

Activity Number	Action	Status as of September 30, 2009	2010	2011	Outcome	How progress will be measured and/or monitored	Milestones and anticipated completion dates if applicable
Monitoring							
1	Collect fishery dependent data for special data collections outside standard observer protocols to meet user needs.	Observers instructed to sample for seabird bycatch projects as requested by Alaska Fisheries Science Center (AFSC) staff.	Bycatch projects include collecting biological information on octopus and assessing tanner crab bycatch reproductive condition, and ongoing work assessing bycatch quantities. Collection of genetic samples for salmon became standard operating procedure in 2010.	Projects solicited on annual basis - determination of projects for 2011 will be provided by Jan 1 of that year.	Generation and provision of data related to bycatch of birds, fish, and mammals as requested by AFSC staff.	Agreed upon special data collections will be implemented January 1st of each fishing year.	1) Solicitation of proposals mid-year. 2) Annual implementation of approved proposals on January 1.
2	Evaluate technologies suitable for monitoring groundfish fisheries.	1) Completed field research under NPRB grant with the International Pacific Halibut Commission (IPHC) in the Gulf of Alaska (GOA) and Bering Sea and Aleutian Islands (BSAI). Research was a field test of electronic monitoring (EM) (video) in an active halibut fishery. 2) Completed cooperative research with industry to assess applicability of video in monitoring quality of halibut bycatch in trawl rockfish fishery in GOA. 3) Presented report on EM Workshop at the International Fisheries Observer and Monitoring Conference, July 2009	1) Planned completion of final report on field work in cooperation with IPHC to assess the applicability of video monitoring; 2) Present video monitoring work in Galway, Ireland; 3) Complete work with NMFS Alaska Regional Office (AKR) and fishing industry to complete Phase-2 report; 4) Publish manuscript that describes the methodologies used by NMFS to estimate total catch, including bycatch, in the Federal groundfish fisheries off Alaska.	1) Publication of study results; 2) Continued collaboration as necessary; 3) Provide recommendations for practical system design changes to improve estimation methods and incorporate statistical uncertainty into estimates of catch and bycatch; 4) Continued investigation as required.	Evaluation of effectiveness of EM relative to standard observer coverage in monitoring bycatch.	1) Periodic coordination with IPHC to complete research. 2) Coordination with AKR and industry. 3) General supervision. 4) Written report summarizing findings	1) Final report to be submitted by July 2010. 2) Phase-1 Report presented to the North Pacific Fishery Management Council (NPFMC) in fall of 2008. 3) EM Workshop was held at the AFSC in July 2008, proceedings are available online at http://www.fakr.noaa.gov/npfmc/misc_pub/EMproceedings.pdf . 4) NOAA technical Memorandum published in February 2010.
5	Review, evaluate, and recommend improvements to the methodology used for estimating bycatch in collaboration with AKR.	The review process for current estimation methods is currently underway. This includes review and analysis of AKR catch and bycatch estimation and an evaluation of available data systems.	1) Publish catch and bycatch estimation procedures. 2) Evaluate available data and current data systems to meet the in-season needs of the AKR and fishery assessment needs of the AFSC.	3) Provide recommendations for practical system design that incorporates statistical uncertainty into estimates of catch and bycatch.	Improved methodology for bycatch estimation.	1 and 2) Written report summarizing findings. 3) Report detailing new methods inclusive of catch and variance estimates.	Report on tasks 1 and 2 published February 2010; report on task 3 is to be completed by December 2011.

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6	Compliance monitoring of regulatory standards necessary to support effective observer sampling.	Completed 66 observer sampling station inspections, 11 bin monitoring inspections, and 10 pre-inspections (for either sample stations or bin monitoring).	Ongoing - these activities are to be completed every year, although numbers completed may vary.	Ongoing - these activities are to be completed every year, although numbers completed may vary.	Ensure accurate data collection according to protocols for bycatch estimation.	The annual number of vessel inspections meeting regulatory standards.	Annually
7	Compliance monitoring of regulatory standards necessary to support accurate catch monitoring and weight	Annually certify at-sea scales based on regulatory standards for accuracy; approve groundfish and crab processor catch monitoring plans.	Ongoing	Ongoing	Accurate total catch weights of groundfish and other species taken in the Alaska groundfish fisheries.	The annual number and percentage of scales and processors meeting regulatory standards for accurate scales and adherence to catch monitoring plans.	Annually
8	Promote the use of electronic logbooks to facilitate identification and correction of bias in estimating bycatch for unobserved vessels. Also, promote interagency efforts to develop electronic reporting of landings data by trip.	Proposed rule published June 29, 2007 (72 FR 35748).	1) Final rule published December 15, 2008 (73 FR 76136); Effective January 14, 2009. 2) Published Final Rule for Amendment 91, which includes a regulatory requirement for electronic logbook for catcher/processors fishing for pollock in the Bering Sea. The electronic logbook includes data to be submitted on the number of salmon, by species, caught as bycatch in each haul of the pollock fishery.	Refinement of regulatory provisions as needed	More complete, accurate, and timely data will be available to identify and correct for bias in estimating bycatch for unobserved vessels.	Ongoing support for catcher vessel electronic logbook. Completion and implementation of groundfish electronic reporting system. Publication of rulemaking implementing electronic logbooks and reporting of catch data.	1) Interagency electronic reporting program implemented January 2009 (73 FR 76136, December 15, 2008). 2) Final rule to implement Amendment 91 published in August 2010.
