of length and weight; other fishes will be archived for potential additional analyses (e.g., otoliths, stomach contents, and stable isotope analysis). A photograph will be taken of fresh specimens of each fish species captured on this cruise.

All fishes will be retained and transported to the UAF Fisheries Oceanography Laboratory in Fairbanks, AK for further processing. After at-sea length and weight processing, fishes will be packaged by species into groups of 5–10 individuals in a Ziploc bag with a label containing station and haul information. Quantitative samples will be packed in 1-gallon Ziploc bags by species and will be kept separate from qualitative samples. Larval fishes will be preserved in 70% ethanol to conserve otoliths for daily growth increments or examining trace elements. Specimens needing further identification will be preserved in 10% buffered formalin (1 liter formaldehyde, 9 liters seawater, 20 g hexamethylenetetramine). Muscle tissue or fin clips may be collected from some species for genetic analysis.

I. Requests for fish samples

- John Nelson, University of Victoria- request to be processed in laboratory
  - [John.Nelson@dfo-mpo.gc.ca](mailto:John.Nelson@dfo-mpo.gc.ca), ship FedEx International: Dr. John Nelson, Department of Biology, University of Victoria, Petch Building 168, 3800 Finnerty Rd, Victoria BC V8P 5C2, Canada
- Retain Arctic cod *Boreogadus saida* and polar cod *Arctogadus glacialis* for population structure and genetic diversity. Arctic cod: 100 tissue samples from the same station, if possible. Polar cod: 100 tissue samples over cruise area.
- Sandra Talbot, USGS- request to be processed in the field
  - Retain 1 large and 1 small Arctic cod from 20m and 1000m benthic trawl at each transect for genetic analysis. Fish will be preserved in RNALater (to be provided to Edenfield prior to cruise) and frozen.
- Lara Horstmann-Dehn, UAF- request to be processed in laboratory
  - Retain N=5 fish from each species captured for stable isotope analysis
  - Retain any octopus captured in trawls for stable isotope analysis.

**J Disposition of invertebrates captured in all trawls**

Epibenthic invertebrates will be collected from the benthic fishing trawls. Quantitative measurements (abundance, biomass) will be done from the plumb staff beam trawl at each station. At stations where gear comparisons are done with Canadian gears, we will also analyze epibenthic community structure from the comparative trawl. After the benthic trawl has been brought on deck by the ship crew and opened, a digital photograph with a label with the station number for reference will be taken. The sediment type will be recorded (rocks, shell hash, mud, etc.). If the catch is too large to fully sort and subsampling is required, the haul will be mixed for an unbiased, representative subsample. This will be accomplished by transferring handfuls of trawl content to a series of buckets or tubs in a circular manner so that each tub receives portions from all sections of the trawl for best mixing. Subsample factor will be noted. We plan to sort at least one 20 L container at each station in most cases, depending on the size of the dominant organisms. The subsample of the catch will be rinsed using seawater in 2 mm sieves to remove mud. All epibenthic organisms will be sorted to lowest possible taxon identifiable in the field. Individuals will be counted and total wet mass per taxon determined using spring scales or digital hanging scales at the accuracy of ~1 g (for weights 1-100 g) and ~5 g accuracy for weights >100 g. Voucher specimens will be preserved in 10% buffered formalin, and occasionally, some specimens may be vouchered in molecular-grade ethanol for later genetic analysis.

Should snow crab occur in the trawls, all of them will be kept from each trawl (unless n>200). They will be counted and weighed individually using digital hanging scales or spring scales. We will record gender, shell condition, clutch fullness and color (for females only), carapace width, chela height (for males only) of all crabs in each haul, or subsample if snow crab densities are extremely high (which is unlikely in the region). We will keep samples of crabs for egg counts, sperm reserves (10-20 per site) and stomach content analysis (20-30 per site, size-structured). Depending on the objective, crabs will be frozen or preserved in formalin. Once the subsample has been counted and weighed, vouchers been taken, samples been taken for stable isotope studies (see below) and other purposes, the haul will be discarded overboard.

Representative benthic invertebrates for food web structure will be collected from the trawls (epifauna). Common invertebrate taxa covering a range of taxonomic groups and feeding guilds will be collected as representatives of the benthic food web at each station. Taxa will be collected in replicates of three. Epifauna taxa will be sampled after the counting and weighing for quantitative assessment is finished (see above). Small portions of muscle tissue, body wall, or whole animals (if too small for dissection) will be taken and stored frozen at -20 °C until further processing. Voucher samples for benthic organism isotope samples will be taken. In case of the
epifauna, most food web samples will correspond to vouchers taken for quantitative haul assessments.

