



Fishery Ecosystem Plan Team Meeting

January 23, 2020

1:00 p.m. – 5:00 p.m.

Council Office Conference Room

Honolulu, Hawaii

Draft Report

1. Welcome and introductions

Stefanie Dukes, Western Pacific Fisheries Information Network (WPacFIN), opened the meeting at 1:00pm and welcomed meeting participants. Stefanie Dukes, Frank Parrish, Joseph O'Malley, Minling Pan, Tom Oliver, Ivor Williams, Reka Domokos-Boyer, Kirsten Leong, Felipe Carvalho, Brett Schumacher, Sam Kahng, T. Todd Jones, Melanie Hutchinson, Paul Murakawa, Domingo Ochavillo, Tepora Lavatai, Yvonne Mika, Trey Dunn, Frank Villagomez, Jude Lizama, Mike Tenorio, Tom Flores, Brent Tibbatts, Felix Reyes, Thomas Remington

2. Approval of draft agenda & assignment of rapporteurs

The draft agenda was approved and rapporteurs (Sabater and Remington) were assigned.

3. Interim Measure for the American Samoa Bottomfish Fishery

Brett Schumacher, Pacific Islands Regional Office (PIRO) presented on the interim measure for the American Samoa fishery for Bottomfish Management Unit Species (BMUS). The 2019 stock assessment for American Samoa BMUS determined B_{MSY} to be 272,800 lbs. and biomass in 2017 to be 102,600 lbs., so the stock is considered overfished and to be experiencing overfishing. The Pacific Island Fisheries Science Center (PIFSC) informed PIRO that the assessment was established as Best Scientific Information Available (BSIA) as of January 10, 2020. The PIRO Sustainable Fisheries Division (SFD) has been tasked with developing a memo on status determination before the National Marine Fisheries Service (NMFS) sends a letter of notification to the Western Pacific Regional Fishery Management Council (the Council); this will start the time table on the Council developing a rebuilding plan for the fishery under the Magnuson-Stevens Act (MSA) 304(i), and will likely happen in February 2020. The Council will need to work to end overfishing immediately and implement a rebuilding plan within two years.

In the short term, interim measures can be implemented if three requirements are met: if there was an unanticipated change to stock status, if immediately ending overfishing would result in severe economic or social impacts, and if biomass is ensured to increase. As of now, the requested measures are to include an Annual Catch Limit (ACL) for 2020 and reduce overfishing while increasing biomass, which is intended to mitigate cultural, social, and economic impacts in American Samoa. An interim measure can only be in place for 180 days from its implementation, but the measure may be renewed for additional 186 days while Council is working on the long-term rebuilding plan. This is a Secretarial Action that runs through a separate process that does not need additional Council action nor P* or SEEM analyses for 2020.

PIFSC catch projections show that zero catch would allow maximum increase of biomass (15.6%) with a 0% chance of overfishing, and that biomass begins decreasing at a catch of 13,500 lbs. The ideal target catch would then be 13,000 lbs. for 2020 with a 74% chance of overfishing. Implementing an interim measure such as this allows for a phase-in approach, as the new ACL as determined by the 2019 stock assessment would have been 8,000 lbs. if implemented. The BMUS catch for 2018 was 12,242 lbs. for the BMUS, and catches from 2014-2017 ranged from 15,913 to 29,511 lbs. To reach 13,000 lbs., a 19 to 34% reduction from 3- and 5-year average catches (not including catch data from 2018) would be needed.

Potential management options to meet the Council's request for an interim measure include closure of federal waters, both spatial as well as seasonal. Regarding spatial closures, there are not detailed data on where catch comes from, but using BMUS Essential Fish Habitat (EFH) in federal versus territorial waters showed that only a small amount of BMUS fishing area would be closed (i.e., only 16% of EFH is in federal waters). Because a 34% reduction in catch is needed and the closure assumes no fishing effort would be displaced to territorial waters, closure of federal waters would be unlikely to meet target levels. It is estimated that closure of federal waters would reduce catch from 19,000 lbs. (recent average catch) to approximately 16,000 lbs. Cooperation from the American Samoa Department of Marine and Wildlife Resources (DMWR) would be required to close territory waters in unison possibly reduce catch below 13,000 lbs.

