EM Cooperative Research Workshop
Juneau, AK Feb 17-18, 2014

Present: Dan Hull (Council), Glenn Merrill (NMFS AKR), Martin Loefflad (NMFS AFSC), Farron Wallace (NMFS AFSC), Chris Rilling (NMFS AFSC), Kathy Hansen, David Polushkin (KB Fisheries), Pat Livingston (NMFS AFSC), Dave Colpo (PSMFC), Bruce Leaman (IPHC), Linda Behnken (ALFA), Malcolm Milne (NPFA), Dawn Mann (AMR Inc.), Morgan Dyas (SWI), Chris Lunsford (NMFS ABL), Dana Hanselman (NMFS ABL), Phil Rigby (NMFS ABL), Adam Zelesky, Molly Zelesky, Bernie Burkholder, John Heifetz (NMFS ABL), Carla Bush (ADFG), Megan Peterson (ADFG), Howard McElderry (AMR Inc.), Pete Jones (NMFS AKR), Eric Torgeson (FinSight), Representative Jonathan Kreiss-Tomkins (AK House of Representatives)

Monday (Feb 17th 1:30-5:00pm) at DIPAC fish hatchery

Introductions and Agenda
Introductions were made and the agenda was approved (Attachment 1). The following section headings correspond to the headings in the agenda.

Workshop goals/objectives/expected outcomes (Hull – moderator)

Dan Hull gave an overview of the data and management needs for fishery management and how EM could contribute to these management needs. The goal of the workshop was to reach agreement on a cooperative research plan and to identify roles and responsibilities of the various parties involved in the effort. At the February Council meeting the Council expressed approval for cooperative research in 2014 and for convening an EM workshop between NMFS and the fixed gear industry. The workshop outcomes will be presented at the next Council meeting in April, likely as part of the "B" reports.

Industry summary of fleet demographics

Dan Falvey provided a document produced from data provided by the CFEC (Attachment 2) of fleet demographics for the Pacific halibut longline, sablefish longline, Pacific cod pot, and Pacific cod longline fisheries. The data were intended to provide information on fleet composition to enable discussion of possible deployment opportunities for EM. For example in all four fisheries a majority of the landings were taken by the top quartile (top 25%) of vessels in the fishery. The characteristics of the fleet such as overall landings by quartile, landings by port, fishing area, and vessel length could lead to strategic approaches for EM and observer deployment that might improve efficiencies and reduce costs. Additional data elements that might be analyzed to improve predictive capability include landings by species, seasonality of fishing effort, number of sets, set locations, and time for setting and hauling gear. There was a common understanding that vessels <60 feet in length have not historically had any observer data available and that analyzing other relevant data sources such as survey data or other commercial landings data would be appropriate provided observer data are incorporated into the analysis when they become available.

(One of the participants for agenda item 3 was not available at the beginning of the session, so the order was rearranged to discuss agenda item 4 first and then return to agenda item 3).

Other 2014 EM testing programs currently underway including NMFS, industry, and survey vessel projects

Farron Wallace provided an overview of the current development status of AFSC EM projects. AFSC has a contract with SWI that is focused on research and development to improve hardware configurations, and a separate NPRB funded project working with stereo camera systems to collect species identifications and lengths. The stereo camera technology has been in use by the AFSC MACE Division for several years in an underwater trawl survey application. Current work involves setting up a stereo camera system and chute at Bornstein's processing plant in Astoria, OR to collect fish images needed for species identification and length estimation programming. The NPRB funded project will deploy two stereo camera chute systems on vessels this fall and two more rail stereo camera systems next year. AFSC has also submitted a funding request to NMFS to develop e-logs to automate the collection of fishing event data such as fishing location and fishing effort data. Broad application of e-logs could help to characterize the fishing fleet.

Malcolm Milne provided an overview of a NFWF funded project being done with SWI on Pacific cod pot and longline vessels to collect fishing event data. Mr. Milne expressed an interest in folding the project into the cooperative research that is being discussed at this meeting.