9	Evaluate methods for improving bycatch estimates of marine mammals in state managed Marine Mammal Protection Act (MMPA) Category II salmon fisheries.	Observed Yakutat set-gillnet salmon fishery summer 2008. Data analysis ongoing.	Complete analysis of data collected during 2008 field season. No further field activity planned due to lack of funding	Dependant on funding.	Increasing accuracy and precision to determine whether potential biological removal (PBR) levels are exceeded, categorizing fisheries in annual List of Fisheries, and determining whether a fishery has approached a zero mortality rate.	Will continue observation of Category II salmon fisheries if funding becomes available.	

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10	Implement non-discretionary measures identified in Biological Opinion issued by U.S. Fish and Wildlife Service (USFWS) on impacts of Pacific halibut longline fishery on Endangered Species Act (ESA)-listed seabird species. Increase information on incidental groundfish catch in halibut fishery.	Project initiated among IPHC, AFSC, and AKR to conduct a feasibility study of halibut fishery monitoring options and a pilot study evaluating electronic monitoring technologies.	Anticipate awarding contract for observing the state-managed Southeast Alaska salmon drift gillnet fishery.	Ongoing	Adequate monitoring of Pacific halibut longline fishery for incidental take of ESA-listed and other seabird species, and incidental catch of groundfish species.	Development of monitoring plan for the halibut fishery, including identification of resources; coordination with NPFMC initiative and AFSC Observer Program. Monitor activities of NPFMC, AKR, AFSC that relate to this item.	Monitoring plan for the halibut fishery; contract award for observing salmon gillnet fishery by the end of FY10 with industry outreach beginning early FY11
11	Investigate the impact of a real-time bycatch monitoring system on bycatch levels and fishing location choice in the Bering Sea.	Preliminary results are in a working paper.	Report findings	N/A - work will be completed in 2010.	Better understanding of cooperative spatial bycatch management systems.	Production of article for peer-reviewed journal.	
12	Participation by AKR and AFSC in preparation of information and text for the first edition of the National Bycatch Report (NBR).	Staff involved in national NBR initiative.	First NBR completed.	Initiation of work on second edition of NBR. Focus on improved monitoring and estimation of bycatch.	Ongoing effort to improve data quality and estimation methodologies.	NBR will establish priorities for regional and national improvements in bycatch data quality and estimates.	
13	Report on large whale entanglements in Alaska.	Not initiated.	Begin draft report in late FY10.	Complete report in FY11.	Develop technical memorandum that applies new serious injury guidelines to cases of entangled whales to assess whether serious injury has occurred.	Report will be completed.	Delayed until Serious Injury Guidelines are completed. These are expected in late FY10, which will allow drafting the report in late FY10 and completion of the final report in FY11.
14	Evaluate whether measures of effort other than total catch can be used to extrapolate from observed to total marine mammal bycatch.	Not initiated.	Initiate in late FY09.	Ongoing.	Administrative report.	Report will be completed.	Delayed due to change in staffing; report to be developed in FY10.
15	Improved seabird bycatch reporting.	Tech Memo figures and tables reporting seabird bycatch 1993-2006 completed. A workshop was held to evaluate bycatch reporting goals, methods, and resources for further reporting, and recommendations were made.	The Tech Memo for seabird bycatch 1993-2006 will be completed. The new system for bycatch reporting through the AKR's Catch Accounting System is to be implemented. A report of the workshop will be produced. Planning for 2011 work will be completed.	Based on Tech Memo and analysis, produce peer-reviewed papers describing seabird bycatch in Alaska groundfish fisheries for 1993-2006 results. Begin producing standardized annual reports. If funding is available, establish post-doc position to address 2009 workshop recommendations.	Improved accuracy and precision in estimates of seabird interactions and bycatch. Availability of seabird bycatch summaries for the 1993-2006 period to a wide suite of end-users. Establish a dependable process for the production of annual estimates for a broad suite of end-users.	(1) Analysis techniques reviewed and approved by peers, (2) bycatch numbers produced, (3) tables and figures drafted, (4) Tech Memo produced, (5) ultimately peer-reviewed articles submitted, (6) Catch Accounting System supports annual seabird bycatch estimates.	Milestone 1 and 2 completed and Tech Memo is in prep. Deadlines are (a) tech memo on techniques and broad summary of bycatch by 9/1/2010, (b) Catch Accounting System supports annual seabird bycatch estimates by 9/30/2010, (c) Peer-reviewed papers on bycatch by 9/1/2011.

