

Fishery Data Collection and Research Committee – Technical Committee

May 2-3, 2018

8:30 a.m. – 5:00 p.m.

Council Office Conference Room

Honolulu, Hawaii

Wednesday, May 2, 2018

1. Welcome and introductions

The meeting started at 8:30 am. Brent Tibbatts, Chair, welcomed the participants. Participants, staff, and public introduced themselves. Present are the following members: Samuel Kahng, Me Kimberly Lowe, Thoma Ogawa, Hongguang Ma, Yvonne Mika, Scott Bloom, Justin Hospital, Brett Taylor, Keena Leong-Guerrero, and Mike Tenorio. Members of the public present were PIRO employees.

2. Approval of draft agenda, 2017 report, and assignment of rapporteurs

The agenda was adopted with a few changes. There will be no Guam ecosystem presentation, and it is uncertain if Erik Franklin will be present. All of agenda item 7 will be moved from May 2nd to May 3rd. There were no questions on the 2017 report. Marlowe Sabater, Council staff, and Thomas Remington, Council contractor, were assigned rapporteurs.

3. Report on previous Plan Team recommendations and Council actions

Sabater reported on the status of the 2017 FDCRC-TC recommendations and how the Council took action on the recommendations in the past year. The recommendations encompassed requesting WPacFIN to evaluate 24-hour data collection shifts in Guam and American Samoa as well as evaluating the American Samoa subsidy program. Toby Matthews is currently conducting analyses on this. If there are notable differences, the report will include recommendations for correction.

A signed data sharing agreement with Guam/CNMI/WPacFIN requires a conversation on data system access. The committee also recommended local agencies to implement mandatory licensing and reporting, which is to be discussed today. The committee also directed the Council to look into privatizing data collection; the Council has looked into it but has not moved forward with a workshop to categorize the pros and cons of privatization.

Quach asked about Matthew's analyses, and whether he corrected effort levels due to increased sampling hours (this would complicate analyzing the data).

4. Piecing together current efforts to improve fishery data collection

Sabater also reported on several efforts in place to improve fishery data collection, mostly focused on funding. On the Council side, we are trying to work with NFMS headquarters to get

more funding attention to this region to beef up data collection. The funding line item that goes to the state marine fisheries commission (i.e. the vehicle for NMFS to provide data collection funding) would potentially allow for a funding pipeline to data collection for federal fisheries. But, they want the Council to come up with priorities for the region (despite lacking an appropriate commission), so the Council is using members of the FDCRC, among others, to be “ad hoc” fisheries commission and develop necessary materials (e.g. list of priorities).

The second effort is the MRIP certification through our regional implementation plan; Hongguang will be presenting on this later on, and we should be gearing up for this process so we can have a regular funding stream for MRIP (need certification for funding). Other efforts include smaller and more sporadic activities, such as doing analysis on ECS allowing for the streamlining of data collection, organization, and assessment going forward.

Sabater asked Scott Bloom if there are any other possible funding streams, Bloom responded that data collection isn't exactly prioritized in S-K Grant distribution. So he says “no, in general, but all depends on priorities and gains.” He will report back if new opportunities arise. There were issues mentioned with the Council not being eligible for certain funding opportunities, but agencies may be eligible for the same opportunities (so, we need to see more effort from the agencies themselves). What are the limiting factors for the agencies in this regard? Personality and politics, says Bloom; those on the ground level can get frustrated with disconnects in communication with leadership. Kimberly Lowe added the biggest challenges for agencies is performance and follow-through on grants already received in timely manner. This is beginning to threaten some of the agencies, so it would speak well if they make good on outstanding contacts and fulfill administrative requirements. Bloom stated that there have issues with compliance; we need more business acumen than has been seen in the past. “Help us help you by helping yourself.” Lowe said improvement projects need appropriate support for this sort of data collection; the lack of staffing puts extra stress on Science Center. It is typically easier to propose less and fulfill that than to overpromise.

Sabater said there are no quick solutions in this general situation. Atlantic HMS has been monopolizing all pelagic funding when we've needed to tap into that around the Pacific. We have to be prepared to receive those big pots of money and, within the agencies; we should expect better coordination on how we could deal with this once this pipeline opened in terms of research plans, strategic plans, etc. We can use these as justification to bring in money for fishery commission side of things, plus use MRIP plan to further guide collection efforts. All members of FDCRC who signed off on strategic plan expressed support to moving this forward, so everyone should have some sort of stake in this (not one or two agencies carrying all of the weight). Sabater will go over the task matrix later on today. Hospital asked what would be the vehicle for the pelagic funds. Sabater says “PFRP is dead already”, so they are tapping into the research programs similar to “core team” structure in FDCRC.

5. Status of the fishery dependent data collection improvement efforts

5.A. American Samoa

Yvonne Mika, shore-based creel survey project manager, spoke since Domingo Ochavillo was not present. A formal PowerPoint presentation was not given, but Mika spoke directly on

pertinent updates to fishery performance. Four new technicians have been hired and given fish ID workshops with support of WPacFIN and books. The commercial receipt program is improving thanks to employee training. There are issues in full 24-hour shift from the logistics side (vehicles, staff, etc.). Quach confirmed that a large issue in the territories has been vehicles and them breaking down. She agreed that the frustration of ground-level folks is due politics in leadership. The grants received for her and her associated department are not their own to spend, but controlled by other factors ultimately (that tell them what they can and cannot do). Is there a better way to pipeline money to problems? Staff and leadership can have different perspectives on what core issues are in a given area. The desire for data collection improvement is there, but the budget is not necessarily available.