Dave Colpo described four projects being conducted by PSMFC: 1) support work being done by AFSC to develop applications for stereo cameras; 2) fixed gear boats in Morro and Half Moon Bay; 3) 12 whiting vessels that will carry EM with the goal of determining weights from known bin volumes on the vessels; 4) discard chutes on vessels carrying at-sea compliance monitors to identify species, lengths, weight and compare to observer data. In addition PSMFC is working on three Exempted Fishing Permits (EFPs) to conduct EM work on 1) shoreside whiting fishery, 2) Morro Bay trawlers vs. fixed gear vessels, and 3) testing feasibility of EM on full retention vessels.

Dan Falvey described a NFWF funded project to compare data loggers to VMS with the goal of determining whether data loggers are effective at identifying fishing in closed areas, fishing events, and start and end points of fishing events.

Current development status and capabilities of EM technologies, field logistics, and data review capacity, -- species ID, weight, length, deployment methods, data review methods, cost, compatibility, reliability

Howard McElderry provided an overview of AMR capabilities and lessons learned in development of EM systems, including not just the importance of technology, but also of capacity building, industry involvement, and monitoring the program's performance. In his view, the operational framework of the program is big and takes time to set up and is worth working on even if the technology being used initially is not exactly what will be used later. At the same time, there can also be a danger in investing in one technology too soon if it needs to be changed out or upgraded to more advanced equipment. In B.C., fishers who purchased their own EM equipment were reluctant to upgrade to newer technology until their old equipment wore out. The current model where EM equipment is leased to the program does not pose

this risk. Morgan Dyas provided the SWI perspective on EM development and importance of partnering with local groups, developing software for review capability, and improving ease and speed of installation of camera systems. Mr. Wallace gave an overview of stereo camera system capabilities, history of development, potential advantages of reducing post-processing times through automated image analysis, and the work currently being done to integrate data collection from camera systems into the Catch Accounting System (CAS). Martin Loefflad gave a status report of e-log development (Attachment 3). E-logs are currently required for catcher-processors (CPs) in the BSAI Pollock fishery, CPs in the Rockfish Program, and freezer longliners CPs using flow scales.

A variety of topics were discussed during this section of the agenda that are not described in detail here. These included chain of custody and confidentiality of EM data, compliance, data turnaround times, measuring boards or other means of obtaining lengths, sampling rates, image recognition and species identification, incorporating uncertainty estimates into species identifications, on board and long term data storage requirements, and cost implications for many of these topics.

Tuesday, Feb 18th 8:30-5:00

Identification of science and management information needs that can be addressed by EM

a. NMFS science and management needs (AKR and AFSC).

Pat Livingston gave an overview of NMFS' stock assessment needs and requirement of catch statistics for all species and provided a memo summarizing these requirements (Attachment 4). The memo included a list of species vulnerable to overfishing. Some species are close to or exceeding their ABC. The SSC will review data from the EM cooperative research project as part of the council process. The SSC has reviewed cooperative research in the past and AFSC will likely provide an analytical package on observer restructuring and EM cooperative research describing impacts to stock assessments. Participants at the workshop expressed appreciation for including the list of vulnerable stocks. There were questions about how biological samples would be collected and which species would feed into the EM project. NMFS and the Council, through the Plan Team and SSC, have an iterative process where biological data are requested based on the previous year's collections. The June observer program review will include targeted coverage rates, a description of what was actually collected, and recommend changes to future sampling.

Glenn Merrill described the legal mandate under MSA not to exceed ACL's. NMFS needs total removals in weight coming out of the CAS, and observer program data are the only source for estimating discards at sea. EM may be able to supplement this data but eventual implementation will require an analytical review process with the Council to describe why NMFS is taking this approach and what the tradeoffs will be. For example, information on halibut discards will be important for analysis of any proposed management actions on trawl bycatch.

