WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

Pelagic Fishery Ecosystem Plan Team Meeting

May 6-8, 2020
1:00 p.m. – 5:00 p.m.
WebEX Conference
Honolulu, Hawaii

Draft Report

1. Welcome and Introductions

Donald Kobayashi, chair, welcomed participants to the 2020 Pelagic Fishery Ecosystem Plan Team (Plan Team) meeting of the Western Pacific Regional Fishery Management Council (Council). Members present by WebEX conference were Reginald Kokubun, Felipe Carvalho, Stefanie Dukes, William Dunn, Michael Quach, Michael Fujimoto, Emily Crigler, Melanie Hutchinson, Russell Ito, T. Todd Jones, Sean Felise (Day 1 only), Joshua Lee, Kirsten Leong, Michael Kinney, Minling Pan, Brent Tibbatts, Phoebe Woodworth-Jefcoats, and Keith Bigelow. Ashley Tomita was excused. Council staff present were Mark Fitchett, Asuka Ishizaki, and Josh DeMello. Other meeting participants included Domingo Ochavillo, David O'Brien, Thomas Flores, Tino Aguon, Michael Parke, Michelle McGregor, Thomas Remington, Justin Hospital, Rob Ahrens, Eric Kingma, and Theresa Labriola.

2. Approval of Draft Agenda and 2018 Report

The draft agenda for the meeting was approved with the agenda item 3.A(vii), Administrative and Regulatory Actions and an item 9.D, Other past, present, or future Council Actions.

Council staff reviewed progress on recommendations from the 2019 Plan Team meeting.

3. Review 2019 Annual Stock Assessment and Fishery Evaluation Report Modules

A. Fishery Data Modules

i. American Samoa

Domingo Ochavillo, Department of Marine and Wildlife Resources (DMWR), presented updates to the fishery data module for American Samoa in the 2019 annual Stock Assessment and Fishery Evaluation (SAFE). The number of boats longlining increased in 2019 amid a general declining trend. Trolling has been declining since 2014, which may be associated with the American Samoa Government fuel subsidy program. Landings for tuna and non-tuna pelagic management unit species (PMUS), albacore tuna landings, and longline hooks set were at an all-time low in 2019. The decrease in commercial landings may have been due to changes in fish distribution. Landings of bigeye tuna continued to decline from 2010 through 2019. Trolling catch rate increased from 2017 through 2019 despite trolling hours decreasing since over the same period. No bycatch in the troll fishery was recorded in 2019, and bycatch in the longline fishery was limited to releases of 3.2% of yellowfin tuna, 3.0% of bigeye tuna, and 100% of sharks and oilfish.

A Plan Team member noted that the downward trends in many statistics may be discouraging, but the stable and increasing catch rates are promising. Plan Team members wondered if the increased catch rate for skipjack in 2019 skipjack was associated with new fishers in the fishery, as catch

rates for skipjack and yellowfin tuna harvested by trolling have followed one another closely in the past. Ochavillo explained that's since the number of trolling boats has continuously declined, \ new fishers joining the troll fishery seems unlikely. However, Sean Felise, DMWR, noted the possibility that a few additional boats in the troll fishery were active as fishers have been able to perform repairs to get them operational over the past couple years.

ii. CNMI

William Dunn, Department of Fish and Wildlife (DFW), presented updates to the fishery data module for CNMI in the 2019 annual SAFE report. Fewer boat-based creel surveys were performed in 2019 than previous years because surveys were not performed in July through September due to funding issues. The first charter boat intercepted in several years was surveyed in 2019, and several interviews were conducted. Landings in 2019 were mostly comprised of skipjack, mahimahi, and yellowfin tuna, which overtook "miscellaneous tuna" due to a large increase in yellowfin catch and vendors classifying fish species more accurately. The number of trips from creel surveys decreased while trips from commercial invoices increased; this may be due to trolling occurring at average levels with the fishers selling their catch more frequently. Catch per unit effort (CPUE) slightly decreased overall in 2019, while skipjack and yellowfin tuna catch rates increased from the previous year. Other updates included the status of FADs around Tinian and Saipan since their destruction by a 2018 typhoon.