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16	Seabird interactions with longline gear.	Draft of report created and used for outreach activities with the longline association. This promoted an internal change to how they self-monitor for seabird bycatch.	Processed report available to the public, and results reported on at conferences. Planning to occur with industry regarding next steps, and then funding to be applied for. Focus is to reduce bycatch rates of poor-performing vessels.	If funding is available, implement an outreach and gear program to assist vessels in reducing their seabird bycatch through better performance of mitigation gear or changes to vessel operations.	Documentation of vessel seabird bycatch rates published in processed report (with appropriate privacy and confidentiality protections). Implementation of gear and outreach program would ultimately lead to reduced bycatch levels.	List of vessel-by-vessel seabird bycatch rates available to NMFS managers. Processed report produced and available to interested parties. Outreach to industry groups initiated. Long-term plan created and funding applied for.	(1) Processed Report draft completed and in review process as of January 2010. (2) Outreach to industry during June-Sept 2009. (3) Process report finalized and made available to public by June 2010. (4) Long-term plan created and funds applied for by Nov. 2010.
17	Trawl vessel interactions with seabirds.	Observer special project on trawl mortality outside of sampling regime put in place. Contractor in place to analyze interaction and mortality data. A great deal of work was completed to implement database changes that will incorporate observer's ability to record additional seabird mortalities outside of their normal sampling. Analysis and writing of paper from 2005 work is underway.	A peer-reviewed paper of the 2005 seabird mitigation work to be submitted to a journal. Analysis of additional trawl mortality information to be completed. Begin work on a draft processed report, or higher level paper, to describe results. Begin collecting data of seabird mortalities on trawls using the new design features of the Observer Program at-sea reporting system and database.	Paper on seabird mortality recorded by observers available to the public. Observer records of additional mortalities to become standardized duties. Begin work on how to incorporate these two data sources on each ship into a single estimate of seabird mortality.	Characterize, minimize, mitigate trawl vessel interactions with seabirds, particularly the short-tailed albatross; this work will address non-discretionary measures required of NMFS in a USFWS Biological Opinion (Sept. 2003).	Produce trawl mitigation report and white paper describing issues and potential actions. Changes to Observer Program data management system in place. Paper describing results of observer special project to record trawl mortality provided.	(1) Contractor in place to work on analysis of special project data, (2) Analysis of that data completed in 2010, (3) Changes to observer program data systems made and observers trained on new system -- data flowing in from the field, (4) Report on 2005 mitigation study published in peer reviewed journal in 2010.
18	Evaluate the need for additional compliance resources to maintain the integrity of the observer data.	NMFS Alaska Enforcement Division (AED) is evaluating certain technologies to assist in observer related enforcement activities and continues to work closely with the observer program to address bycatch related compliance issues.	Ongoing	Ongoing	Decreased occurrences of interference with observer sampling or reporting by crew and stricter adherence to performance requirements by observers.	AED will continue to work with observer program staff to provide support for observer interference activities on a case by case basis. AED will continue to work with sustainable fisheries and observer program staff on alternative monitoring technologies.	AED will participate in technical working groups as needed.
19	Review compliance issues associated with current bycatch reduction programs.	AED continues to play an active role in recommending monitoring and enforcement activities for NPFMC actions. Enforcement actions for bycatch related violations are handled on a case by case basis.	Ongoing	Ongoing	Bycatch reduction programs that greatly reduce or eliminate incentives for interfering with monitoring.	AED will continue to work with NMFS and NPFMC staff to provide support for bycatch reduction actions.	AED will participate as needed.

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20	Develop protocols for the collection of representative genetic samples from the Bering Sea salmon bycatch.	New Project.	Recommended protocols for representative sampling to the NPFMC at its June 2010 meeting. This was in response to publication of Pella-Geiger report entitled "Sampling Considerations for Estimating Geographic Origins of Chinook Salmon Bycatch in the Bering Sea Pollock Fishery" (AK Department of Fish and Game Special Publication No. SP 09-08).	Implementation of new collection protocols to begin in January 2011.	Protocols for collecting representative genetic samples from bycaught salmon will be developed and implemented.	Recommended protocols to the NPFMC June 2010. Implementation starting January 2011.	Recommended protocols to the NPFMC June 2010. Implementation starting January 2011.
21	Revise data entry and storage protocols for seabirds to capture information in the database that was previously recorded only on paper forms and thus unaccessible to end users.	Work was underway to incorporate data collections into the observer data entry application and supporting databases.	Manuals were revised, observers instructed, and a new application deployed. Adjustments to instructions will be made based on debriefing feedback.	None planned.	Improved information organized and available to end users in the observer program database.	Data collections are incorporated into the database and data entry applications in the field.	New application was deployed in 2010, and databases were updated.
22	Develop an economic data collection program to monitor the value of salmon bycatch in the new tradable salmon bycatch markets and estimate the costs to pollock fishers of relocating to avoid salmon bycatch.	Analyses of various data collection alternatives have been conducted for the NPFMC, and a preferred alternative has been selected. Draft surveys are being completed.	Finalize data collection program, including survey instruments, regulations, and Office of Management and Budget (OMB) requirements.	Implement new tradable bycatch system and begin collecting data.	Better understanding of the value of salmon bycatch in the pollock fishery and the way in which incentive based programs may reduce salmon bycatch rates in the pollock fishery.	By the implementation of a data collection system by 2011 and by meeting the regulatory/analysis requirements along the way.	Program implementation in 2011.