The timing of catch and discard estimates feeding into management processes was discussed. The CAS can accommodate hourly, daily, and multi-day reporting timeframes. Timing of in-season management actions depends on when AKR receives the data through e-landings or observers. The system updates

daily and in-season managers review the data to determine whether ACL's, prohibited species catch (PSC) or other limits have been reached and closures are necessary.

b. IPHC science and management needs (Leaman).

Bruce Leaman gave an overview of IPHC needs/requirements and how these could potentially be met through an EM program. For IPHC purposes data collection should include release methods, deck sorting, time of haul, time on deck to determine condition factor of discarded fish, size released, and other data necessary to estimate total mortality. Ideally IPHC would want a census approach to data collection on board individual vessels but subsampling would also be acceptable. Standards must be established in order to have vessel catch subsampling be acceptable.

There were comments/questions about how to account for total mortality of halibut discards including halibut mortality due to whale depredation. Whale presence could be determined either through EM or other means to determine possible depredation. Post release mortality would best be determined through tagging studies, which can be expensive. The topic of seabird bycatch was also brought up noting that seabirds can be difficult to identify with current EM systems. In summary, science and management needs for EM could include: 1) stock assessments, 2) in-season management, 3) halibut and/or other species discards, 4) presence/absence of whales, seabirds, or other protected and/or prohibited species.

Development of possible monitoring objectives, priorities and precision standards for EM

a. Council priorities (Hull lead).

Dan Hull described the Council priority to identify and account for discards in the IFQ fixed gear fleet. The lack of data from vessels <60 feet in length was noted. The Council priorities were expanded to include catch from other sectors where EM data might be more readily collected such as Pacific cod longline and pot. Although the primary objectives of EM are still applicable, the Council took steps to prioritize observer coverage where PSC species must currently be accounted for. Mr Hull noted that the Council's EM Strategic Plan provides the overall context for any EM cooperative research and that the cooperative research plan should provide a direct linkage back to Strategic Plan.

b. How a range of performance standards might impact management decisions (AFSC Lead).

Mr. Loefflad described the need to initiate cooperative research in order to provide data needed to develop performance standards and understand the ability of EM to meet management needs. Workshop participants discussed assembling plausible and comprehensive "strawmen" for various EM approaches to inform Council management decisions. Approaches to analyzing impacts could include a risk assessment or Management Strategy Evaluation. Mr. Leaman reminded workshop participants of the importance of bycatch in the halibut fishery in light of the ongoing MSC evaluation of the fishery, which led to a discussion of how to address risks, the capabilities of EM systems, what gaps there are, and the development of an iterative evaluation process. Performance standards need to be identified and defined.

c. Identification of plausible performance metrics that can be addressed through cooperative research (Hull Moderator).

The group decided to discuss the following metrics during the cooperative research portion of the agenda: species lengths, weights, cost, and compatibility with fleet.

d.Identify plausible EM approaches for further discussion

Dan Falvey provided a handout labeled EM Approach 1 for discussion (Attachment 5). The document proposes an approach for developing an EM project, including evaluating objectives and costs. In-depth discussion about the document was rescheduled for agenda item 8 on the cooperative research plan.

Discuss phases of implementation and priorities for identified EM approaches (Hull lead)

Mr. Hull moderated a discussion about logbooks, how data are incorporated into the CAS, what fields are collected, and how e-logs would be integrated. E-logs would simplify the data collection and would improve catch estimation.

2014 cooperative research plan (Hull Moderator)

Mr. Loefflad and Mr. Wallace provided an overview of the Draft FY14 Cooperative Research Plan that was provided to workshop participants (Attachment 6). Mr. Loefflad stated that eventual implementation of EM would require an analysis and alternatives to inform Council decisions, and that cooperative research will help to inform that work. In addition, there was specific direction in the FY 2014 Budget Appropriations language tasking NMFS to test the functionality, cost, data quality, species ID capabilities, and reliability of hardware. The cooperative research plan proposed by AFSC would compare two systems: stereo cameras (on rails and chutes) with observers and standard EM systems with observers to help inform the Council decision making process. Mr. Loefflad outlined a plan to move forward with PSMFC to help with implementation, extraction of information from video systems, possible funding, and a Request for Proposals (RFP) to conduct EM research that would be released at some point. Vessel responsibilities would be defined in the RFP.

