

Activity Number	Action	Status as of September 30, 2007	2008	2009	Outcome	How progress will be measured and/or monitored	Milestones and anticipated completion dates if applicable
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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 the North Pacific Groundfish Observer Program, yellow with stock assessment and research functions of the Alaska Fisheries Science Center, green with AED, and blue with the Alaska Regional Office.

Actions to Improve SBRMs for the BSAI and GOA Groundfish Fisheries, the Alaska Pacific Halibut fishery, and the State Managed MMPA Category II Salmon Fisheries

1	Collect special fishery dependent data collections outside of standard observer protocols to meet short term user needs.	Several special data collections will be conducted several of which are bycatch related. For example, we are collecting bird bycatch information specific to an AFSC researches needs. A complete list of planned projects is available upon request.	Several special data collections were conducted several of which are bycatch related. For example, biological samples were collected for life history information from three different skate species. A complete list of project is available upon request.		Solicit requests and respond to identified needs as resources allow.	Improved information supporting a range of bycatch characterization objectives.	Agreed upon special data collections will be implemented January 1st of each fishing year.	1) Solicitation of proposals in mid-year. 2) Annually implementation of approved proposals on January 1.
2	Evaluate technologies suitable for monitoring groundfish fisheries.	1) Secured outside (NPRB) funding with the International Pacific Halibut Commission to evaluate the use of video to assess bycatch in the Pacific Halibut fishery. Experimental design was developed and research will be conducted in 2008. 2) Participated in cooperative research with industry to assess the applicability of video in monitoring the quality of halibut bycatch in the trawl rockfish fishery in the Gulf of Alaska. 3) Develop draft manuscript reporting on past studies assessing observer sampling and video approaches to monitoring.	1) Conduct field work in cooperation with the IPHC to assess the applicability of video. 2) Continue to work with industry on a second phase of this cooperative research to conduct a trial test of video in practice as a primary halibut bycatch monitoring tool.3) Publish the paper referenced in the 2007 coulumn.		No work is currently planned.	Basis for determining best mix of technological and human resources to address specific bycatch and catch monitoring needs.	1) periodic coordiantion with IPHC, 2) coordiantion with AKR and industry, 3) general supervision.	1)Field work competed. 2) Phase two conducted with NMFS support, 3) Research results published.

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3	Develop approaches for expanding observer deployments to meet additional agency information needs for catch and bycatch estimation.	None	1) Submitted request for 2010 National funds to support implementation of annual catch limits. 2) Increased coverage requirements on a sector of the fleet to meet Regional information needs.	No work is currently planned.	Deploy additional observers to fill priority catch and bycatch characterization data gaps.	1) To be determined. 2) monitoring compliance with regulatory requirements.	1) Funds are received by AFSC. 2) new requirements are met by industry.
4	Revise observer data collection protocols to meet evolving needs and to improve bycatch data quality.	Planning and project management to enable a 2008 change	Data collection protocols are being revised to better meet end user needs. Revised protocols will be taught for data collections that will take place in the 2008 fishing year. In addition, any new data collections and associated database and data application changes will be implemented at the start of 2008.	None planned.	Improved data collection to address bycatch estimation needs	New collections and protocols implemented.	1/1/2008
5	Investigate the impact of a real-time bycatch monitoring system on bycatch levels and fishing location choice in the BSAI.	Conducted preliminary analysis of closures impacts and provided input to SSC and Salmon Bycatch Workgroup	Expand and improve analysis of the effects of the system and consider potential changes; report findings	Continue analysis and assist Council staff in ongoing actions	Evaluate the extent to which alternative bycatch management strategies affect bycatch rates and fishing strategies.	By the development of a model to assess the bycatch system.	
6	Improve methodology for estimating prohibited species bycatch.	Prepare modeling strategy work with AKR to understand current bycatch estimation procedure for unobserved vessels.	Develop bycatch estimation model and compare with current AKR approach.	Report findings	Increased precision in estimating overall prohibited species amounts or rates, by statistical area, gear type, and mode of operation.	Development of new methodologies to estimate bycatch.	N/A
7	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. Project on schedule	First edition of NBR will be published	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	
8	Report on large whale entanglements in Alaska	Not initiated	Complete draft report in late FY08	NA	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	Draft report to be complete in late FY08; final report to be completed in late FY09.