23	Assessing voluntary and involuntary methods of red king crab bycatch reduction in the Bering Sea flatfish fishery.	Conducted analysis of the interaction of the Red King Crab Savings Area and Sea State information sharing in the Bering Sea flatfish fishery.	Submit paper with Joshua Abbott for internal review and to a peer-reviewed journal.	N/A	Better understanding of information sharing and the impacts of closures on bycatch outcomes and vessel behavior.	Production of article for peer-reviewed journal.	Assessing voluntary and involuntary methods of red king crab bycatch reduction in the Bering Sea flatfish fishery.
24	Assess the impact of Amendment 80 on bycatch avoidance behavior in the Bering Sea flatfish fishery.	Analysis underway.	Conduct analysis.	Submit paper to peer-reviewed journal.	Better understanding of the impacts of protected species catch (PSC) quota and fishery rationalization on fleet bycatch behavior.	Production of article for peer-reviewed journal.	N/A

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Bycatch Reduction Engineering and Other Research							
1	Cooperative research to develop trawl methods to reduce salmon bycatch during pollock trawling.	Tests of improved devices. Initial results presented to fleet and NPFMC.	Chinook salmon escape rates of 25-35% with minimal pollock loss demonstrated on different vessel classes. Workshops to communicate design and use. Manuscripts prepared.	Modify devices to improve escape of chum salmon. Publication of results.	Reduced incidental catch of salmon in directed pollock fisheries.	Documentation of reduced bycatch rates with excluders, excluder use in fisheries.	(a) Presentations to industry (May 2010) (b) 14-20 days field evaluations and observations on two vessel classes. (Feb. and Mar. 2010) (c) Model tests in flume tank (Oct. 2009).
2	Develop halibut excluders for groundfish fisheries.	Excluders frequently used in Bering Sea flatfish fleet and cod trawlers in GOA and Bering Sea. Provided information and observation gear to spur further improvements.	No new work in FY2010.	Tests of alternative configurations to improve selectivity.	Reduced incidental halibut catch in directed groundfish fisheries.	Documentation of reduced bycatch rates with excluders, excluder use in fisheries.	Design and pilot testing of devices to monitor escaping animals.
3	Investigate methods for reducing crab bycatch in trawl and pot fisheries	Demonstrated reduced unobserved mortality with modified sweeps. NPFMC recommended requirement for Bering Sea flatfish fishing.	Field testing of alternative footropes to reduce crab bycatch and mortality. Manuscript on sweep modifications to reduce crab mortality.	Conduct field tests of bycatch reduction devices (depends on funding).	Reduced crab bycatch and unobserved mortality in directed groundfish fisheries.	Documentation of reduced bycatch rates with excluders, excluder use in fisheries.	Sweep modifications to reduce crab mortality manuscript. Field tests of footrope modification to reduce unobserved mortalities.
4	Measure injury/mortality rates of crabs encountering trawls.	Completed fieldwork and most of analysis, including snow, Tanner and red king crabs. Reports to industry and NPFMC.	Final reports on estimates of unobserved mortalities. Begin project to estimate mortality rates of captured and discarded crabs and unobserved mortality from pollock trawl interactions.	Continue experiments on crab discard mortality. Initial manuscripts on discard mortality.	Reduced mortality of Alaskan crabs from trawl gear. Reduced discard mortality.	Peer-reviewed papers by collaborators on mortality predictors and mortality estimates for trawl gear.	Field work for primary project completed in August 2009. First manuscript on use of reflex actions in Tanner crab and snow crab to predict mortality from trawl injuries published in 2008. Manuscripts prepared on mortality estimates in April 2010.
5	Modify bottom trawls to reduce effects on seafloor habitats.	Field studies completed and reported to NPFMC, which recommended regulations for Bering Sea flatfish fisheries. Publication on catch effects.	Manuscript on sweep modification reduction of habitat effects. Initial field work on effects of pollock trawls on habitat. Assist implementation of sweep regulations.	Field research on modification of trawl footropes to reduce seafloor effects (flatfish, pollock, and/or cod trawls).	Reduced effects to structure-forming sessile animals.	1) Rulemaking to implement modified trawl gear specifications; 2) Documentation of reduced effects to structure-forming sessile animals with minimal reduction in target catch rates.	2009 - NPFMC recommended requirement of modified sweeps; 2010/2011 - Field work on footropes; proposed and final rules to implement modified trawl gear specifications.

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6	Stock assessment research for non-target groundfish species.	Stock assessments were prepared for skates, squid, sculpin, and octopus. In 2009, groundfish survey special projects collected octopus species identification information, squid lengths, skate vertebrae, biological information on 5 species of sculpin in the BSAI, and conducted skate tagging.	Assessments will be updated, conditional on funding and priorities. Groundfish survey special projects will collect octopus species identification, squid lengths, and conduct skate tagging.	Assessments will be updated, conditional on funding and priorities. Groundfish survey special projects to collect octopus species identification, collect squid lengths, and conduct skate tagging will be continued.	Improved quality of catch, life history, abundance, and assessment information on species where stock status is poorly defined or unknown.	Stock assessments will provide information on the bycatch of species, their size, and sex.	December 2010 Stock Assessment and Fishery Evaluation (SAFE) chapters will be completed.