Bloom asked if Mika had input on recent grant applications, are they coming from top-down or bottom-up? Mika says the manager for boat-based surveys championed that (so slightly ground up). Lowe says there are two issues here: gov't execution of funds (getting procurements), as well as planning and execution at the staff level in securing and using funds. Bloom mention issues with people not fully understanding administrative processes needed to get this grants applied for and allocated.

Ultimately it is necessary to establish a business relationship with other local government agencies and make them feel that the grantors are watching. There is also a disconnect between the local agencies in this sense. Increasing the requirements on a high risk grantee is not going to help if there have been issues with complying with the simple requirements.

Sabater asked if it would be possible to establish an outside group (like IFA) to put into a grant, and then be able to split that pot to route money through different agencies? Bloom says it is circumstantial, but probably not for IFA. If there are ways to circumvent high level constraints, it would be extremely beneficial but could take more work from Council (we would still want to be involved).

Tenorio asked if audits are normal parts of grants, and Lowe said they are not a regular part but always *can* become a part of a grant (look at size of grant vs. what's being spent to administer it). This is typically reviewed via a Fiscal report submitted by territory offices. Tenorio noted that grant managers don't understand this notion?

Hospital also asked about mentions of workshop in the shared document folder for this presentation. There has been one workshop, with two more planned to be done (one delayed by hurricane). Participation was good, especially from boat-based fishers. Hospital followed up asking about registry of commercial licensed fishers. Mika says that this is ongoing, mandatory, and only for commercial fishermen (anyone who sells a single catch). Issues arise when these kinds of fishers sell some to vendors and then utilize other portion of catch in a non-commercial manner.

5.B. Guam

Brent Tibbatts, from Guam DAWR, presented on the status of fishery dependent data collection improvement effort in the territory there. He talked about a brief history of data collection first, which started in 1963 with effort data from aerial surveys, and shore surveys in the morning

hours starting the next year (stayed like this for two decades). Guam was partitioned into 12 sections/fisheries regions then, and now it is divided into 92 locations for a better resolution. Starting in 1985, creel surveys were done in both morning and evening. Tibbatts gave an example of a sampling regime used in Guam. Inshore participation surveys done where shore access exists, direction, and starting location of participation surveys randomly at the beginning of each survey month. In 2017 there was a pilot study to evaluate the effectiveness of DAWRs inshore and offshore expansion algorithm, and also began 24 hour survey shifts (currently being analyzed by Matthews). Purpose of the study was to help determine any differences in effort, gear, behavior, etc. Tibbatts suggested changes to the surveys including the design and algorithm to accommodate current errors. Ideally, looking for consistency in activity captured during shifts. Results show that hook and line had the greatest activity followed by cast net and snorkel spear, and then gill net. All other had less than 7 gear hours per day (not that hook and line had nearly 300). Algorithm-estimated activity and estimated activity from surveys correlated well. There were morning/evening factors noted as well (morning notably greater than evening). The main suggestions from the results were that there will be activity missed regardless, different expansions should be used for different gear types, and there is not a lot of activity in the middle of the night (surveying over this point would not drastically change CPUE).

Hospital asked Sabater about a project looking at Guam fish import database. Tibbatts said there is an ongoing data collection project that started last October. The first few weeks of data showed thousands of entries both from nearby islands for families and retail outlets (both reef fish and pelagic coming in). All from Palau had Palauan names that had to be translated to English for data collection. United Airlines is changing planes used to be more narrow, reducing cargo capacity to bring things in (interisland).

Sabater said first priority was to establish a database/entry portal, which they were able to do on their own. Then, the next phase was to input all paper copies into the database. Tibbatts confirmed that this stage was recently completed by hired data clerks (though data hasn't been viewed yet). The next phase was applying for an S-K grant to hire and train more folks on the ground to ID fish and start logging for the previously established database. It is a transition from recording historical data and collecting new data from this point forward.

Bloom said that initial Phase 2 application was submitted by Guam, and was not encouraged to submit a full application. They wanted to see results from Phase 1 before moving on.

Ma asked about 24 hour shifts. Tibbatts broke down the nearly six-seven hour shifts and fill-in times by Staff to complete the cycle. They could potentially compare different parts of day and night based on this breakdown.

The two main suggestions were that (1) there are fishing methods that are going to be missed regardless of when two shifts are scheduled and (2) apply different expansion factors for each fishing method (e.g. there is not much middle of the night activity).

5.C. CNMI

Mike Tenorio, from CNMI DFW, presented on the status of fishery dependent data collection improvement effort in the territory there (no PowerPoint, had PDF list). There has been a staff

turnover in the past four years. DFW hired new technical staff and a new data manager. Data has been collected but the remaining staff will have to “double the work”. On the commercial invoices, things has picked up with hiring of the technical staff. The number of vendors increased from 4 to 20. There is supposed to be sampling of the head-boats and charter boats. Invoice system, electronic reporting system, life history evaluations, and tagging studies were all emphasized. A tagging project has seen a few tags outside the MPA, and a fisher was contracted to conduct the tagging with others being recruited; mainly emperors, snappers, and jacks in the lagoon. The life history evaluation has an upcoming NOAA cruise to collect target samples, etc.

5.D. Hawaii

Thomas Ogawa, from Fisheries Science Center, presented on non-commercial (Reggie had the focus on commercial, but was not present). The focus will be certification process that Hongguang will present on (MRIP). A conference will be held over the summer with a bunch of NOAA folks to look at MRIP implementation plan that was submitted (hopefully August). They hope to hash out how to do roving survey over an access point survey. They may try to have representatives from the different territories in the workshop. They hope to standardize certain surveys (like the roving surveys) because each territory kind of does their own thing is this regard and this kind of survey has not been certified before. The process doesn't need to be super standardized, just the general primary design. Smaller changes, like collecting gear hours over gear trips, are also being implemented. The use of time locks is being looked at as well, mostly for day time though.