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9	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 FY08	Ongoing	Administrative report	Report will be completed	Completion in FY09
10	Evaluate the need for additional compliance resources to maintain the integrity of the observer data.	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 SF and observer program staff on alternative monitoring technologies.	AED will participate in technical working groups as needed.
11	Review compliance issues associated with current bycatch reduction programs.	Alaska Enforcement Division (AED) continues to play an active role in recommending monitoring and enforcement activities for Council actions. Enforcement actions for bycatch related violations are handled on a case by case basis.	Ongoing	Ongoing	Bycatch reduction programs which greatly reduce or eliminate incentives for interfering with monitoring.	AED will continue to work with NMFS and Council staff to provide support for bycatch reduction actions.	AED will participate as needed.
12	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).	Final rule anticipated to be published end of 2008.	Implementation January 2008.	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.	Anticipated implementation January 2008.
13	Evaluate methods for improving bycatch estimates of marine mammals in state managed MMPA Category II salmon fisheries.	Observed Yakutat set-gillnet salmon fishery summer 2007. Data analysis ongoing	Observe Yakutat set-gillnet salmon fishery in summer.	Dependant on funding.	Increased accuracy and precision to determine if PBR levels are exceeded, categorizing fisheries in annual List of Fisheries, and determining whether a fishery has approached a zero mortality rate.	Observation of Yakutat set gillnet fishery.	Summer 2008

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14	Implement non-discretionary measures identified in Biological Opinion issued by USFWS on impacts of Pacific halibut longline fishery on 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.	Ongoing	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 Council initiative and AFSC Observer Program. Monitor activities of Council, AKR, AFSC that relate to this item.	Monitoring plan for the halibut fishery.
Improve Our Ability to Estimate the Biological, Ecosystem, Social, and Economic Effects of Bycatch and of Alternative Methods for Reducing Bycatch:							
1	Stock assessment research for non-target groundfish species.	Stock assessments were prepared for skates, squid, sculpin and octopus. In 2007, observer special projects were initiated for 7 species sculpin species in the BSAI and 6 sculpin species in the GOA.	Assessments will be updated, conditional on funding and priorities. Observer special projects to collect sculpin species identification will be continued. Observer special projects to collect skate sex and length will be continued.	Assessments will be updated, conditional on funding and priorities. Observer special projects to collect sculpin species identification will be continued.	Improve the 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 2007 SAFE chapters will be completed
2	Stock assessment research to reduce prohibited species bycatch.	James Ianelli developed a paper titled: Adult equivalence estimation for incidental salmon harvest designed to evaluate run size impacts. This paper was submitted to the NPFMC for consideration of harvest controls methods to mitigate salmon bycatch in groundfish fisheries. James Ianelli served on the NPFMC salmon bycatch working group.	Analytical support on salmon bycatch mitigation measures will continue.	Analytical support on salmon bycatch mitigation measures will continue.	Evaluate the extent to which alternative bycatch management strategies affect bycatch rates and fishing strategies.	By the development of a methods that appropriately account for the impact incidental catches have on salmon populations.	Manuscript will be prepared for peer review in 2008

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3	Economic and social science data collection and research.	Paper with Kurt Schnier and Rob Hicks completed and under internal AFSC review. Work presented at professional conferences by co-authors.	Work on real-time salmon bycatch modeling for pollock fishery	Submit publications on salmon bycatch in the pollock fishery	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.	N/A
4	Improved seabird bycatch reporting	Finalize improvements to statistical analysis of seabird bycatch (done as of 8/2007); complete reporting by 5/1/2009	Using improved analysis methods, analyze seabird bycatch in Alaskan waters by time/area cells and fishery sectors.	Produce peer-reviewed paper(s) describing seabird bycatch in Alaska groundfish fisheries.	Improved accuracy and precision in estimates of seabird interactions and bycatch.	Analysis techniques reviewed and approved by peers; bycatch numbers produced.	Project was delayed due to other high priority activities and lack of funding for other actions. New deadlines are (a) tech memo on techniques. 5/1/2008. (b) peer reviewed paper on bycatch. 5/1/2009.
5	Seabird use of fishery discards and offal. NRC postdoc established to work on issue, mapping of discards, and stable isotope sampling started.	Mapping of availability of discards/offal; continue exploration for fishery signal in stable isotope data; implement special data collection projects.	Complete project and define linkage between seabird bycatch and offal/discard production. Revision to milestone as of 11/2006; collaborate with the USFWS to conduct work on albatross populations that will look at known breeding success and determine if a fishery linkage exists.	Assess results of work and determine if changes to offal and discard management are needed.	Define linkage between seabird bycatch and offal/discard production.	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 5/2008. Preliminary results are being presented at the 12/2007 CLIOTOP conference.
Encourage the Development and Use of Gear Technologies that Provide Efficient Methods for Reducing Bycatch							
1	Cooperative research to develop trawl methods to reduce salmon bycatch during pollock trawling	Report on EFP research to date to NPFMC June -07. Some use in fishery.	Further research to improve design and confirm performance	Project report and publications, transition excluders to fishery.	Reduced incidental catch of salmon in directed pollock fisheries.	Documentation of reduced bycatch rates with excluders, excluder use in fisheries.	EFP application, Research cruise in March if approved