In-season monitoring to better track the progress of the fishery over the course of the year would also be needed. Creel survey data may be more indicative than commercial data of what is really happening in the fishery, but they are not available until months after year end because they are expanded and summarized on an annual basis. If the reporting frequency of creel survey data could be increased, perhaps the data could be used to track when a closure of federal and territory waters might need to take place.

Plan Team members discussed that the 13,000 lbs. described is the number provided to Council request for a level that would increase biomass though not end overfishing, as it would be the maximum value that could be caught before a projected biomass decrease. The 8,000 lb.-threshold is associated with a 50% risk of overfishing and comes from the 2019 stock assessment. The interim measure could be in place for a year, slowly transitioning to the lower required catch level to not reduce the catch to 8,000 lbs. immediately.

While it would be ideal for creel survey data to be fast-tracked to give a better representation of total catch over the course of the year, it is not feasible to have it done on a monthly basis. Creel surveys do not capture many trips, so expanding on a monthly basis may not create a good representation of the fishery. Because the Western Pacific Fishery Information Network (WPacFIN) usually gets creel survey data with a 2- to 3-month delay, perhaps a 4-month creel summary can be explored going forward. Fishermen self-reporting would also be viable, but the electronic self-reporting application is not ready for deployment in the near future.

Plan Team members also discussed the viability of a time-based closure, but it was not clear if landings have a strong seasonal basis because monthly averages have not been heavily explored. Seasonal closures could be a good option to minimize impacts to the community if NMFS and the American Samoa government work together. However, seasonality associated with BMUS' cultural importance in American Samoa is largely undocumented.

Plan Team members noted that they have no way of knowing whether fishers are catching bottomfish in federal waters since BMUS are primarily harvested within a small boat fishery. The American Samoa DMWR database is not currently set up to specify landings by

site, but the fishermen sometimes list their fishing areas during interviews. The fishermen do not typically stay at one site either, however the American Samoa DMWR believes that most activity is within territorial waters. Representatives from American Samoa DMWR noted that said there needs to be official communication to request the sort of collaboration that would allow joint closures; NMFS does not have any official communication generated for this collaboration but it could potentially be initiated in the near future.

There was some worry among Plan Team members about recommending a closure of federal waters if it is known it will not create a large impact and be mostly symbolic. Additionally, such a closure could appear as NMFS imposing federal will and harming the growing relationship with the American Samoa government. American Samoa DMWR agreed that the closure would impede co-management in the future, and that fishermen outreach should have been done well in advance of the decision for an interim measure. While NMFS would like to collaborate on management and understands the importance of the relationship, MSA requires action to immediately end overfishing due to the nature of the fishery. Plan Team members noted that the most effective immediate action may be to close federal waters for a reduction of approximately 16%, but also agreed that the reduction may be much less than 16% and could set a bad precedent for co-management with the American Samoa government in the long-term.

With regards to recommendations to the Council, it is reasonable for the Plan Team to suggest that there are no measures that would affect the fishery much from a biological perspective. Because federal closure it is the only current conceivable action to work towards achieving a well-managed fishery under MSA, it would not necessarily be characterized as the best possible option but the only current option. Another important recommendation will be the initiation of formal channels to begin discussion on co-management between NMFS and American Samoa.

Plan Team members noted that it will be interesting to see the response in American Samoa to the closure of federal waters, and fast-tracking fishery monitoring would be one way to learn as much as possible about how community will respond. American Samoa DMWR noted that they understood the time constraints for the interim measure and believed it would be best to move forward with the recommendation for federal water closure while also improving communication with the local government as a first step towards appropriate outreach.