5.E. MRIP and TSI projects

Sabater also presented on the Marine Recreational Information Program (MRIP) and the Territory Science Initiative (TSI). Regarding the TSI, American Samoa had opted out with their 51 vendors; we no longer have a data collector there since they are collecting invoices, though they requested support for the Fishers Vendor Forum). Guam has 11 vendors being monitored (all with different active/closed/temporary closed status). Most invoices in Guam were from Tei Jay's Fish Mart. For CNMI, eight/nine vendors are being monitors, but local market dynamics are evolving to the point where fishers bring most of their catch directly to the restaurants and other (not monitored) vendors. The monitored vendors seem to be getting leftovers in this way. This will be the last year of implementation, as TSI activities will transition to the local agencies in the territories; our next TSI steps will be improving MUS data collection. Bloom noted that the S-K panel had removed the TSI from the program.

Regarding the MRIP, the implementation in the Pacific Islands has been approved, and the roll out is being planned. There is a direct pipeline for funding via certification of the methods used to collect non-commercial data. The territories' creel surveys require review and evaluation. Hawaii will work on next steps in transitioning into the mail survey (as the recreation license bill is critical). Spear data collection includes the use of a portable device during survey for e-reporting (ispearfish.org); filled out by club members with relevant data (done by Felix Reyes in Guam). Some incentives provided for interviewed fishermen (gift cards, etc.). As of last March for Guam and Saipan (spear clubs in particular), 697 interviews for the year, and the average catch count (in numbers of fish) was about eight. This platform provides real-time summaries; spear typically catches parrotfish, surgeonfish, and jacks. This project is winding down, with Bak

working on the final report. Reyes will continue the roving survey for another year or so. Ogawa asked about a question regarding intent to sell catch, though this could be addressed in the comments. Sabater noted some issues in CNMI from fishers wondering how their data will be used, but club leadership did great outreach to prompt cooperation. Ma asked what priority this project this fulfills, and Sabater responded that they felt a need to fill the data gap here.

5.F. WPacFIN database transition and online interface

Kimberly Lowe, from PIFSC, presented an update WPacFIN's database software transition and the associated online interface for access. The transition from VFP to MySQL is being phased in currently (though in three parts).

First was data migration, as a C# migration tool was developed in 2013 and the migration completed in 2014, which allowed people to begin using the MySQL system and servers (test servers put in place in 2015-2016; production servers with local support in 2016-2017).

Second was developing data summaries, developing skills for selecting data with MySQL. Data processing was divorced from MySQL, and had evaluations completed using the program R. As of April, Matthews completed all six data expansion algorithms using MySQL and R only. Tools for managers were developed, including scheduling applications and in-season assessments of required sample size by gear type (gives insight to manager for gears to look at closely). Table-driven summary reports (like SAFE) can now be produced in MySQL, as has been done by Quach and Gonzalez for the plan team data/reports. Quach has also started training staff in MySQL, but it is hard to learn and travel has been complicated. Program R creel survey expansions were done in hopes of replicating the VFP algorithm (the two time series matched very closely).

Third was migrating the users to data entry and QC. Prioritization of the software development life cycle and order of development for regional data systems completed in 2017. Requirements developed for how the new system will work online with the dealers. Guam will be first completely developed PIR data systems.

For web-design objectives (has been presented to this group before), there are five types of data and a lot of different agencies' requirements to consider. Three phases were described:

1. Access to catch, landings, and commercial data by species or group
2. Catch effort and CPUE by gear
3. Modernized versions of useful data summaries

Lowe then showed the participants the next website and form for accessing data (she subsequently showed a live demo). She noted 508 Compliance necessities will limit what can actually be put out there for the accessible online interface.

Ogawa asked if there are ways to tease out seasonal estimates. Lowe responded saying the nature of the creel surveys makes them most appropriately assessed on an annual basis. Confidentiality issues arise when trying to break data down by gear type or specific species; groupings can allow these data to be displayed.

Hospital recommended pushing this forward, using re-directs when can, and try to get this out when possible. It was suggested that WPacFIN also be expected to host the data in addition to displaying it.

5.G. Discussions

Discussions took place during and directly after each individual presentation.

5.H. Public comment

There were no public comments.

6. Updates on ecosystem monitoring and research

6.A. Life history research

Brett Taylor, from the Life History Program (PIFSC), presented on recent and ongoing fishery-dependent life history research. The commercial fisheries bio-sampling program in the territories provides life span, growth, mortality, maturation, and other basic life history parameters depending on resolution of the data. This is an ongoing project from 2009-present. Species specific information can be derived. For example, in CNMI, aging the spinefoot rabbitfish with otoliths and orange striped emperor spawning timing have been completed, among other analyses.

In CNMI, there is information for *Siganus argenteus* with confirmed strong seasonality in reproduction. *Lethrinus obsoletus* spawns around new moon every month. In Guam, *Hipposcarus longiceps* work confirmed that this is sex changing and has a max age of 10 years. There was a book that went out looking at the life history variation in parrotfish. Ongoing collection and processing for: *M. grandoculis*, *E. coruscans*, and *C. undulates*. In American Samoa: *S. rubriviolaceus*, *L. xanthochilus*, *L. gibbis*, and *L. rufolineatus*. In Hawaii, *N. unicornis* is an undervalued species. Comparative growth in 5 parrotfish species has been determined, and a bomb radiocarbon was done on blue marlin. Hapuupuu may be longer lived than thought.