There was discussion about the number of vessels and sample size that would be required, and Mr. Loefflad said this would depend in large part on funds available but that current projections were for 5-10 vessels in each category (stereo and standard EM systems). An agreed upon cooperative study will depend in part on funding and participants willingness to be involved. A variety of factors relevant to the proposed cooperative research were then discussed, including:

1. Stereo camera/chute systems and standard IP systems are at different stages of development; “standard” systems are in use and proven in a compliance capacity, thus the next steps for testing may be different stereo/chute and standard;

2. Importance of focusing on achieving monitoring goals rather than focusing on what technology is best for collecting the image data;

3. Recognition that similar studies have already been done and have been reviewed to inform and calibrate this work; also important to note that in the U.S. these studies have not yet led to operational programs except in a compliance capacity in Alaska. Therefore a different approach

is essential if we are to enable EM for catch estimation and avoid an endless pilot program scenario;

4. Evaluation of available funds or fees.

Some workshop participants noted that questions about costs would not be available until the systems are on the water and begin collecting data. Others noted there is extensive data from other EM programs which can be used to identify plausible starting points.

Linda Behnken expressed the need to consider the whole system (local capacity, communication, field services, data retrieval, review, and feedback), as well as the technology which keeps evolving, in order to understand the data quality and costs of an operational program. Because of this, a comparison of the two EM technologies may not be an effective approach to evaluating the capabilities of EM. The focus of the discussion turned to the next steps in coming up with a workable approach to move forward with cooperative research in 2014. Workshop participants agreed to consider next steps in moving forward with e-logs, stereo/chute systems, and standard EM systems and to focus on monitoring goals rather than what technology is best for collecting data.

LUNCH BREAK

2014 cooperative research plan (continued)

Workshop participants identified four complementary approaches or tracks –
1) Standard camera systems on 5-10 vessels without observers,
2) Standard camera systems on 2-3 vessels with both EM and observers,
3) Stereo camera/chute systems on 5-10 vessels with observers and chute and rail systems, and
4) Integrated e-logbooks.

Participants discussed the availability of anticipated funding through June 2015 and agreed that cooperative research should extend to the first 6 months of 2015, allowing a second season of field work. It was acknowledged that there may be some revisions to the research plans in 2015 based on the experiences from the 2014 field work.

Mr. Hull proposed that the workgroup consider each of the four complementary tracks beginning with the Standard Camera system and focusing the discussion on how the plan provided by Mr. Falvey (Attachment 5) fit into the complementary tracks provided by Mr. Loefflad. The following notes highlight those parts of the EM Approach 1 outline where there was further discussion and/or recommendations for changes to the outline. Only those sections where recommended changes were made are included below (i.e. not all sections of the outline were discussed).

Track 1: Standard Camera System

1. Monitoring Objectives

b. EM at Sea – Estimate total number of individuals captured including drop-off and discard

The discussion focused on NMFS' requirement to account for landings and discards in weights rather than number of individuals. Workshop participants discussed several approaches to resolve the issue. For example, we could compare EM observed boats to human observed boats for weight and length on a haul by haul basis. Boats with only EM could also utilize fully retained species to ground truth the video data for those species with validation at the dock. Observer scale weights could also be compared to length-weight conversions that would be applied to length data collected through EM. This comparison would allow an evaluation of the precision of lengths and subsequent weight estimates based on observer scales.