7	Stock assessment research to reduce prohibited species bycatch.	James Ianelli contributed modeling used for the Final Environmental Impact Statement (EIS); research on applying temperature information to reduce bycatch continues (funded by North Pacific Research Board project #73).	Analytical support on salmon bycatch mitigation measures will continue. In particular, chum salmon research and development of new management measures are underway (presented in February and June 2010 Council meetings).	Analytical support on salmon bycatch mitigation measures will continue. In particular, chum salmon research and development of new management measures will continue.	Evaluation of the extent to which alternative bycatch management strategies affect bycatch rates and fishing strategies. Development and design alternative management measures.	By assisting in responses to comments on the EIS, assisting the NPFMC in developing alternative management measures, and evaluating past data.	Final rule for Chinook salmon bycatch regulations, development of new chum salmon measures.
8	Economic and social science data collection and research.	Paper submitted to journal.	Paper published.	N/A - work will be completed in 2010.	Improved ability to determine the social and economic impacts of bycatch and bycatch management measures and to model fishing behavior.	By our ability to measure decreases in bycatch and fishery closures associated with pollock fishing.	
9	Estimate the population/stock compositions for Chinook and chum salmon caught as bycatch in the BSAI groundfish/pollock fishery.	1. AFSC's Auke Bay Laboratories (ABL) obtained and evaluated the use of Chinook genetic baselines (microsatellite and SNP). 2. ABL collaborated with the University of Alaska School of Fisheries and Ocean Sciences to develop a comprehensive chum salmon genetic baseline (microsatellite and SNP) for performing stock composition estimates. (3) AFSC designed an improved observer sampling plan for obtaining genetic samples.	Continue genetic characterization of bycaught Chinook and chum salmon. ABL has already completed 863 Chinook samples from the 2008 Bering Sea pollock trawl bycatch and 1,084 chum salmon samples from 2005 and provided stock composition estimates in reports submitted to the NPFMC. Genetic analysis of samples from the 2007 and 2009 Chinook bycatch and the 2006-2009 chum bycatch are underway.	Work with modelers to understand how bycatch can affect local subsistence, commercial, and sport fisheries. Progress is dependant on funding levels. In the interim, genetic tools will be obtained for completing the studies, and sample collection protocols will be reviewed to obtain unbiased stock estimates in the future.	Identify stock proportions for both Chinook and chum bycatch for large geographical regions including western Alaska. Develop and implement effective management measures to reduce bycatch. Results will enable fisheries managers to make better decisions regarding management actions and policies.	Provide stock composition reports to the NPFMC on time and collaborate with other management groups to address potential effects on subsistence needs.	This will be an ongoing project that will be completed annually, and stock composition estimates will be made available to the public within 6-9 months (before the start of the next season).

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10	Seabird use of fishery discards and offal.	Work delayed on this project due to higher priority work. Completion of papers will be a priority for 2010.	Writing of results from post doc work will be completed. Three papers are expected, including a description of seabird interactions with the pollock fishery, stable isotope signals of feeding on offal by albatross, and effects of fishery signals on breeding. Results will assist in predicting effects of climate change for albatross. Assess results of work and determine whether changes to offal and discard management are needed.	N/A - work will be completed in 2010.	(1) Define linkage between seabird bycatch and offal/discard production. (2) Provide basis for continuing this work as a post doc with the Univ. of Washington, in collaboration with the AFSC, with funding provided by the North Pacific Research Board.	Completion of peer-reviewed papers.	Project was extended due to taking on extra work on using stable isotopes and colony work. Current projected end date for 3 peer-reviewed papers is 12/2010. Preliminary results were presented at the 12/2007 CLIOTOP conference and the 8/2008 International Albatross and Petrel Conference. A processed report describing discard use by seabirds was produced in 2008, and that project was re-implemented for 2009.
11	A project to study the behavioral response of rock sole to disturbance by bottom trawl gear in order to determine how natural behaviors may be utilized to assist in bycatch reduction efforts in the rock sole fishery.	Field work, laboratory experiments, and analysis complete.	This project was completed on Dec. 15, 2009. A paper describing this work has been accepted for publication in Fishery Bulletin (2010) 108:145-154.	None	This work demonstrates that herding of flatfish by trawl sweep is predominantly mediated by fish vision and shows that elevated sweeps, which reduce damage to the seafloor, continue to herd flatfish under high ambient light conditions. This work has implications for standardization of trawl survey efforts as well as for understanding mechanisms giving rise to observed diel catch patterns in both commercial and survey trawl catches.	Submission of manuscript to peer-reviewed journal.	Complete.
12	Improve spatio-temporal characterization of seabird bycatch estimates.	Tables and figures of time and area bycatch features have been completed for the 1993-2006 data set. This will be reported via a Tech Memo and via the web. A variety of information has been sent to the USFWS as the result of specific requests. The analysis of longline data for 2004-2007 will also address this.	Reports will be made available, and a newer system using the Catch Accounting System will be explored with regard to providing better spatio-temporal characterization of bycatch on an annual basis. The processed report on vessel-specific bycatch will also address this issue.	Incorporate changes into standardized reporting.	Improved characterization of when and where seabirds, especially albatross, are being incidentally taken, which can assist in efforts to reduce this incidental take.	Peer-reviewed papers by collaborators relevant to risk assessment and threshold analysis.	Short-tailed albatross threshold analysis and fishery overlap papers were published. Other spatio-temporal characterizations will occur in results of reporting seabird bycatch for 1993-2006.