Collections and processing are ongoing for a number (~17) of additional species. Recent work on a wide range of species was presented for each of the U.S. Western Pacific territories. Ogawa asked how they select species, and Taylor responded that while somewhat haphazard, they are all commercially/culturally important species, etc. Some of the species for which life history traits are calculated are bought directly from markets (e.g. CNMI).

Historically there has been selective market sampling in Oahu, Hawaii to find life span, growth, sex change, and maturation. Sabater asked if there were any “lessons learned” from this, and Taylor responded that Ed would be the best to ask about the markets.

Fisheries independent sampling research cruises have also been completed in each of the territories.

6.B. Ecosystem research

Erik Franklin was not at the meeting to give his presentation on ecosystem research.

6.C. Socio-economics

Justin Hospital, from PIFSC, presented on the Ocean Synthesis and Human Dimensions (OSHD) program, and associated monitoring, data collection, and existing data tools.

Monitoring programs:

The Economic Monitoring Program conducts the longline trip cost data collection program. Gathers fishing cost information. Approximate response rates is 60% in HI and 40% in AS. NOAA Tech Memo will be released on the methodology. Another data collection is the small boat trip cost data collection in AS, CNMI, and Guam. This is in collaboration with WPacFIN and the territory agency. Response rate is around 45 to 80%. There final results will be released next years via NOAA Tech Memo.

Longline trip cost data collection program (under Pan) starting in 2004 in HI and 2006 in American Samoa. 2,500 trips in HI recorded, though only 100 in American Samoa. The average deep set trip costs about \$27k, with shallow set costing \$50.5k.

The small boat trip cost data collection program is managed by Chan. Fuel, bait, ice, and gear costs are data items gathered. 800-1,200 trips with data in each of the territories.

Fishery performance indicators (from Chan again) involves generating catch, revenue, and the gini coefficient (distribution of fishery revenues) from 2002 to present to help read the “pulse” of the fishery for AS Longline, HI Longline, and HI Deep 7 Bottomfish.

Community social vulnerability indicators determined by following national NMFS framework with broad themes of vulnerability factors, resilience indicators, etc., mostly gleaned from secondary data sources using annual five year summary data (2005 to present). Geography is based on CCD (Census County Division). National index scores allow for the comparison of Hawaii with national communities. For example, Waianae is a medium-high level of fishing reliance relative to other communities in the country. Localized index scores were also generated to help determine how different U.S. Western Pacific communities are relative to one another.

Longline permit ownership analysis allows for understanding the changes in permit ownership over time in Hawaii and American Samoa to improve and refine social and economic performance measures (perhaps can provide allocative foundation for catch shares).

Data collection efforts:

The 2017 Hawaii recreational expenditure survey was conducted with online and mail survey options sent to non-commercial fishers (used Hawaii’s angler registry list and previous survey questions). Results on jobs supported, sale revenue, and value-added benefits generated from just over 1,000 surveys being generated across the State. A large part of the sample population was

private boats, with a good portion given away and consumed at home (~9% sold). Justin said the final analysis will be relating these parameters to the gear type being used.

The 2018 Mariana small boat cost-earning survey is an update to the same survey done in 2011 (currently ongoing in the field). Parameters include fishing activity, market participation vessel characteristics, trip costs, demographics, and annual fishing expenditures.

The 2018 Hawaii pelagic tournament survey will explore the importance economically of fishing tournaments with 20-25 targeted state-wide. The survey will be looking at tournament related expenditures.

The 2019 will see another Hawaii longline cost earnings update to the 2012 survey looking at economic performance, labor and fixed costs, and vessel and operational characteristics. 1/3 of the fleet in 2012 was losing money.

The 2019 dive and snorkel expenditure survey will be a web-based survey modelled after one done in Florida in 2016. The survey will get data on number of trips, drivers of participation, trip expenditures and durable goods, and demographics. The survey will be distributed in a non-probabilistic way, hand out materials to dive shops, and informational post-cards at Hanauma Bay, Oahu, etc.

Ogawa asked about the possibility about a shore-line expenditure survey in the same vein as the rest of these programs, which exist as a goal but likely won't be happening here.

Data tools:

The fishing community snapshot tool was released in August 2017, and provides information about Hawaiian human communities' involvement with local fisheries. The number of commercially-licensed fishers with sale and catch over the past decade can be shown for specific species or taxa groups. The tool exists as a mean to provide these data to communities. Stats on education, employment, other demographics, and relative comparisons to U.S. national average are all also available. Hospital asked the territory representatives if they would be interested in these kinds of interfaces for their areas using the 2010 census data (as this is all that will be available until the 2020 census). He asked for the representatives to speak to him and let him know so the process can get started.

The PIFSC data portal is currently in development to be live by September 2018. This is a pilot project that will ideally be a one-stop shore for key PIFSC data streams in hopes of increasing awareness and accessibility while improving data value with visualization tools. It is an open-source framework. Hawaii fishing trends are available annually 2000 to 2016 by county, island, CCD, and ports and gears (if the summaries are non-confidential). Also, U.S. reports to the RFMO are also available. Hospital then showed a live demo of the online interface.

Lowe asked about gentrification pressure. This is a suite of ~5 variables that covers real estate cost, etc., for the community as a whole. Whole communities are related to fisheries through "fisheries engagement" and "fisheries reliance"; Hospital hopes to have indicators for these in the near future.