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2	Develop halibut excluders for groundfish fisheries.	Halibut excluders developed and tested for GOA cod fishery. In use by fleet.	Assist Bering Sea groundfish fleet in testing halibut excluders for sole fisheries.	Analyze 2008 results and present to potential users. Further design improvements and testing.	Reduced incidental halibut catch in directed groundfish fisheries.	Documentation of reduced bycatch rates with excluders, excluder use in fisheries.	July - Testing fieldwork
3	Improve spatio-temporal characterization of seabird bycatch estimates.	Meet requirements to assess risk to short-tailed albatross and continue field work, if funds available.	Results provided to the USFWS for short-tailed albatross risk assessment and threshold analysis. Spatio-temporal improvements to seabird bycatch reporting is tied to item above. Coordination with the USFWS and AKR on short-tailed albatross recovery issues will continue.	To be determined after discussion in 2008	Improved characterization of when and where seabirds, especially albatross, are being incidentally taken can assist in efforts to reduce this incidental take.	Peer-reviewed papers by collaborators relevant to risk assessment and threshold analysis.	Papers were submitted in 2007 and are now in press.
4	Modify bottom trawls to reduce effects on seafloor habitats.	Field Studies completed and reported to NPFMC, which endorsed use for Bering Sea habitat conservation, pending practicality testing and adjustments.	Full analysis of field results. Manuscript on catch effects. Practicality testing and report to NPFMC.	Analyze 2007 results and present to potential users. Further design improvements and testing.	Reduced effects to structure forming sessile animals.	Documentation of reduced effects to structure forming sessile animals with minimal reduction in target catch rates.	June - Practicality report to NPFMC. August - Catch effects analysis
5	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.	Effect of light on herding paper published and paper on general behavior response to trawls accepted.	Continue data analysis and write up paper linking lab and field observations.	none	Reduced incidental catch in directed rock sole fisheries.	Complete experiment, data analysis, acceptance of publications.	Annually.
6	Measure injury/mortality rates of crabs encountering trawls	Pilot study completed. Funding secured from NPRB.	Principal field work. Manuscript on mortality estimation.	Analysis and reporting on results.	Documentation of mortality and injury rates.	Documentation of mortality and injury rates.	August - Field-work completion

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7	Seabird interactions with longline gear	Funding and staff support were not available in FY2007, so project delayed.	Prepare a report on demersal longline vessel-specific seabird bycatch rates. This report would allow for targeted work on reducing the bycatch of the poor performers in the longline fleet, and thereby lowering overall bycatch of the fleet.	Evaluate reported vessel-specific seabird bycatch rates for groundfish longline vessels based on FY2008 analysis and develop a gear-program to assist vessels in reducing their seabird bycatch.	Documentation of vessel seabird bycatch rates published in Technical memo or better (with appropriate confidentiality protections).	List of vessel by vessel seabird bycatch rates available to NOAA Fisheries managers, Tech memo or peer reviewed paper that reports outcomes but protects confidentiality.	Funding was not available in FY2007. Completion date in FY2008 if funding is available. Project delayed until funding and analyst are available.
8	Trawl vessel interactions with seabirds.	Continue work to characterize problem by trawl fishery sector: complete technology assessment; continue collaborative efforts to develop mitigation	Report on characterization; continue collaboration on mitigation measures; identify fishery sectors where efforts should be focused.	none	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 BiOp (Sept 2003).	Finish purchase orders and produce reports.	As of 11/2007: 3 purchase orders implemented, work completed, and closed out. Reports include: collaborators report on 1st generation mitigation measures in prep; Trawl fleet effort and 3rd wire use report in press (WSGP). This work is also related to items #40, and these reports will allow us to better identify sectors where further research may need to be focused (including offal management or mitigation
Develop and Implement More Effective and Efficient Management Measures to Reduce Bycatch							
1	Accounting interval change for certain Maximum Retainable Amounts (MRA).	Proposed rule expected to publish December 2007.	Publish final rule and implement early 2008.	Ongoing	Decrease regulatory discards and increase retention for non-AFA catcher/processors in the BSAI.	Report to Council on increased pollock retention.	Implementation early 2008.
2	Minimum Groundfish Retention Standard (GRS).	Final rule published April 6, 2006 (71 FR 17362).	Effective January 20, 2008.	Ongoing	Create a standard for retention of groundfish for the BSAI groundfish fishery, reduce groundfish discards, while continuing to allow for a multi-species trawl fishery to continue to be a viable fishery.	Implementation of program.	Implementation January 20, 2008
3	Harvesting Cooperatives for the BSAI head and gut catcher processors and quota allocations to all sectors: Amendment 80.	Final rule published September 4, 2007 (72 FR 52668).	Implement January 20, 2008	Ongoing	Facilitate rationalization of some sectors in the BSAI. Rationalization would eliminate the race for fish and allow cooperative behavior to decrease discards.	Proposed and final rule published.	Implementation January 20, 2008
4	Extend North Pacific Groundfish Observer Program beyond December 31, 2007.	Final rule published July 6, 2007 (72 FR 44795). Effective August 6, 2007.	Ongoing	Ongoing	Continued collection of catch and bycatch data, and management monitoring programs.	Publish final rule.	Continue Observer Program beyond 2007.
5	Non-target species management.	Continued development of problem statement and Alternatives.	Development of EA/RIR/IFRA, and Council action.	Publish proposed and final rule.	Optimization of sustainable yield of non-target species, where possible, while also protecting them from potential overfishing.	Publish proposed and final rule.	Publish proposed and final rule. 2008.