4. Potential reclassification of the Territory BMUS Complex

Felipe Carvalho, PIFSC Stock Assessment Program (SAP), presented on potential regrouping of the Territory BMUS Complexes. In the wake of the 2019 stock assessments, the Council recommended that BMUS lists be revisited for assessment as smaller groups and/or individual species, but there are many options on how to split the BMUS groups. The objectives of PIFSC SAP were to develop alternative groupings based on biological and fishery data available for the included species and evaluate the feasibility of conducting stock assessments on the new groupings while considering fisherman knowledge and managers' abilities to manage the fisheries; this presentation focused only on the available data.

The first goal was to conduct an inventory of biological and fishery data. Stock assessments use available abundance, biology, catch, and length data. Biological data came from the life history program and scientific literature, whereas other information were collected in the creel surveys and biosampling program.

The second goal was to develop potential groups for reclassifying the BMUS. One example option was using two groups, deep-water snappers and all remaining species as individuals. The single species would be assessed using the LBSPR method, and the deep-water snappers could be grouped for a higher-level assessment with something like a surplus-production model. Pros for this option included improving life history parameters and better reflecting catch composition for both groups; cons for this option included that deep snappers still have different life history parameters and that one of the jacks in the BMUS matched well with deep-water snappers. Another example alternative was to have single species for all BMUS and assess them using LBSPR individually. Pros included life history matching not being an issue and not needing to worry about catch composition; cons included that some species are in fact caught together.

The third goal was to evaluate the feasibility of conducting stock assessments with the new groups. For example, for the first group presented (deep-water BMUS and all other species), there is only one model option for deep-water snappers (i.e., surplus-production), whereas there are many for single species (e.g., LBSPR); however, there are very little data for single species. If multiple models need to be implemented, more staff and time would be needed to develop the stock assessments. Improvements to data in coming years are not expected, and the PIFSC SAP can only tell how the assessment may play out with available data when it is initiated.

With regards to practicality, running six models instead of one would not be exactly six times more work if using the same modeling approach. However, deciding the final model has to do with data diagnostics, and there are a lot of aspects of the model that may need to be adjusted even when using the same model. PIFSC SAP did not have a preference between the presented alternative groupings and noted that there are other options; no decisions have been made.

With regards to life history studies that would be used in the LBSPR approach, a lot of the information would be borrowed from other areas where studies exist. For many species, these parameters vary across the Pacific and within archipelagos, and the parameters are often associated with exploitation history. Length-based approaches also do not capture history of exploitation because age and length can become de-coupled in highly exploited areas; this is one of the main reasons that data-limited approaches were so highly considered. Without length models, there could legitimately be no method to produce stock assessments for BMUS species. The amount of available data matters in deciding groups and separating the snappers from other species could help mitigate concern associated with the lack of data. A stepwise approach, rather than borrowing, may be better, but neither are ideal.

For CNMI, where there are not a lot of data, there are still enough data to develop assessments, but uncertainty intervals may be relatively large. It was noted that with whatever data is decided to be used, there will be issues present. For American Samoa, despite having a relative wealth of data, certain species still lack sufficient levels of information. *Pristipomoides filamentosus* and *P. flavipinnis*, for example, are a bit shallower than deep-water species, so it is not clear to the managers as to why they are not frequently present in the catch records.

5. Options to the BMUS in the American Samoa and Marianas Fishery Ecosystem Plan (Action Item)

Council staff presented on options for refining the BMUS complexes in the American Samoa and Mariana Archipelago fishery ecosystem plans (FEPs). The BMUS fisheries are

mostly dominated by small boats doing single-day trips fishing near to the island with relatively lower participation when compared to historical levels. Fishery participants typically fish either shallow- or deep- BMUS exclusively, especially because shallow-BMUS are relatively more accessible to shore-based fishers. Conversely, the commercial market typically has focused on deep-water BMUS. Currently, within the FEPs, control rules are applied to individual species when possible, but can also be applied to indicator species representative of the complex. The current need was to revisit the composition of the BMUS complexes such that they remain representative of the fisheries for future stock assessments. The options were as follows:

- 1) Keep BMUS complexes as they are currently (status quo). This would keep the recent stock assessments as BSIA until 2025.
- 2) Do not amend the FEPs but generate a new benchmark stock assessment. Flexibility in the language of the FEPs in how to apply control rules would allow PIFSC SAP to apply appropriate status determination criteria based on available data for the new BMUS groupings. Territory agencies and communities would be consulted to define the data that should go into the new benchmark assessment through data preparatory workshops.
- 3) Amend the FEPs now and generate a new benchmark assessment once the amendment is approved. This would establish subsectors of the BMUS fisheries. Flexibility will be lost on how to apply the control rule as status determination criteria would be pre-defined.