6.D. Guam ecosystem research

Terry Donaldson was not at the meeting to give his presentation on Guam ecosystem research.

6.E. Discussions

Discussions took place during and directly after each individual presentation.

6.F. Public comment

There were no public comments.

7. Pacific Islands fisheries research program

7.A. Climate change impacts on the American Samoa coral reef fisheries

Iain Caldwell was not at the meeting to give his presentation on climate change impacts on American Samoa coral reef fisheries.

7.B. Bayesian approach to catch estimation

Sunny Bak-Hospital was not at the meeting to give her presentation on a Bayesian approach to catch estimation.

7.C. Hawaii and Guam fishing community perceptions of the marine protected area siting process and its implications

Chris Hawkins, independent contractor, presented on fishing community perceptions of the marine protected area siting process and its implications (baseline/exploratory study). Project funded by the Council and NMFS to guide development of survey instruments. Hawaii and Guam have been completed thanks to this funding. American Samoa is in progress; hard to get surveys done there without boots on the ground there. Now, it's looking like CNMI might have someone to administer surveys lined up.

MPAs are growing and fishing area is becoming inaccessible, esp. in U.S. Western Pacific. Fishermen feel like they have not been heard and have not properly involved in this management (anecdotally), causing them to be less likely to trust new management, etc. Focus of this project is hard number on these anecdotes. Used framework based on theory of *Procedural Justice* (best social science practice). If something "isn't fair", typically a justice issue, and if it has to do with fisheries, that procedurally-related. Has to do with the fairness of the decision making process (as opposed to distributive justice, which is after the decision made, and about that lead to procedural justice.

Objectives include evaluating fishers' perceptions of fairness of MPAs, evaluating transferred effects due to placement of MPAs (effects down the coast? When you take up someone's fishing

grounds, those fishers impose on other fishers' grounds in turn), evaluating issues of fishermen safety.

Six procedural justice rules when, if followed, less like to have unfair processes in fisheries: representation (all groups?), accuracy info, correctibility of info, consistency (same process across people and time), suppression of bias (i.e. no self-interest), ethicality (moral consistency). Transferred effects include: additional cost, time, fishing in unknown or less productive areas, and new gears needed.

No easy way to develop sample of fishermen, so has to be cobbled together from surveys, licenses, etc. Not representative samples, just hope for certain mix of subgroups in each sample so big subgroups aren't missed in a sample per say. Fishers contacted on site and asked for contact info in Guam; snowball sampling on Oahu instead. Mail and internet surveys were identical and followed the Dillman Method to maximize response rates (pre-letter for survey, first survey, a thank you, a second survey, etc.). Adding human touches, like handwriting, bumps up response rate a little bit for each aspect.

Procedural justice results: The take-away from this is that the authors saw in Oahu and Guam that there consistently wasn't too terribly bad (slightly dissatisfied with most statements, but no hatred; always room for improvement). Guam shown to be "more fair" than Oahu with decision making processes representation. Few extreme answers mostly averaged out to "slightly agree" or "slightly disagree" in representation category. Guam was a little less unhappy than folks on Oahu about MPA decision-making accuracy. Correctibility was mostly neutral, though Guam again slightly more agreeable. Consistency showed similar responses from both HI and Guam with a neutral overall response. Suppression of bias was perceived as poor in Hawaii, but slightly more so in Guam (that decision makers are too beholden to social and political considerations, that public dialogue were more of a formality than effecting change). Ethicality was perceived as slightly better in Guam, etc. Respondents slightly disagreed that safety of fishermen is a concern when establishing an MPA.

Transferred effects results: 67-68% people fish the same with MPAs, 26-27% take fewer or far fewer trips. Preferred fishing locations generally slightly to somewhat limited (highest value being bottomfish restricted areas) in Hawaii, but in Guam it the fishers said they are moderately limited, especially at Piti Bomb Holes. Cross-tab analyses can be done when considering several of these questions. Trips are perceived to be somewhat worse in both locations across aspects (landings, earnings, etc.) at about the same level. MPA location impacts were mostly neutral. Fishers in both locations neutrally/slightly agree that safety has been relatively reduced with respect to fishing in MPAs.

Questions during presentation:

Lowe said a different result is likely from Oahu to Maui, but funding was a constraint. Island-based comparisons are ideal for the future. Snowballing did get a few fishers from other islands. Also asked how do you control for someone filling it out online? Each respondent has a different individual code, so we know if people have filled it out twice, for example.

Tibbatts said he has the history of the process of establishing MPAs, but he wants to see how this compares to hearsay. Hawkins say that is a great next step from this starting point (remember, this isn't any sort of indictment). These are only perceptions, remember. For example, fishers heard the reserves are rotating when this is not the case.

Questions after presentation:

Ogawa asked if there was something that discern there gear types or mode of fishing. Hawkins said yes, because that is useful information for the future cross-tab analyses. The results may be more extreme when looking at particular facets of the fishery instead of overall averages.

Low mentioned issues with sample size paired down to those groups and represented by percentages. Hawkins said with small sample sizes giving extreme answers, likely that we can qualitatively say this is no representative. Need representative sample of the population, or that's the end of it said Lowe. It may affect the process if analyzing unbiased samples.

Hospital thought boat vs. shore was a good analysis to do. Also wants to know if there are some consistently positive or negative people throughout the survey. He also thought that age was interested, as half the population surveyed in Hawaii was under 40, and don't see this as a big issue because they were not directly impacted when the MPAs were originally implemented.