Outcome: *For Track 1 in 2014, deploy "standard" (IP cameras) on 5-10 vessels (EM only) in Homer and Sitka with potential to include Kodiak and Petersburg. For Track 2, have 2-3 vessels with side by side observers and EM. In spring 2015 field work, re-evaluate funds and assignment of EM.*

2. Stage 1 precision standards

a. Halibut fishery

i. High priority species

The absence of halibut size, length, and weights was noted. Glenn Merrill noted that if time is limited, grenadier are not an ACL managed species and thus are a lower priority from a management perspective.
Outcome: *Under i. Add halibut size, numbers, and release methodology.*

3. Field Services

b. Vessel operator responsibilities

Outcome: *Under iii. (Add) Avoid view obstruction and provide lighting and proper camera placement.*
(Remove) v. measuring boards for grenadiers
(Edit) vi. Replace "trip" with "operations"
(Add) viii. Develop a vessel monitoring plan

c. Coordination and support

i. Develop local capacity to support various EM technologies

1. QA/QC, Feedback

Participants noted the importance of providing immediate feedback to the vessel operator after a trip to let the operator know what is working or not working. This would require the provider or someone else to review at least a portion of the video immediately after the vessel returns to port. Although industry and providers agree that this is doable and essential it is not currently included as a requirement in the existing NMFS contract with SWI. The cooperative research may depend on using the existing contract and a revision of scope would be required. For any new contracts this could potentially be included as a requirement.

Outcome: *No decision on method to provide timely feedback was reached*.

4. Local Data Analysis

Outcome: *Participants agree that NMFS does not have a system for local data analysis but to keep this on the table for future discussion.*

5. Dockside monitoring

Outcome*: For vessels without observers, participants could not identify a process for dockside monitoring, but agreed to keep it on the table for further discussion.*

ii. Undertake planning work to develop:

1. Efficient deployment models

2. Field service models

- There was discussion about whether modeling should be conducted prior to, concurrent with, or after the cooperative research begins. NMFS considers this modelling a bridge to implementation whereas some in industry consider it a necessary component to inform cooperative research.

Outcome: *Once the Council EM Workgroup is established, NMFS will request a special session to consider the modeling topic.*

iv. Vessel Selections

The discussion focused on whether to conduct the cooperative research using an RFP or to use volunteer vessels. Glenn Merrill noted that securing contracted vessels under an RFP would two month minimum so could not be in place for the start of the season. Ms. Behnken commented that ALFA would then look for 5-10 volunteer vessels split between Homer and Sitka that would be taken out of the selection pool as long as they continue to meet the conditions of a compliance agreement. NMFS noted that there must be some process for the fair consideration of selecting volunteer vessels and that it be an open process if there would be an expectation of a release from observer coverage requirements. Mr. Loefflad described that NMFS has already done vessel selections for Jan-Feb and Mar-Apr which complicates process and that a RFP would be much cleaner. ALFA, K-Bay and NPFA agreed to find vessels that are not selected and ask them to volunteer to carry EM. For Track 1, 5-10 boats for EM only "standard" systems wanted in 2014. NMFS may do EM only through an RFP if securing volunteers is unworkable or if providing observer releases is only possible with RFP.

Outcome: *For EM only vessels, NMFS will send a letter to vessels that were not selected and to any vessels that were granted conditional releases during the current selection cycles with the goal of finding 5-10 volunteer vessels in Sitka, Homer, Kodiak and Petersburg. The releases would be offered through 2014, and reevaluated in 2015 if there are not enough volunteers. The RFP will also be released at some point to obtain 2-3 vessels to carry observers and EM (stereo or standard camera system) in Sitka, Homer, and Kodiak.* [Note: Workshop participants agreed to wait for Mr. Merrill to get back to workshop participants with a final determination on whether an RFP is needed to release vessels carrying EM from observer selection or if observer releases can be provided to non-contracted volunteer vessels.]

Track 3: Stereo cameras with observers – All of the key operational issues discussed Track 1 would also apply to stereo cameras. Stereo camera work will lag the standard camera work. There were questions about the cost of stereo cameras and how to split funds between standard cameras and stereo cameras. This will depend on how/if funds become available and how much funding may be left at the end of 2014.

Outcome: *Mr. Hull proposed a discussion about funding with the EM Workgroup on how to split cooperative research funds between 2014 and 2015 and the different research tracks. He noted that in*

the near future this may tie in with Council discussions about Observer Program funding amounts and fee rates.

Workshop participants thought it would also be good to test stereo cameras on pot vessels.