Regarding data collection, the Plan Team asked if language exists in the mandatory reporting regulations for commercial fishers that may pertain to non-commercial fishers, but this is not currently the case. DFW would like to implement mandatory reporting for non-commercial fishers in the future, but no mechanism to gather this information is in place and associated regulations would be difficult to enforce. Additionally, possible issues were noted with reported charter data, since only one charter vessel was interviewed, but data confidentiality requirements stipulate a minimum of three vessels. Whether the charter data met the requirements for data confidentiality was unclear because four individuals were interviewed on the charter vessel.[1]

The Plan Team was curious if the lack of creel surveys from July to September that led to a reduction of interviews for pelagic species also had the same impact on bottomfish, and how the seasonality of bottomfish and pelagic species interact with the gap in data collection. Dunn explained that the months from May to July are typically the calmest and most ideal fishing conditions, with most bad weather days occurring in February and March. While a reduction of 48% for the number of interviews does not coincide with the lack of surveys for one-quarter of the year, the absence of surveys likely was a factor. Pelagic fishing effort is typically highest in the spring during good weather, as that is also when mahimahi and wahoo are typically harvested. In the summertime, people become more interested in bottomfishing, where fishers troll to their fishing grounds before setting their bottomfishing gear. The nature of the mixed-gear fishing trips makes it hard to discern gear types in the data. The creel survey documentation report from 2011 for CNMI was updated in 2016 by DFW in collaboration with PIFSC, and while the documentations are relatively similar, the 2011 version is slightly more detailed.

Council staff asked about pomfret catch levels and species composition of pomfrets. Dunn clarified that one species of pomfret is predominantly caught in the CNMI, but other species are

[1] Following the meeting, Michael Quach verified that the charter data included in the draft report was not confidential as there were more than 3 interviews with different boats landing pelagic species.

possibly landed on occasion. Though pomfrets are typically grouped into pelagic catch, they are more commonly caught with bottomfishing gear by a small number of fishers that know good areas and times to harvest the species since given the sporadic nature of the fishery.

iii. Guam

Brent Tibbatts, Division of Aquatic and Wildlife Resources (DAWR), presented updates to the fishery data module for Guam in the 2019 annual SAFE report. Regulations for mandatory reporting for commercial and non-commercial fishers and vendors are currently in development on and will be submitted to legislature in the coming year. DAWR previously asked the military in Guam to better communicate when and where exercises may be occurring, and they have included additional groups in their email notice to mariners (NTM) to improve coverage. In 2019, the military issued 27 NTMs for 65 affected days in the area W-517, which was reduced from 2018. Weather also impacts the number of possible fishing days; an observed 114 days in 2019 had high surf or small craft advisories (i.e., high wind), but zero of these days were between April and July.

Pelagic landings from creel surveys slightly decreased due to a decrease in landings of tuna PMUS while non-tuna PMUS landings increased, and most of the catch comes from non-charter sources. Similar to CNMI, yellowfin landings had a large increase in 2019, perhaps due to a large amount of good weather days in the summer months. Wahoo catch decreased nearly 70% in 2019, while mahimahi almost doubled and marlin had an increase of over 100%. Total commercial landings for all pelagics increased in 2019 but decreased for tuna PMUS. The fishery had 472 active boats, which was above the 10-year average and possibly due to additional kayak fishermen joining the fishery. The number of trolling trips and hours have remained above their 10 year average for past couple of years and continue to increase. Transshipment data showed a large decrease to the lowest in the past decade at just over half of the 10-year average; this may be due to the loss of several reporting agents but could be attributed to less activity as well. 58% of fishing trips were asked if they had a shark interaction, and 48% of these interviews reported an interaction. Some bycatch from the troll fishery was recorded, mostly skipjack likely lost to shark depredation.