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13	Reduction of bycatch mortality for non-target crab species in the commercial snow crab fishery.	New Project with funds from North Pacific Research Board (NPRB).	Project design with commercial fishing industry. Initial data collection during 2010 snow crab commercial fishery.	Analysis of physiological response data, estimation of mortality, and development of plan for additional assessment of environmental conditions on bycatch mortality.	Annual report to NPRB and presentation to industry on bycatch handling mortality.	Peer-reviewed publication and application of handling mortality to stock assessment process.	Fall 2010: Data analysis and proposal submission for next phase of data collection.
Management (Including International Efforts)							
1	Accounting interval change for certain Maximum Retainable Amounts (MRA).	Development of proposed rule for legal review.	Withdrawal of proposed rule based on public comment.	No further action.	N/A	N/A	N/A
2	Minimum Groundfish Retention Standard (GRS).	Completed; Effective January 20, 2008 (71 FR 17362, April 6, 2006).	Assess implementation, compliance monitoring, enforcement, and prosecution challenges; take action as necessary to refine the GRS program; Secretarial action to approve or disapprove proposed expansion of GRS accountability to multiple fishing cooperatives (Amendment 93).	Ongoing.	Standards for retention of groundfish in the non-American Fisheries Act (AFA) trawl catcher processor sector that reduce groundfish discards, while continuing to allow a multi-species trawl fishery to be viable. The GRS program may be refined over time as necessary to address compliance and enforcement issues.	Monitor rates of discard by the non-AFA trawl catcher processor fleet relative to standards established under the GRS program and monitor effectiveness of NOAA Office of Law Enforcement and General Counsel for Enforcement Law ability to enforce and prosecute non-compliance.	Annual reports to the NPFMC on compliance with the GRS program; regulatory actions to refine the GRS program as necessary.
3	Harvesting Cooperatives for the BSAI head and gut catcher processors, and quota allocations to all sectors: Amendment 80.	Completed: Effective January 20, 2008 (72 FR 52668).	Refinement of regulatory provisions as needed.	Refinement of regulatory provisions as needed.	Facilitate rationalization of some sectors in the BSAI. Rationalization would eliminate the race for fish and allow cooperative behavior to decrease discards.	Ongoing monitoring and enforcement of Amendment 80 program.	Annual monitoring and assessment.
4	Extend North Pacific Groundfish Observer Program beyond December 31, 2007.	Completed: Final rule published July 6, 2007 (72 FR 44795).	Refinement of regulatory provisions as needed.	Refinement of regulatory provisions as needed.	Continued collection of catch and bycatch data, and management monitoring programs.	Ongoing assessment of observer program sampling protocols and use of data for catch accounting.	Annual monitoring and assessment.
5	Non-target species management.	Proposed Amendments 96/87 to the groundfish fishery management plans would remove species groups (sharks, sculpins, octopus in the BSAI and sharks, sculpins, octopus, and squid in the Gulf of Alaska) from the other species complex and manage these groups separately in the target species category.	NPFMC adoption of FMP amendments April 2010; development of FMP amendment packages for Secretarial review.	Continued assessment of non-target species management and options by the NPFMC.	Optimization of sustainable yield of non-target species, where possible, while also protecting them from potential overfishing.	Publish notice of availability of FMP amendments.	If approved, implement new species categories for the 2011 groundfish fisheries.

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6	GOA groundfish fishery rationalization.	The NPFMC has tabled this project to focus instead on fishery-specific management measures that could achieve some of benefits of rationalization, but at a more focused scale.	No further action.	No further action.	Address conservation goals by providing opportunities to utilize fishing methods that reduce bycatch and gear conflicts.	No further action.	Council action dates are unknown.
7	Non-pelagic trawl gear modification.	NPFMC adopted modified trawl gear specifications in Oct. 2009.	Develop proposed rule to implement non-pelagic trawl gear modifications that would minimize impact on bottom habitat and associated living marine resources.	Pending approval, publish final rule.	Minimizing the impact of non-pelagic trawl gear fisheries on Bering Sea bottom habitat.	Publish proposed and final rule.	Implementation of new non-pelagic trawl gear standards in 2011.
8	Bering Sea bottom habitat protection from non-pelagic trawl gear.	Completed: final rule published July 25, 2008 (73 FR 43362).	Refinement of regulatory provisions as needed.	Refinement of regulatory provisions as needed.	Minimizing the impact of non-pelagic trawl gear fisheries on Bering Sea bottom habitat.	Monitor fishing activity for compliance with regulatory provisions.	Publish proposed and final rules as needed.
9	BSAI Salmon bycatch (Amendment 84a).	Completed, final rule published Oct 29, 2007 (72 FR 31070).	No further action.	No further action.	Am 84a: reduce salmon bycatch rates by exempting participants in a voluntary rolling hotspot system from established salmon savings area trawl closures.	Monitor salmon bycatch rates and associated salmon bycatch numbers.	Publish proposed and final rules as needed.