Outcome: *NMFS will consider this as part of the RFP.*

Track 4: E-Logs – E-logs were included as a component of cooperative research in order to provide automated collection of certain data such as latitude and longitude of set and haul positions. The current e-log is focused primarily on collecting effort information on catcher processors and catcher vessels. Industry suggested that possible data entry platforms could include a tablet with an interface to the EM system and highlighted the importance of being able to print the e-log, which could be useful for reporting to IPHC. There are currently beta test versions, and industry input is needed to further advance. The next step is to work with the region on developing a standardized format and data elements for inclusion noting that the focus would be on effort and location data, but not catch.

Outcome: *Mr. Hull proposed a discussion about e-logs with the EM Workgroup to include AKR (Jennifer Mondragon).*

Discussion of next steps (Hull lead).

- *A summary of this workshop will be presented to the Council in B Reports.*
- *The EM workgroup will provide the formal venue for communication within the cooperative research project.*
- *A conference call will be scheduled prior to the April Council meeting with leads from each track identified.*
- *The RFP process will move forward with NMFS working with PSMFC.*
- *Any additional governance and/or steering committees would need to be appointed/approved through the Council EM Workgroup.*

EM Approach 1

1. Monitoring objectives--Total catch estimates for all managed species
    a. Species retained—dockside weight and e landings
    b. EM at Sea—Estimate total # of individuals captured including drop-off and discard
    c. Precision standards
2. Stage 1 precision standards
    a. Halibut fishery
        i. High priority species
            1. Sablefish—Count or estimate # and disposition, retained, weighed dockside, discard/drop off, average weight, biologic samples/lengths: dockside, observed vessels, LL survey
            2. Rockfish—
                a. Stage 1: Vessels under their MRB—full retention, weight, length, biologic samples dockside, observed vessels
                b. Stage 2: full retention regulations
            3. P cod-- Count or estimate # and disposition, retained, weighed dockside, discard/drop off, average weight, biologic samples/lengths: dockside, observed vessels, LL survey
            ~~3.~~4. Halibut—count or estimate number released, release methodology, size.
            ~~4.~~5. Grenadiers- Count or estimate # from EM, biologic samples/lengths:observed vessels, LL survey
                a. Stage 1 average weights
                b. Measuring boards as needed
            ~~5.~~6. Skate (Raja)-- Count or estimate # to species level from EM; biologic samples/lengths:observed vessels, LL survey
            ~~6.~~7. Skate (bathy)-- Count or estimate # to group level from EM; biologic samples/lengths:observed vessels, LL survey
            ~~7.~~8. Dogfish- Count or estimate # to species level from EM; biologic samples/lengths:observed vessels, LL survey
            ~~8.~~9. Other shark-- Count or estimate # to best species level from EM
        ii. Other manages species---- Count or estimate # to best species level from EM, ave weight.
    b. Sablefish fishery—
        i. Same as halibut LL
    c. P Cod Longline
        i. Same as halibut LL
        ii. Estimate halibut bycatch (TBD)
    d. P Cod pot
        i. Same as Halibut LL

3. Field services
    a. EM hardware & provider responsibilities
        i. IP camera
        ii. Compliance camera (TBD)
        iii. Sleep mode at night
        iv. Function test
        v. 24/7 support
        vi. Batt backup (TBD)
        vii. Power supply 12V 110, ok with square wave
        ~~vii.~~viii. Develop a vessel monitoring plan
    b. Vessel Operator responsibilities
        i. Sign EM compliance agreement
        ii. Perform function test
        iii. Maintain system including clean camera. Avoid view obstructions and provide lighting and proper camera placement.
        iv. Power on at start of operations~~trip~~
        ~~v. Measuring boards for grenadiers (TBD)~~
        ~~vi.~~v. Continuous power during trip
        ~~vii.~~vi. Deployment time (2 months, longer, TBD)
    c. Coordination and support
        i. Develop local capacity to support various EM technologies
            1. QA/QC, Feedback
            2. System installation and maintenance
            3. Data retrieval
            4. Local data analysis (TBD)
            5. Dockside monitoring (TBD)
        ii. Undertake planning work to develop:
            1. Efficient deployment models
            2. Field service models
            3. Cost estimates around program design elements.
        iii. Check-in/check out—NMFS notifies local coordinator
        iv. Vessel selection (TBD)
        v. Incentives—
            1. Vessels participating in EM are removed from ODDS and vessels selection pool for duration of EM testing.
            2. Other (TBD)
4. Data review
    a. Record effort (#of skates)
    b. Record set location
    c. Estimation method (TBD)