A Plan Team member noted that in the past few years, only 7 or 8 vessels from Japan have been involved in transshipment on Guam. The Plan Team discussed if it would be appropriate to include transshipment data in the 2019 annual SAFE report given data confidentiality requirements and the fact that only one transshipment reporting agent was collecting data at the port. Associated revenue information exists but also cannot be reported because it exists at a confidential level since a single vessel owner is associated with the multiple transshipment events. Plan Team agreed that the data and confidentiality requirements should be reviewed to determine if the transshipment data can be included in the 2019 annual SAFE report and if this data is already publicly disseminated through other avenues.

iv. Hawaii

Russell Ito, PIFSC, presented updates to the fishery data module for Hawaii in the 2019 annual SAFE report. Most commercial marine licenses (CMLs) active in 2019 were registered for pelagic fishing at 1,929 of 3,124 total licenses (including foreign crew on longline vessels), which was a decrease of 184 total licenses from the previous year. Commercial catch over the past decade peaked in 2015 and has decreased in recent years. In 2019, 36.5 million pounds were harvested commercially worth $105.5 million, though catch, revenue, and average price decreased from the previous year mostly attributed to reduced catch of the two most important species, bigeye and

yellowfin tunas. Deep-set longlining was responsible for most of the catch (32 million lbs.), while trolling was the second largest fishery as shallow-set longline catch has decreased in recent years due to fishery closures resulting from turtle interactions. The pole-and-line fishery, primarily catching skipjack, has declined close to zero in recent years from levels observed in 2010 to 2015. Billfish catches (i.e., marlins and spearfish), mostly from the deep-set longline fishery with some contribution from shallow-set longline and troll fisheries, increased over the past decade. Swordfish catches from the shallow-set longline fishery have waned in recent years due to fishery closures. In 2019, striped marlin catch was the highest in a decade. Other PMUS, including mahimahi, oilfish, wahoo, moonfish, pomfret, and sharks were mostly harvested by deep-set longline, with moonfish being the largest component of the group.

The deep-set longline fishery had 150 vessels that made over 1,700 trips, made 22,500 sets for 63.2 million hooks, which were record highs that are part of an increasing trend for the fishery. Most of the increases in effort were on the high seas. The shallow-set longline fishery had decreases in both participation and effort resulting from fishery closures. Though the number of vessels increased from 10 to 14 in 2019, the number of trips, sets deployed, and total hooks decreased to record lows. Most of the catch for the shallow-set longline fishery was on the high seas. The troll fishery had a decrease in the number of fishers and days fished though catch and revenue did not decrease as steeply. Fishers, days fished, catch, and revenue in the Main Hawaiian Islands (MHI) handline fishery decreased in 2019. The offshore handline fishery had a slight decline in fishers and days fished despite a slight increase in both metrics over the past few years.

Council staff noted a decline in average size of billfish, especially in the shallow-set longline fishery where a large discrepancy was apparent, and wondered if the difference could have been driven by the seasonal nature of the fishery such that there was a seasonal shift in average size of marlin in the deep-set longline fishery that mirrored the shallow-set longline fishery. Ito responded that peak striped marlin catch for both fisheries occurs in the fourth quarter of the year into the first quarter of the following year, while blue marlin catches peak in the summer months. Because the shallow-set fishery has not been operating in the summer over the past two years, the CPUE indices for the shallow-set fishery may be affected because data are not available for the entire year. The deep- and shallow-set fisheries operate in different areas, with shallow-set fishing occurring at higher latitudes and deep-set fishing happening closer to the MHI, which may explain the difference in size. The most recent stock assessment for striped marlin examined the species size composition and found many juveniles in recent catch. Seasonality was not observed in size composition but was seen in changes in abundance for different areas of the Western Pacific. PIFSC will be focusing on using samples collected internationally to help further understand the biology of striped marlin.