From the perspective of PIFSC SAP, they did not want to lose flexibility. There are a lot of opportunities to analyze the data available, and the freedom to determine methodology applied is important. For this reason, they thought that Option 2 may be the best way forward. Option 3 would prohibit the PIFSC SAP in how they could proceed with future stock assessments.

In Option 3, the data workshops would include discussions with fishermen, but there will not be opportunities to alter the groupings at that time. American Samoa representatives believed that changes to the BMUS complex should still be considered because there was no tangible outreach to the fishers as to how the complexes should be aligned. However, no species would be considered for additional or removal though in any of the Options, they would only be rearranged to be more reflective of the fishery. Species to be added or removed would have to be a separate amendment because the fishery would effectively be redefined.

There were questions as to how the complex would be managed with regroupings, but these issues would be included in the underlying work that would need to be done on the management side. In some ways, retaining a group ACL makes more sense than individual ACLs (e.g., in the case of individual species overages and “choke” species). Grouping reconsiderations have been based on biology, but catch composition needs to be considered as well.

The Plan Team had consensus that Option 2 was the best of the three since it allows for the groupings to be further explored prior to the next stock assessment. There would be an agreement between PIFSC and Council leaders for initiating new benchmarks without waiting the typical five years for a new one. Guam and CNMI representatives supported Option 2, while American Samoa representatives supported Option 2 and Option 3 (without clarification).

CNMI representatives had initial reservations on Option 2 because they had additional suggestions for the current groupings to assess all shallow species together but assess deep-water species individually. There is no set grouping scenario for any of the territories currently, however, and all territories would have the chance to give their opinions if regrouping does occur under Option 2 whereas Option 3 would not allow this flexibility. It was clarified that changing

the groupings in Option 2 would not generate an FEP amendment, and that a determination as to how well a grouping may work cannot be done immediately but will be done when the stock assessment is initiated. Changing the species composition in its entirety (i.e., adding/removing species) would be a separate action that would generate a separate amendment.

6. Revisions to the Archipelagic Stock Assessment and Fishery Evaluation (SAFE) Reports

A. Fishery Performance Modules

Thomas Remington, Council contractor, presented on revisions to the Archipelagic Stock Assessment and Fishery Evaluation (SAFE) Reports associated with the recent Ecosystem Components (EC) Amendment to the FEPs. Generally, references to shore-based creel surveys and Coral Reef Ecosystem Management Unit Species (CREMUS) were removed to allow for a greater focus on BMUS species, text on EC species was inserted, and the territory data streams derived from Visual Fox Pro (VFP) would be accompanied data from R for the 2019 reports.

For the fishery performance chapter, the importance of Territory agency staff and DAR to include descriptions of changes to their fisheries on an annual basis was emphasized. Sections associated with CREMUS were either removed or altered to reflect EC fisheries in the associated region. All Archipelagic reports will have tables inserted with time series for prioritized species identified by local agency staff as well as a one-year snapshot of the top ten harvested species.

For the ecosystem considerations chapter, there was brief discussion on the future of the Coral Reef Ecosystem Parameters section, which Ivor Williams noted he would be able to complete this year before passing them off to NMFS staff for following iterations. The socioeconomic sections would be shortened due to the removal of CREMUS, and Minling Pan briefly discussed the possibility of having a table displaying pounds sold for EC species. Additionally, the uncertainty of the Hawaii Marine Recreational Fishing Survey (HMFRS) section in the Hawaii report and the need for Plan Team authors for the EFH and Marine Planning sections of all reports were discussed.