10	Bering Sea Chinook Salmon Bycatch (Amendment 91).	Council adopted new management measures to minimize Chinook salmon bycatch in the Bering Sea pollock fishery.	Proposed rule published March 23, 2010 (75 FR 14016); final rule should be published by August 2010.	Management of the Bering Sea pollock fishery under PSC limits for Chinook salmon.	New and more effective Chinook salmon bycatch minimization program implemented for the Bering Sea pollock fishery by 2011.	Monitor salmon bycatch and industry incentive agreements to minimize salmon bycatch.	Final rule to implement Amendment 91.
11	Bering Sea non-Chinook salmon bycatch.	Delay analysis of alternatives to reduce non-Chinook salmon bycatch until mid-2009.	NPFMC will begin analysis of alternatives to replace Amendment 84 to minimize non-Chinook salmon bycatch.	Ongoing development of proposed new program.	New and more effective non-Chinook salmon bycatch reduction program implemented for the Bering Sea pollock fishery by 2012 or 2013.	NPFMC action to adopt new bycatch measures; rulemaking.	NPFMC adopts new non-Chinook salmon bycatch measures in 2011 and subsequent implementation of a final rule in 2012 or 2013.
12	Central GOA Rockfish.	Pilot program completed; final rule published November 20, 2006 (71 FR 67210).	Development of new catch share program for Central GOA rockfish fishery to replace the pilot program when it sunsets the end of 2011.	Development of proposed and final rules.	Address conservation goals by providing opportunities to utilize fishing methods that reduce bycatch and gear conflicts.	Periodic program reviews and associated reports presented to the Council .	Council adoption of new rockfish program June 2010; publication of proposed and final rules in 2011.
13	Seabird bycatch reduction in longline fishery in Area 4E of the Bering Sea	Completed	non required	none required	Increase effectiveness of seabird avoidance measures and reduce burden on the fishery by tailoring avoidance measures to fisheries and in areas where short-tailed albatross occur.	Monitor incidental takes of seabirds and associated distribution of short-tailed albatross	Final rule published March 27, 2009 (74 FR 13355). Effective April 27, 2009.

Activity Number	Action	Status as of September 30, 2009	2010	2011	Outcome	How progress will be measured and/or monitored	Milestones and anticipated completion dates if applicable
14	Seabird bycatch reduction in longline fishery.	Completed; Final rule published December 18, 2007 (72 FR 71601).	No further action.	No further action.	Reduce levels of incidental take of seabirds, and remove unneeded regulations. Also, free streamer lines are provided to the Alaska longline fleet through the Pacific States Marine Fisheries Commission.	Monitor levels of incidental take of seabirds.	Future regulatory refinements as deemed necessary.
15	Revisions to MRAs for GOA arrowtooth flounder.	Completed.	No further action.	No further action planned.	Decrease regulatory discards and increase retention of arrowtooth flounder in the GOA.	Annual reports on discard amounts in the arrowtooth flounder fishery.	Final rule published March 27, 2009 (74 FR 13348).
16	Propose, develop, and analyze different market-based salmon bycatch management systems.	Worked with NPFMC and industry to help refine and evaluate the proposed Incentive Plan Agreements for pollock cooperatives.	Continue to work with NPFMC and industry on finalizing the Incentive Plan Agreements.	Analyze the effects of the Incentive Plan Agreements.	More effective, economically efficient salmon bycatch management in the pollock fishery.	Production of article for peer-reviewed journal.	
17	Report Chinook and chum salmon bycatch stock composition estimates from the Bering Sea trawl fishery to the North Pacific Anadromous Fish Commission (NPAFC)	No action. Previous estimates for 1994-1995 chum bycatch provided to NPAFC in 1998.	Report of stock composition estimates will be completed as warranted for the 2010 NPAFC meeting.	Report of stock composition estimates will be completed as warranted for the 2011 NPAFC meeting.	Share bycatch stock composition estimates with an international audience. Integrate with genetic stock composition estimates being derived at Auke Bay Labs for the 2006-2007 BASIS cruises to better understand salmon migration patterns.	Serve as U.S. representatives to the NPAFC and prepare annual NPAFC bycatch stock composition report(s).	Yearly starting in fall 2010.
Education and Outreach							
1	Improve bycatch information available to industry.	Working with private fisheries management firms to provide accurate, precise, and timely bycatch information for transmittal to fleet.	Ongoing.	Ongoing.	Industry will be better informed about gear technology, the effects of bycatch, and in-season bycatch data and can make better decisions to avoid bycatch.	Progress will be measured by ability of individual sectors to avoid bycatch and manage allocations and total allowable catches (TACs).	Remaining below TACs, allocations, and PSC levels.
2	Improve bycatch information available to fishery managers and other stakeholders, including the public at large.	Annually present bycatch information to the NPFMC on the effects of regulatory discards.	Ongoing.	Ongoing.	Fisheries managers and the public will be able to make better decisions regarding management actions and policies.	Presentation of bycatch information to the NPFMC on the effects of regulatory discards.	Annually.