Council staff also noted the increase in the CPUE for yellowfin tuna following the recent El Niño, and inquired about associated recruitment pulses, average size, and the catch rates of smaller individuals. Ito stated that there was not much known about the CPUE statistics of small yellowfin tuna, only that they are typically harvested in the troll and handline fisheries and that the number of large individuals caught in peak season has been low relative to overall catches.

v. International

Keith Bigelow, PIFSC, presented updates to the international fishery data module in the 2019 annual SAFE report. The module focuses on total pelagic catches across the Pacific from purse seine, longline, and pole and line fisheries, pulling information from the Western and Central Pacific Fisheries Commission (WCPFC) since 2004, the Inter-American Tropical Tuna Commission (IATTC) since 1949, and the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC) since 1995. In the IATTC, just over 3 million metric tonnes (mt) of tuna were caught in 2018, with the majority being skipjack harvested by purse seine. The WCPFC purse seine fleet has been shifting over time, with the Pacific Island fleet growing to much larger sizes than those of Japan, Korea, Chinese Taipei, and the USA by purchasing vessels from other fleets and increasing their catch to over 782,731 mt in 2018. Longline catches of albacore, bigeye, and yellowfin tunas have been relatively stable over last decade, while the pole and line fleet has been declining. Main points of interest for the WCPFC in 2018 include that total catch increased with some species rebounding, and that the fisheries were worth over $6 billion in total.

Three stock assessments were completed in 2019 for Western and Central Pacific Ocean (WCPO) skipjack, North Pacific striped marlin, and oceanic whitetip sharks (OWT). The module contains a table that illustrates stock status determination relative to reference points adopted by the Council in the Pelagic Fishery Ecosystem Plan (FEP). The table shows that 2019 stock assessments for WCPO skipjack tuna determine that the stock is not overfished or experiencing overfishing. North Pacific striped marlin and Pacific OWT are both overfished and experiencing overfishing per criteria in the Pelagic FEP. Further discussion on issues regarding OWT and North Pacific striped marlin were taken up later in the meeting.

vi. Recreational/Non-Commercial Fisheries

Council staff presented updates to the non-commercial module in the 2019 annual SAFE report. Ideally, the module will include charter and non-charter data, trips, and species distinguished by region as well as the proportion of total catch assumed to be non-commercial. So far, data has been obtained from American Samoa fishing tournaments, Hawaii Marine Recreational Fishing Survey (HMFRS), Hawaii charter fisheries, and CNMI non-commercial fisheries. A JIRA data request was made for available non-commercial data from each of the territories. Because trends over time are not available, the American Samoa fishing tournament data cannot easily be incorporated into the module in a meaningful way. The available CNMI data showed a decrease in non-commercial landings in recent years. The Hawaii charter data were more comprehensive, with information categorized by county and species, but only kept catch was recorded. The most available data were from HMFRS, which showed a slight decline in catch from 2018 to 2019. Yellowfin tuna was the most caught species, and angler trips spiked to well over 600,000 in 2018 and 2019. The JIRA data request will be used to emulate data reported in previous annual SAFE reports, use sold versus unsold catch to calculate a proportion of non-commercial catch and estimate total recreational fishing trips. Council staff asked the Plan Team to give guidance on what other data are available to use in the module, and requested that the module be reviewed by the Non-Commercial Fisheries Advisory Committee prior to being presented to the Plan Team in the future.

Plan Team members noted that presentation of non-commercial data is important because of the Marine Recreational Information Program (MRIP) exemption for Hawaii and the territories that requires non-commercial data to be reported. The MRIP requirement was that each territory simply needs to provide non-commercial data to WPacFIN. While data were not directly collected for this

purpose specifically, tournament data in the territories have been provided. The boat-based creel surveys provide catch estimates for the whole area and focusing on non-commercial data and tournament data may help create a picture of overall landings. However, adding data together can be problematic if overlap in the data is not avoided.

vii. Administrative and Regulatory Actions

Joshua Lee, Pacific Islands Regional Office (PIRO), presented on administrative and regulatory actions taken by the National Marine Fisheries Service (NMFS) in 2019. The module presents a timeline of actions since the last SAFE report, covering items such as fisheries closures, annual catch limit (ACL) specifications, interim rules, and other related actions. The specific actions were made available in the annual SAFE report for Plan Team review.