There were concerns among Plan Team members that the more shore-associated BMUS would have data cut removed that were normally available from the shore-based surveys, however BMUS species are primarily found in boat-based surveys and federal support for the shore-based surveys is planned to be majorly reduced in the coming years.

B. Ecosystem Component Monitoring

Council staff presented on the intent to reach a final decision on how the Plan Team would want monitoring of EC species to look in the Annual SAFE Reports going forward. The idea was to transition from reporting catch on an annual basis to ecosystem monitoring to better implement Ecosystem-Based Fisheries Management (EBFM). The Plan Team had previously considered monitoring functional groups, families, consumer groups, and trophic groups, of which approximately six to twelve indicators would be ideal. There was preference for trophic groups being an indicator using fish biomass, though many individual species did not have sufficient data for this type of reporting. It was noted that consumer groups also had data that could be used. There was discussion on what is worth putting in the reports, and what

information is needed to make good decisions for the Territories and Hawaii, keeping in mind that species that they want to be monitored individually will still have their data reported.

7. P-star and SEEM Analysis for the Marianas Bottomfish Fishery

Council staff announced that they would be in the Mariana Archipelago the week following the Plan Team meeting (i.e., late January to early February 2020) to go through the P* and SEEM process for ACLs from 2021 onwards for Marianas fisheries. The Council will be taking action on these ACLs in March 2020. Members from the fishing community will need to give input on susceptibility measures. The American Samoa trip is tentatively scheduled for the second week of February, and official communications are being developed in preparation for that trip.

8. Updates to the Data Collection Projects

A. Marianas Shark Depredation

Socioeconomic context for fisher-shark interactions in the Marianas Archipelago was presented by Mia Iwane. This work is being done because fishers in Guam and CNMI have described an increasing frequency and impact of shark interactions in their fisheries. The primary research questions involved how sharks are impacting the fisheries, how the interactions are changing through time, and the possible options to mitigate the interactions. Additionally, there were research questions on perceptions of how the shark populations vary, how stakeholders are related to one another, and possible mitigation strategies. Data were primarily been collected through interviews in Guam and CNMI as well as fisher-organized meetings and other miscellaneous fieldwork; data collection focused on fishers, researchers, politicians, and fish buyers. Currently, data are being analyzed, and results will be reported in the Spring of 2020.

Emerging themes in the data showed that fishers have been losing gear, catch, and time to shark depredation. Fishers have been avoiding areas known to have higher chance of shark interaction, causing them to fish in far away areas and move more frequently during trips. Participation has been impacted due to challenging economic conditions coupled with higher interactions. Some fishers suggest that there have been more shark interactions because they have become more responsive to fishing. This could be due to a decreasing reef fish abundance, increase of shark protection policies, oceanographic/climatic changes, and increasing participation in fishing.

Options to mitigate impacts included clarifying local and federal laws regarding what fishers can do with sharks. There are opportunities for research on why shark interactions have appeared to increase, how sharks move through the area, shark biomass, and new shark deterrents. Fishers suggested that perhaps a candidate species for sustainable harvest could be identified.

Sample size, while having relatively good coverage, could be improved, especially for commercial fishers. Many interviews were done with migrant fishing communities, possibly skewing the responses. Fishers' schedules make it difficult to gather large amounts of data.

The species of sharks involved were not exactly known, but research is ongoing to train fishers to determine what species they are (e.g., research by Carl Meyers). It would be helpful to know if the sharks are primarily inshore or pelagic species, but there has been no sign in the

available CRED or underwater video data that shark biomass has been increasing in either category.

B. Small Boat Electronic Reporting

Council staff presented an update on the current state of the small boat electronic reporting application in place of Spencer Toyama. There are three separate applications to track the fishing supply chain: for fishers, for vendors, and for administration of the data. This application only operates in association with mandatory fishing licensing and reporting, as license number is tied to individual username within the application.