3	Coordinate with fishing industry and the AFSC on the development, review, and issuance of exempted fishing permits (EFPs) intended to reduce bycatch mortality in the groundfish fisheries.	Ongoing coordination on EFPs assessing salmon and halibut excluder devices.	Coordinate new EFPs assessing better ways to assess and reduce halibut discard mortality.	Ongoing.	Development of potential regulatory provisions that would result in reduced bycatch mortality in the North Pacific groundfish fisheries.	EFP activities and results will be presented in reports to NMFS and the NPFMC.	Present a report to the NPFMC on the conclusion of experimental activity authorized under each EFP.
4	Participation in international efforts to address bycatch problems (including at regional fishery management organizations and U.S. government bilateral fishery meetings).	The NMFS National Seabird Program is coordinated out of the AKR and engages in numerous activities to promote international action to effectively address seabird/fishery issues.	Ongoing.	Ongoing.	Support information needs for decision makers outside the United States to decrease bycatch and obtain information to provide efficiencies in domestic efforts to reduce bycatch.	Maintain record of NMFS involvement with international seabird activities and events.	Any products (reports, papers) from joint U.S./international seabird bycatch reduction efforts.

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5	Seabird interactions with groundfish trawl paravane gear.	Funding was provided through NMFS' Bycatch Reduction Engineering Program (BREP) and the National Cooperative Research Program (NCRP). A pilot project was completed in 2009. Due to fishing schedules only a 10-day cruise was available. A contract was established for an analyst to report on the results.	Analyze results of study and produce report. Based on results, make recommendations for further work. Coordinate with industry and apply for funding through BREP and NCRP if a conservation need is identified.	Complete more extensive field studies on seabird interactions with paravanes, should 2010 work indicate this is needed and funding is available.	We will gain an understanding of seabird interactions with paravane gear (used by about 10-12 catcher processors) and will have developed potential mitigation methods for testing in field studies with appropriate sample sizes.	Funding available; fieldwork planned, implemented, and completed; analyst on contract; and report produced.	(1) Funding was provided, (2) Field work was implemented and completed in August 2009, (3) Analysis and report is currently underway and will be completed by December 2010.
6	Create standardized process for annual report of seabird bycatch in Alaskan groundfish fisheries.	A workshop was held in 2009 that examined the past approach to bycatch estimation. Two recommendations were made: (1) automate the system via AKR Catch Accounting System to produce point estimates, and (2) create a 2-year post-doc to use a modeling approach to analyze bycatch and validate point counts.	Work with AKR to make changes to Catch Accounting System. Develop plan and funding needs for 2nd recommendation.	Annual bycatch estimates are being produced using the Catch Accounting System and reported through processed report. First year of post-doc analysis position to take a modeling approach (depending on funding availability).	Annual reports of seabird bycatch will be available in a more timely manner and depend less on intense staff work for estimation processes. The modeling approach will provide estimates of variability and ground-truth the Catch Accounting System.	Availability of annual estimates by July of each year. Funding is provided for post-doc (or similar) position.	(1) Initial request made to AKR, (2) Informal workshop held to determine appropriate procedures, (3) Specs developed and submitted by May 2010, (4) Changes to AKR Catch Accounting System implemented by Dec. 2010, and (5) funding provided to support a post-doc or similar position to use a modeling approach for seabird bycatch estimation.
7	Work with Alaska Department of Fish and Game (ADFG) and the University of Alaska to improve coverage in genetic baselines for performing genetic stock composition estimates of the Bering Sea salmon bycatch.	None.	Developing AKSSSF proposal in collaboration with ADFG and UAF seeking funding to improve stock composition estimates by adding additional chum and Chinook salmon populations to the genetic baselines.	Process samples for microsatellite loci, begin reviewing baseline and samples, and begin integration of joint baseline data. Begin collecting Chinook salmon genetic samples in summer 2011.	Improve genetic baseline for producing more refined stock composition estimates. Better understand potential effects of salmon subsistence needs in affected areas.	Collection and analysis of genetic baseline samples in collaboration with ADFG and UAF.	Start collecting Chinook salmon genetic samples from the Alaska Peninsula summer 2011 (if funded). Genetic analysis of available chum salmon baseline samples to start fall 2010 pending funding. Complete report delivered to AKSSSF in October 2012.
8	Hold workshop at AFSC on bycatch incentive mechanisms.	New 2010 activity.	Organize and host meeting at AFSC, bringing together academic specialists and industry.	N/A - work will be completed in 2010.	Improved communication on bycatch incentive mechanisms among academics, federal agencies, and affected industry.	Workshop organized.	
9	Organize special session on the economics of bycatch in the IIFET bi-annual meeting.	New 2010 activity.	Special session organized on bycatch economics.	N/A - work will be completed in 2010.	Increased opportunity for economists involved in bycatch research to communicate.	Special session organized.	
NOTE: This is a working document that will be revised in the future as additional, practicable bycatch reduction opportunities occur. Red items are primarily associated with							

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the North Pacific Groundfish Observer Program, yellow with stock assessment and research functions of the Alaska Fisheries Science Center, green with Alaska Enforcement Division (AED), and blue with the Alaska Regional Office.							