Kahng said he was skeptical with voluntary surveys, esp. because of self-selection and meetings. When things are tied into averages, it depends on what you sampled (washes away lots of info). Was the point to show the average, or uncover stakeholder groups that have strong feelings in one way or another? Hawkins mentioned easiest way to portray this, but Kahng says potentially unrepresentative. Kahng also mentioned community/market composition to determine if certain factions are driving the observed results. Don't segment the community any more than have to though. Hawkins noted that all social science is voluntary, and mentioned sending small subset of questions for non-respondents to use a ground-truthing (see if difference between those that did and didn't respond). Other author is planning on doing this, but hasn't yet. Weighting different cohorts of a sample may be an option as well. Kahng asks about end-game? Is there a critical mass of unhappy people that we are trying to avoid? It only takes a certain amount to effect real change among the masses. Hawkins said this speaks to the value of averaging, smoothing over individual extremes. Goal here was to get quantifications to use over anecdotal data (we have something to point to that we didn't have before). Kahng said Hawkins may be able to use this to quantify how large this community actually is.

Ma asked the response rate again, and noted mostly response was internet response. There are sophisticated ways to keep people from responding twice. 63% total response rate, 65% from internet, and 20% from mail. Ma said response is not as bad as others are saying, as MRIP deals with lower rates, etc. Kahng responded that small part of community could be driving the variance.

Public PIRO Torres said this was driven by public discussion. Said the tepid response was interested, it wasn't all negative. If the same survey were conducted for MPA advocates, should we expect numbers showing perceived fairness? Seems like this is a form of ground-truthing. What is the next step for this kind of study, peer review, etc.? Can other agencies use this data?

Hawkins said this goes to peer review in the near future once the outlet is determined. Depends on agencies' goals if they want to use this data. Are CNMI and American Samoa still on track? Having trouble finding someone on the ground in CNMI (coming down to the wire of project ending in Sept.), whereas AS will be in the near future. Torres remembered in Guam one MPA being sold as a rotating preserve (looked like a bait and switch). What were the comments in the original plan? Can help verify the anecdotes observed?

Tenorio mentioned asking resident fisherman directly next to the MPA to see if the response is overwhelmingly negative. Hawkins says there is an opportunity to modify a couple questions for CNMI esp. if participants can get revised questions to him soon.

Lowe suggested mentioning Oahu instead of Hawaii during results. Hawkins said because of snowball sampling, results included people from different islands. She then asked why only 5 mail surveys? Only five people wanted by mail (save posting and printing). She asked again to clarify how people brought in. Hawkins said fishers they know and their connections were emailed, and they gave their preferences. Lowe reiterated that there is bias in this selection, and Hawkins reiterated that there is no sample frame so there is always going to be *some* bias. All he wants is a sub-group representation. Lowe asked if they were seeking non-commercial fishers, and Hawkins said all were sought. Lowe said that what they did that is very similar to what happens with an MPA to begin with; those involved get more involved, and those that aren't involved feel like they are being left out.

Torres again commented on correctibility. Said it was interesting discussing mechanisms to correct. Hawkins said procedural justice is a process to reduce grumbling, so he appreciates it (though he didn't get into the sub-rules).

7.D. Discussions

Discussions took place during and directly after each individual presentation.

7.E. Public comment

There were no public comments.

8. Marine Recreational Information Program/Territory Science Initiative

8.A. MRIP Regional Implementation Plan

Joshua DeMello, Council staff, stepped in to present here for Sabater. The MRIP Regional Implementation Plan (RIP) is done in other regions of the country (Gulf and Pacific), but we don't have a fisheries commission out here. So, FDCRC-TC is the acting commission for the RIP in the U.S. Western Pacific. How do we get this from a plan on the shelf to getting it going? This is more of a spending plan for recreational data collection, so when we ask for funds for these projects, we can ensure all boxes have been checked in administrative terms.

Are the gaps listed in the RIP still gaps in HI and the territories? Tibbatts says most are still gaps for Guam. Tenorio agrees for CNMI. Mika agrees for American Samoa. Lowe mentioned that

Toby Matthews has conducted an assessment of creel surveys in all territories with recommendations for each.

Ogawa started talking about aerial surveys at some length, before stating that drones are a potentially viable option, though future regulations must be considered (especially on militarized islands such as Guam, etc.); this would potentially address the insufficient spatial coverage. Aerial surveys are restricted by the minimum height in the territories vs. Hawaii.

Ogawa and Ha talked on resource limitation for MRIP reviewed pilot surveys, suggesting a funding issue. If cost is provided, the issue would be alleviated. Lowe says this could cost nearly half a million, while Ogawa said nearly a million. Even so, he noted things that you may want in the future should be in this document, because it may come to fruition sometime later. "Shoot for the stars."

The document being worked on is a living document, so ongoing revisions are needed.

Lowe question what electronic reporting is in #5, and DeMello explained that is can be digital recording. He suggested it would take several hundred thousand dollars. Lowe went on: what will the ground truth of the application be? Perhaps the ground trothing could be a different sort of survey.

Ogawa says MRIP is going towards using tablets over paper in the field, and pushing a lot of pilot surveys on this. There are few drawbacks to using the tablets. After handling fish slime for a while, could become unusable. Solution is using stylus instead.

Andrew Torres, a member of the public and PIRO staff, suggested going over MRIP RIP strategic plan for discussion at meeting tomorrow. He spoke about his development of an education and outreach plan for this goal.