The application for fishers has a fisher report with depart and return areas and times, vessel information, crew information, fishing method, target species, fishing hours, fish caught, measured weight, and location. Additionally, there are inputs for sales information including pieces sold, price per pound, and vendor license number. The vendor application has inputs for the fisher license purchased from, number of fish, total pounds, and price per pound. The administrative application shows the aggregation of fisher and vendor reports.

Current improvements included refining the available methods of fishing and associated measurement of effort (including number gears, divers, spears, etc.). Other changes included streamlining what information needs to be gathered from the fishers and vendors and improving report filtering on the administrative side. Local, common, and scientific names were added. Backlogs to address included remediation of workflow for vendors and improving test coverage. Adding a trip identification number is out of scope for the application but may be added later. There were issues noted if a user deletes their profile and attempts to recreate one in the future.

Potential problems going forward included that some fishermen use logbooks as a landing report and not a catch report, and it will be important to emphasize that this application is a full catch report. Another potential issue raised by Plan Team members for reporting would be having several fishermen going out on a single trip and then splitting the catch. If each fisher has the application, they can each report their portion of the catch individually since each of them would legally be required to possess a commercial permit. Discussions are ongoing on where this data stream would lead, but it would likely be facilitated by WPacFIN.

9. Public Comment

There was no public comment.

10. Other Business

There was no other business

Plan Team Discussion and Recommendations

Discussions took place immediately after each presentation.

While revising the wording of the recommendations, American Samoa representatives mentioned the need for education and outreach to local fishermen. Additionally, they asked what

the implications would be for increased data resolution (i.e., improvements) over the last five years considering that stock assessments that implement the entirety of the time series.

The Plan Team expressed the need to work on the current species groupings between now and the April 2020 Plan Team meeting, and also noted that current species that are experiencing overfishing cannot be removed from the listings until they are determined not to be experiencing overfishing. The Plan Team discussed the need to have a better understanding on what the Territories want in terms of BMUS complex reorganization. There were misunderstandings during the meeting about regrouping the current lists as opposed to altering the lists entirely, each of which would have very different processes and outcomes.

Regarding the Interim Measure for American Samoa bottomfish fishery, the Archipelagic Plan team

- 1. recommends the Council request NMFS to immediately communicate the potential management options with DMWR to address the overfishing and overfished issues in the bottomfish fishery;***
- 2. to meet the federal mandates, requests the Council to recommend a prohibition on fishing for BMUS in Federal waters to provide time for NMFS and the Council to work with DMWR to develop a rebuilding plan that can effectively end overfishing and rebuild the stock. The Archipelagic Plan Team recognizes that a unilateral closure of federal waters would be unlikely to reduce fishing mortality to a level that would ensure biomass increases during the interim measure.***

Regarding longer term management of the American Samoa Bottomfish Fishery, the APT

- 3. recognizes that majority of the bottomfish fishery likely occurs in Territorial water. The Archipelagic Plan Team recommends the Council work with PIRO and DMWR to develop a plan for collaborative management of the bottomfish fishery.***
- 4. recommends the Council, in collaboration with NMFS and DMWR, explore the feasibility using a temporal-spatial closure approach as a longer term measure to reduce the fishing effort and catch to prevent overfishing and rebuild the stock;***

Regarding the groupings of the existing Bottomfish Management Unit Species, the Archipelagic Plan Team recommends the Council select option 2 that retains the flexibility in the application of the control rules to the management unit species. Further, the Archipelagic Plan Team recommends the Council request NMFS-PIFSC to initiate the development of a new benchmark assessment on a species resolution that is deemed appropriate during the data preparation workshop and apply the appropriate status determination criteria for the assessment to be WPSAR reviewed the soonest time practicable.

Regarding education and outreach, the Archipelagic Plan Team recommends the Council work with NMFS and Territory agencies on conducting outreach efforts on data collection and management of the bottomfish fishery.

Regarding the review of the Bottomfish Management Unit Species list, the Archipelagic Plan Team recommends the Council work with NMFS and Territory agencies to review the BMUS list and to discuss the available options and the regulatory consequences of add and removing species from the list.

The meeting adjourned at 6:10pm.