   d. Species ID—all creatures in sample ID to lowest taxonomic level.
   e. Data turnaround time—7 days (TBD)
   f. Data storage time—(TBD)

5. Incentives

EM Cooperative Research Call
March 5, 2014

Present: Dan Hull (Council), Diana Evans (Council), Doug DeMaster (NMFS AFSC), Steve Ignell (NMFS AFSC), Glenn Merril (NMFS AKR), Jennifer Mondragon (NMFS AKR), Jay Bryan (AMR), Brian Lynch (PVOA), Martin Loefflad (NMFS AFSC), Chris Rilling (NMFS AFSC), Dave Colpo (PSMFC), Linda Behnken (ALFA), Dan Falvey (ALFA), Malcolm Milne (NPFA), Dawn Mann (AMR Inc.), Morgan Dyas (SWI), Pete Jones (NMFS AKR).

Agenda

1. Minutes from the last meeting
2. RFP status (NMFS)
3. Updates on Cooperative Research "tracks"
    Track 1: IP Cameras -- (Sitka-Dan F, linda; Homer--Malcolm, David)
    Track 2: IP cameras/observers (Dan, Malcolm, David, Kathy)
    Track 3: stereo camera systems (AFSC)
    Track 4: elogbooks (NMFS, AFSC, IPHC)
4. Cooperative research funding status
5. Data Review protocols

1. Minutes from last meeting
There have been several versions of the minutes from the EM Cooperative Research Workshop in Juneau and Martin Loefflad will set up a conference call next week to resolve any remaining discrepancies and finalize the minutes.

2. RFP Status
The discussion focused on whether a Request for Proposals (RFP) or some alternative process would be used to provide conditional releases from observer coverage for vessels carrying EM systems beginning in May. There was agreement that an RFP was necessary for vessels with EM and observers, and for vessels with stereo cameras and observers. The unanswered question was regarding the process for releasing vessels from observer coverage during the next selection period beginning in May. The vessels that are currently participating by taking cameras have not been released from coverage. Whether and how they will be in the future is still an open question. Industry participants reiterated that developing this process very quickly is important and that, from their perspective, all volunteer vessels should receive releases from coverage. NMFS is still trying to determine whether an RFP or some other mechanism would be more appropriate and if so, under what conditions the releases would be authorized. NMFS AKR and AFSC have not had a chance to discuss this since the February workshop and agreed to resolve the issue internally and report back to the group.

3. Updates on Cooperative Research Tracks *Track 1*: *IP Cameras.* Four standard EM systems have been installed on volunteer vessels in Sitka and a 5th system is currently being installed. The systems are being provided by Archipelago Marine Research (AMR) under contract to Pacific States Marine Fisheries Commission (PSMFC). The systems consist of two cameras monitoring catch and a third camera obtaining images using different frame rates. No deck/compliance cameras have been installed.

Industry noted a concern about battery drain and the need to have systems shut down at night. NPFA reported that one Homer boat is available to have a Saltwater EM system installed in April under this cooperative research project, if funds become available to extend the work to Homer. He noted there are other EM installs in place on a separate NFWF funded project. Others noted that KBAY representatives may have three boats lined up for late March installs, also in Homer.