8.B. Description of the certification process

Hongguang Ma, from NOAA Fisheries Service, presented on the certification process for MRIP. It is a three-tiered process: evaluate existing programs, innovate new approaches, and implement the new methods. The MRIP intercept survey had been developed in multiple circumstances nationwide including a pilot study of a new sampling design in South Carolina in 2010. The MRIP effort survey had pilot testing of a two phase mail survey. The mail survey conducted alongside phone survey to have a model to adjust the historical effort estimate from phone data (leads to more consistent data). The 2012 HMFERS review had several recommendations including looking at shore-based hybrid methods for effort, further development of mail survey with boat register, etc. Innovation in Hawaii includes pilot studies and review for intercept and effort survey designs, etc.

The Hawaii-for-hire project from 2009 to 2010 involved reaching out to charter boats at two harbors. It was recommended previously that they report all trips, even no catch trips, from charters.

A survey of registered HI boaters in 2013 included 3,000 individuals with >70% having fished at least once from a boat in the last year. The response rate was 42%.

Shore-fishing pilot surveys on Oahu in 2015 included roving, aerial, and mail surveys. The data priority was fishing gear counts and catch in both daytime/nighttime hours.

Boat-fishing pilot surveys on Oahu in 2016 included access point surveys, temporal stratification, and time blocks. These results have been published in a paper in *Fisheries Research*.

Recommendations from the pilot studies included discontinuing the aerial survey, using the mail survey as an independent measure (with its potentially broad coverage), and defining a common domain shared between data from a roving survey with other surveys for total fishing effort estimation.

Recommendations for certification and implementation included implementing a fixed time block sampling design for private boats and for next steps to hold a workshop to discuss survey options for implementation in HMFRS.

8.C. Discussion on the preparation for the MRIP RIP implementation

All discussion on the MRIP RIP has been listed above.

8.D. Future of the Territory Science Initiative

Sabater briefly talked on the future of the TSI, having previously mentioned updates to both the MRIP and TSI.

8.E. Public Comment

There were no public comments.

Thursday, May 3, 2018

9:30 a.m. – 12:00 p.m.

9. Management Unit Species and Ecosystem Component Monitoring

9.A. Need for monitoring changes

Sabater led the discussion on the need for monitoring changes with respect to Management Unit Species versus Ecosystem Component Species. There is only territory bottomfish in the MUS now with the passing of the ECS, with two avenues to pursue. 1) Permitting and reporting, which would require development of rules and regulations associated, and would need discussions to identify regulatory gaps in each jurisdiction. 2) Shorter-term, try to improve on what we have. What we have is the commercial receipt book and the creel surveys on the territory side. With ACLs, we need some sort of near real time evaluation of catch. APT thinks commercial receipts are the way to go because creel data should only be evaluated annually. Sabater wants to identify, by territory necessary steps to achieve these two goals. This will support long term goals to collect data for management and regulations that need to be put in place. We will go by jurisdiction.

1) Data Gaps?

CNMI: What do we need to do to address the regulatory gaps and get us where we need to be? Tenorio said there are some laws in place, but the regulations for mandatory data collection have not been put in place. On top of they are currently trying to work on the same process for size regulations despite there being no law for size. Perhaps support in the form of a legal or policy person to follow through with the process invested in pushing it through, so CNMI staff don't have to juggle with other priorities. Give fishers time to get used to regulations so it can be done without any "force"; work with them instead of against them. (Public law requires reporting, but no provisions for licenses, no penalties, etc.; these can be included in regulation even though not specified in the law). Lowe asked if there is a board that gives administrative rulemaking abilities to the Department with a specified process after the legislature. Tenorio says it's not that organized in CNMI, just about following through and tapping the specific people that are in the know for the topic; there is no real administrative process to get rules in place or get info to public other than public hearings. The Council could analyze the process and see how they best fit into it, said Lowe. Tenorio used size restriction stuff as an example: they sat down with AP members after pushing it through to explain what/why, as well as get input from both sides (there are however many regulations that need help). Lowe said specific language for enforcement is important. Ogawa asked if the Council has a "legal fellow", and Sabater said that we only have NOAA general counsel for Council needs. There's no necessarily anyone who can become familiar with territory regulation and laws, and Council staffs have been known to do this in the past since they are in charge of amendments for their section of the FEP. The Council would need to source out for this position. Tenorio said they should have a legal person but doesn't for some reason. An understanding of natural resources and conservation may be very helpful in considering this. Lowe said a big step forward would be implementing mandatory reporting and forming relationships with other natural resource agencies that can support that. Ogawa says public outreach is important in considering this; could enforcement officers be involved in this process? They can likely ground-truth some stuff. Lowe suggested a "soft opening" for this kind of rule change.

Guam: Tibbatts said it's the same as there is no mandatory anything, so commercial sale reporting would be beneficial. If a law is passed, the rules can be created under that. But this goes by Senators and AG offices, making it a difficult process. Rules and regulations for non-fishing use in the MPAs were done and have gotten stuck in the AG office for 12 years. No legal person to push this through has made issue worse. Sometimes grants offered for lawyers to push through, but they get bogged down in other issues. Someone invested in DAR would be especially useful. Two years ago, a senator passed a law where there is now an indigenous fishing rights council, and these guys can definitely change rules and regulations (DAR has a non-voting seat on this Council, but can't change anything without the Council). Not all seats have been filled yet, and the Council has not convened. Sabater said might as well explore all avenues for reporting requirements and not just focus on vendor sale, if such an effort is already going to be undertaken. Without the Council in place, what is the current process? DAR staff meet and discuss changes that they want to see/propose. This goes to division chief, who brings it to natural resource senator, and then if there are any public hearing changes, goes to AG for review and signature by governor (Dept. of Ag. Administrative rule rather than overarching law through this process). Guam also does public hearings for rules being proposed. With new rule in place, the indigenous council will be the ones to discuss and send off their recommendations to

the division chief. Sabater considered that a potential solution was knowing who the fishers are through licensing and what they catch through reporting, but if indigenous people are exempt then what is the point of collecting the data since there will be a large skew? Lowe said it is just about following the process because a special consideration doesn't mean that they don't have to report (Ogawa suggested waiving fees or something similar). Ogawa asked how to prove indigenous? Tibbatts said there is no legal definition (except if you lived on Guam in 1950, they and their descendants are indigenous regardless of ethnicity).