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6	GOA groundfish fishery rationalization.	Development of options and components for analysis.	Ongoing; Council action as needed.	Ongoing; Council action as needed.	Provide opportunities to address conservation goals by providing opportunities to utilize fishing methods that reduce bycatch and gear conflicts.	Publish proposed and final rule.	Council action dates are unknown.
7	Essential Fish Habitat (EFH)	Development of propose rule.	Proposed rule expected to publish in early 2008. Final rule expected to publish in mid 2008.	Ongoing	Minimizing the adverse effects of Council managed fisheries by describing EFH for these fisheries and identifying HAPCs.	Publish proposed and final rule.	Implementation of BS action 2008.
8	BSAI Salmon bycatch (Am 84a)	Am 84a final rule published October 29, 2007 (72 FR 31070). Effective November 28, 2007.	Ongoing	Ongoing	Am 84a: reduce salmon bycatch by repealing salmon savings areas and allowing pollock vessels to utilize their voluntary rolling hotspot system to avoid high bycatch areas.	Publish Am 84a final rule and implementation of program.	Implementation of Am 84a by January 20, 2008.
9	BSAI Salmon bycatch (Am 84b)	Council initiated analysis of alternatives, and formed salmon bycatch workgroup.	Council final action December 2008.	Proposed and final rulemaking	Am 84b: evaluate alternative salmon savings areas based on historic information and/or incorporate individual bycatch quotas to reduce salmon bycatch.	Publish Am 84b final rule and implementation of program.	Implementation of Am 84b by January 20, 2010.
10	CGOA Rockfish Pilot Project	Final rule published November 20, 2006 (71 FR 67210). Effective December 20, 2006.	Ongoing	Ongoing	Provide opportunities to address conservation goals by providing opportunities to utilize fishing methods that reduce bycatch and gear conflicts.	Publish final rule and program implementation.	Final rule November, 2006. Implementation January, 2007.
11	Seabird bycatch reduction in longline fishery.	Proposed rule published September 7, 2007 (72 FR 53516). Final rule expected to publish by end of 2007.	Implementation.	Ongoing	Reduce levels of incidental take of seabirds, and remove unneeded regulations. Also, free streamer lines are provided to the AK longline fleet through the PSMFC.	Monitor levels of incidental take of seabirds. Monitor status of proposed and final rulemakings.	Reduced levels of incidental take of seabirds. Published proposed and final rulemakings.
12	Revisions to MRAs for GOA arrowtooth flounder.	Council final action at October meeting	Rulemaking and implementation expected.	Ongoing	Decrease regulatory discards and increase retention of arrowtooth flounder in the GOA.	Report to Council on increased arrowtooth flounder retention.	Implementation late 2008.
Improve the Outreach Activities that Assist in Meeting the First Four Objectives and Provide Information that Can Be Used to Address Bycatch Problems in Other Fisheries							
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 inseason 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 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 Council 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 Council on the effects of regulatory discards.	Annually

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3	Obtain better bycatch information.	Current efforts to improve salmon bycatch estimation.	Ongoing	Ongoing	Programs under this activity will be used to support outreach efforts under other activities under this heading.	Presentation of salmon bycatch information to the Council.	Annually
4	Participation in international efforts to address bycatch problems (including at regional fishery management organizations and US 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 U.S. 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 US/international seabird bycatch reduction efforts.