There was discussion about retention of rockfish and potential dockside monitoring but detailed discussion of data review protocols was deferred to later. Other industry members noted that they have additional vessels outside of Sitka who would like to participate in the project but PSMFC currently only has sufficient funds for the first wave of camera deployments. The second wave of deployments will depend on availability of future funding. So far, the plan is for AMR to provide cameras in Sitka and Saltwater, Inc (SWI) to provide them in Homer, all via Pacific States contracts. It was noted that the cost structure for deployments will likely differ between Homer and Sitka.

Industry members reiterated their perspective that rapid feedback on QA/QC to fleet was important to the success of the EM project.

ALFA noted they are collecting a range of effort data from Sitka EM boats and will share a template with NPFA and K-Bay Fisheries. It was also noted that vessels could voluntarily share a copy of their IPHC logbook as it contains comparable effort information.

Track 2:IP Cameras with Observers. One vessel in Wrangell is willing to fish with an EM system and an observer in late March, but a decision on the RFP and resolution of funding will need to be completed first.

It was noted that NMFS needs to develop the observer sampling protocols that will occur on this vessels. For example, will observers conduct their normal sampling? Or will they be doing something different such as sampling every set and monitoring all hooks?

Track 3: Stereo Camera Systems. Several industry groups have expressed an interest in deploying stereo camera systems but NMFS is keeping the small boat hook and line fleet under cooperative research as its first priority. A decision on deployment will be contingent upon the RFP and funding. The stereo camera systems were originally planned to be tested under an NPRB grant later this summer. The NPRB work will continue, but we may be able to implement the stereo cameras system through an RFP sooner than previously planned.

Track 4: Elogs. NMFS AKR will take the lead on this track. Industry participants stated that they did not think e-logs should be included in the 2014 cooperative research. NMFS stated that several trawl catcher vessels are already using e-logs because they are required to use paper logbooks and have found the e-logs to be more user friendly than paper logs. E-logs are also available to be deployed on any longline or pot vessels that are interested. The e-log meets IPHC reporting requirements and a paper printout can be sent to IPHC. The e-logs require a computer and printer to print logbook pages. It was noted that the printer requirement would likely be difficult for small vessels in the hook and line fleet. There was a

discussion about features of e-logs such as user profiles, customization of data entry fields, templates, and other issues, some of which have already been addressed with the current version of e-logs. However other features such as automatically incorporating latitude and longitude data from the vessels' GPS into the e-log is not available in the current version. It was suggested that the EM Workgroup could be used to disseminate information about e-logs and get feedback on ways to improve the system. Any vessels interested in using e-logs should contact Jennifer Mondragon in Juneau (her contact info is: Jennifer.mondragon@noaa.gov or 907-586-7010).

4. Cooperative Research Funding

PSMFC does not have any additional funds in hand for additional EM system deployment at this time. All parties are hopeful that additional funds will become available through the federal budget process, and NMFS provided assurance that this is a high budget priority, but the exact sources and amounts have yet to be determined.

5. Data Review Protocols

Dan Falvey provided the document "Data Review Protocols" to participants. The goal of the protocols is to determine what types of EM data need to be collected and what the review process should be. These elements are necessary to determine the ultimate cost of deploying the cameras and reviewing the data. The group was not prepared to discuss the protocols in detail during the call and NMFS AFSC will set up a conference call with a subgroup to review the protocols. It was noted that cameras systems are now being deployed before the review protocols have been agreed to. The subgroup will consist of Dave Colpo, Dan Falvey, Farron Wallace, Martin Loefflad, Brian Lynch, AMR and Saltwater; IPHC will also be invited as they were not on the call but had provided some thoughtful comments on the draft..

Leads for each Track

There was discussion of overall project coordination and our next planned meeting.

Track 1: Linda Behnken
Track 2 and 3: Martin Loefflad
Track 4: Jennifer Mondragon

Next Meeting – March 26, 9:00 am AK time (10:00 am Pacific)

Action Items:

1. Martin will schedule a conference call with the group that will finalize the minutes from the Juneau workshop
2. NMFS will meet internally to discuss the process for releasing vessels in track 1 from observer coverage & report back at the next meeting
3. Martin will schedule a meeting for the "data review protocol subgroup"