American Samoa: Licensing requirements for commercial, but no mandatory reporting requirements said Sabater. Is there interest in incorporating mandatory reporting? Mika says yes, as they are missing a portion of catch survey since they don't have business licenses and not ALL catch is sold to the vendors surveyed (no receipt book for non-commercial sale). If commercial fishermen given business licenses, could be better tracked. Quach said business license is for store, if you're a fisherman selling at the market you don't need a business license (but vendors do). Dept. of Health there says that they can't sell illegally, so how could we go about legally survey? Worried more about freshness and safety of non-commercial fish sold. Mika just wants a way to report the noncommercial fish sold (missing from vendor records). They have fishing license though, just not issued commercial receipts (unless business license owned). Only get dealer receipt book if you have the business license and not fishing license. Sabater says if you have intent to sell, have to fill out logbook. Lowe says if you ask them to report catch over sales, then you have vendors giving data on purchase program with fishers reporting overall haul (good way to QC the data, can be crosschecked between shops and such). Quach reiterated this point. Lowe mentioned extra staff needed with the additional data streams. Is there political will to impose something like this? Mika says that she would get back to Sabater, who can recommend to policy level group meeting in October.

Hawaii: Quach said the commercial sector has been well captured, maybe except for non-deep 7 bottomfish. Dealer reporting on a monthly basis helps a lot, but many dealers aren't reporting at all (esp. from markets selling a lot of reef fish). Ogawa mentioned Facebook gap. Low said no dealer reporting mandated (no penalty if they don't), but if they started punishing then it would ruin the established relationship with the officers/dealers. Sabater said there are no plans for this. Smaller dealers may not go for it, so need to incentivize things for them (can develop and provide something that would help with their bookkeeping for instance, and would help get us information as well). Not just "you need to do this", but "how can we best help you achieve this". Sabater said Council does not want to inter in this process in any sort of negative manner with how relatively well they have done so far. Quach said that just dealer data won't cut it going forward, you need to have something to verify who caught what fish and where.

- 2) How can we further improve what we have? Sabater's focus here was on near real time reporting of commercial receipt book data, as well as TSI and how much money everyone may need to service data collection goals.

Quach said a unified, integrated database with cloud services is necessary because codes are changing constantly for fishermen, etc., with different databases and agencies working on this simultaneously. The MRIP guys are looking at using TSN (i.e. taxonomic species number) species codes, which is standardized. Can this data be linked to species from each territory, asked Ogawa? Lowe said this is occurring at the moment. Sabater said this may require Council staff to

work one week in each spot to address everything. Sabater noted to “renew Christine’s position and support the production of the receipt book”

Tenorio stated that there are other vendors that need to be covered (esp. for new stores and restaurants). 20 total restaurants, getting hotels more involved, and the market. CNMI needs to reach out to them from their side. Tenorio said there are two to four staff for the commercial receipt book tasks and follow-ups. Trying to get one person to become dedicated to go over and over to vendors; there is an interest specifically for this. There isn’t one dedicated person because it’s not like every day there is a receipt book to collect.

Problem with timeliness of reporting on Guam has to do with food stamps in first few weeks of the month causing them to have their busiest times. Hospital asked if commercial data vs. snap data is analyzed, but Tibbatts said this isn’t done regularly. Snap folks don’t have a database for any of this, send data through scanned papers. However, people are uncertain if this could be a viable data source or not.

9.B. Discussion on potential changes in the data collection system

All associated discussion was summarized above in 9.A.

9.C. Discussion on potential changes to the database and reporting

All associated discussion was summarized above in 9.A.

9.D. Discussion on potential funding to support the data collection changes

All associated discussion was summarized above in 9.A.

9.E. Discussion on potential legislative support for data collection changes

All associated discussion was summarized above in 9.A.

9.F. Public comment

There were no public comments.

10. General discussions

There was no other discussion.

11. Other business

There was no other business.

12. FDCRC-TC recommendations

The FDCRC-TC recommends the Council direct staff to work with PIRO Federal Programs Office to investigate potential mechanisms to improve the territory/state agencies ability to address logistic issues with data collection.

The FDCRC-TC recommends the Council direct staff to convene the MRIP ad-hoc Committee to finalize the planning for the implementation of activities described in the MRIP Regional Implementation Plan.

The FDCRC-TC recommends the Council direct staff to work with the territory fishery agencies in developing collaborative working arrangements to improve Commercial Receipt Books so as to meet the requirements of ACL management.

The FDCRC-TC recommends the Council direct staff to work with a contractor and coordinate with WPacFIN in the planning and development of an online cloud database and/or application to support the planned improvements Commercial Receipt Book system. Such an application will cater to data collection needs under the Territory Science Initiative project and the local agency's data programs.

The FDCRC-TC recommends the Council direct staff to work with the territory fishery agencies to analyze their regulatory process and support the development of a rule package for the agency's consideration to attain licensing/permit and reporting.

PAU