K. Permits and Notification
All required permits will be obtained prior to sampling
- All fish collections have been approved by the Institutional Animal Care and Use Committee, Office of Research Integrity, UAF under IACUC Protocol 134765-13 (approved)
- NMFS: National Marine Fisheries Service Letter of Acknowledgement (to be obtained by OLF)
- USFWS: U.S. Fish and Wildlife Service Letter of Authorization for incidental harassment of polar bear and walrus (to be obtained by OLF)
- Outreach letters will be sent to North Slope villages informing them about this study (to be mailed in July 2013)
L. Literature Cited


Appendix A – Specifications for R/V Norseman II
P.O. Box 9322, Seattle, WA 98109 * Seattle ph: 206-403-3630 * www.norsemanmaritime.com
Radio Call Sign: WDD6688
USCG #: 601068
Open-port phone number: 1-480-768-2500 + 8816 7770 2483
Fleet 55 phone number: 011 8707 6485 0112
Iridium satellite phone: 1-480-768-2500 + 8816 3161 6459
Captain email: Bart Campbell, captain.n2@amosconnect.com
Shore Point of Contact (daily contact at 4:00pm): Sheyna Wisdom, sheyna.wisdom@fairweather.com, 907-748-5864 (cell); 907-267-4611 (office)

DIMENSIONS AND REGULATORY INFORMATION
Gross tons 194
Speed 10 kts
Propulsion 850 hp Cat Diesel
Fuel consumption 450 gal per day at 8 kts
Sewage treatment: Type II MSD Coast Guard approved

MACHINERY
Electric Generators: 1- NL 55 kW * 1- Cat 90 kW * 1- Cat 165 kW
Electrical Power: 110 Volt AC * 208 Volt AC 3 Phase * 480 Volt AC 3 Phase

CAPACITY
Fuel Capacity 44,000 gal.
Fresh Water Holding: 13,500 gal. * Fresh Water Making 1,200 gal per day
Walk in Cooler: 300 cu ft.
Open Deck Area: 1,600 sq ft.

ACCOMMODATIONS
Berths: 5 researcher cabins capable of sleeping 12 (can be configured to accommodate 18 to 20 depending on needs), plus separate quarters for 8 crew
Bathrooms: 7 units each with a toilet, shower, and vanity
Dining: Separate guest and crew messes

SPECIAL FEATURES
Hydraulic Boom Crane: 24,000 Lbs. SWL @ 20’ 10,500 lbs.; SWL @40’ 5,000 lbs.
Stern Mounted Frame: SWL 7,000 lbs.
Hydraulic Deck Winch: 2,000 lbs., line pull; 3,000 ft., ½ wire
Anchor Winch: 115 Fathoms ground gear
Bow Thruster 34” Bow Thruster
Skiff Launching Ability: Up to 27’ rigid

TB-2013-US Cruise Plan, April 2013 draft
Removable Side Rails: Yes, allows for easy step through access to launched tenders

**ELECTRONICS AND COMMUNICATIONS**

Radar: Furuno 48 and 72 mile; Navigation Plotter; AIS: Simrad; Depth Sounders: Simrad Paper Machine and Furuno Dual Band; **Communications:** Two single Sind Band Radios, Two VHF Radios, Fleet 55 Satellite Phone, Iridium Satellite Phone, C – Satellite Phone, Portable handheld VHF Radios.
ATTACHMENT B
R/V Norsemann II Description
# NORSEMAN II
115 ft. Research Vessel

## Dimensions and Regulatory Information
- **Length:** 115 ft.
- **Beam:** 28 ft.
- **Draft:** 13 ft.
- **Gross Tons:** 194
- **Deck Levels:** 3
- **Documentation:** United States
- **Sewage Treatment System:** Type II MSD Coast Guard Approved

## Performance & Propulsion
- **Speed:** 10 Knots
- **Endurance:** 90+ Days
- **Range:** 10,000 Miles
- **Propulsion:** 850 hp Cat Diesel
- **Fuel Consumption (@ 8 knots):** 450 gal. per Day

## Machinery
- **Electric Generators:**
  - 1- NL 55 kW
  - 1- Cat 90 kW
  - 1- Cat 165 kW
- **Electrical Power:**
  - 110 Volt AC
  - 208 Volt AC 3 Phase
  - 480 Volt AC 3 Phase

## Capacity
- **Fuel Capacity:** 44,000 gal.
- **Fresh Water Holding:** 13,500 gal.
- **Fresh Water Making:** 1,200 gal., per day
- **Walk in Cooler:** 300 cu ft.
- **Open Deck Area:** 1,600 sq ft.

## Accommodations
- **Berths:** 5 researcher cabins capable of sleeping 12 (can be configured to accommodate 18 to 20 depending on needs), plus separate quarters for 8 crew
- **Bathrooms:** 7 units each with a toilet, shower, and vanity
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## Special Features
- **Hydraulic Boom Crane:** 24,000 Lbs. SWL @ 20’ 10,500 lbs; SWL @40’ 5,000 lbs
- **Stern Mounted A-Frame:** SWL 7,000 lbs
- **Hydraulic Deck Winch:** 2,000 lbs., line pull; 1,000 ft., ½ wire
- **Anchor Winch:** 115 Fathoms ground gear
- **Bow Thruster:** 34” Bow Thruster
- **Skiff Launching Ability:** Up to 27’ rigid
- **Removable Side Rails:** Yes, allows for easy step through access to launched tenders

## Electronics and Communications
- **Radar:** Furuno 48 and 72 mile; Navigation Plotter; AIS: Simrad; Depth Sounders: Simrad Paper Machine and Furuno Dual Band; **Communications:** Two single Sind Band Radios, Two VHF Radios, Fleet 55 Satellite Phone, Iridium Satellite Phone, C – Satellite Phone, Portable handheld VHF Radios.

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