B. Ecosystem Chapter

i. Environmental & Climate Variables

Phoebe Woodworth-Jefcoats, PIFSC, presented updates to the climate and oceanic indicators section of the 2019 annual SAFE report. The module now presents indicators in relation to one another to indicate linkages between them. Natural climate variability, for example, is driven by the El Niño – Southern Oscillation (ENSO) and Pacific Decadal Oscillation (PDO), which impact other indicators and propagate through the system to reach fisheries; anthropogenic climate change is driven by atmospheric carbon dioxide (CO_2) from the burning of fossil fuels.

CO_2 continued to increase and oceanic pH continued to decrease in the most recent data. El Niño shifted to neutral in 2019, and the PDO was also relatively neutral. Tropical storms were was not anomalous in the Pacific. Sea surface temperature (SST), continued to show a steady linear increase in the area where the Hawaii longline fishery operates. Temperature at 200 – 300 m depth, corresponding to tuna habitat where the deep-set longline fishery sets its gear, was a little cooler than the historical average around Hawaii in 2019 but a little warmer than average in the north. Ocean color (i.e., chlorophyll-a concentration) was slightly below average. The North Pacific Subtropical Frontal Zone (STF) was near its historical average displacement 2019, but the Transition Zone Chlorophyll Front (TZCF) was a few degrees north of its historical average in some areas. The estimated median size of phytoplankton was lower than average in 2019.

The last several indicators used fishery dependent data. Fish community size structure distribution was average in 2019, with bigeye tuna being consistent and swordfish being a little larger than normal. Woodworth-Jefcoats asked the Plan Team if the violin plot on fish community size structure was useful, and if the figure has value in evaluating whether this data can help discern strong recruitment classes from the visualized size distributions. The Plan Team suggested that the y-axis of the figure be truncated to compensate for the long tails of the plots, that 20^{th} and 80^{th} percentiles be indicated on the plots, and include an indication of the size at which 50% of the population is believed to be spawning (L_{50}). L_{50} parameters could likely be retrieved from the PIFSC Life History Program (LHP). Bigeye tuna weight per unit effort (WPUE) used CPUE of fish of different size to detect pulses in recruitment, but there was no pulse evident in 2019. The bigeye recruitment index uses CPUE of small bigeye tuna to project peaks in total bigeye tuna 1-2 years later, but there was no indication of a notable upcoming recruitment pulse. The bigeye tuna catch rate forecast uses median phytoplankton size to project catch rates 4 years in advance, but no peaks

in catch rate were forecasted within the next few years. Woodworth-Jefcoats asked the Plan Team if it would be useful to retain both the median phytoplankton size and bigeye tuna catch rate forecast, and Plan Team members though both were valuable to retain.

In future reports, additional indicators will continue to be added to the module. The Plan Team noted it would be useful to integrate the oceanic indicator data into the online portal for the annual SAFE report, and that the feasibility of doing so should be explored. The Plan Team representative from American Samoa requested considerations for albacore indicators for the American Samoa longline fishery, including an albacore catch forecasting, suggesting that PIFSC could collaborate with DMWR to use the available indicators to analyze the fishery. In later discussion on the potential for an albacore catch rate forecast, some Plan Team members questioned whether the task should be prioritized when the fleet and associated landings have declined substantially in recent years. Council staff added that the composition of the fishery may continue to change going forward amid these declines.

ii. Habitat section

Thomas Remington, Council contractor, presented updates to the essential fish habitat (EFH) section of the 2019 annual SAFE report, which had limited updates in 2019 including changes to the research and information needs portion of the section to include aspects of the Bigeye Tuna Initiative at PIFSC. A Plan Team action item from the 2019 meeting directed the Council to evaluate the section to see where the EFH section could be further improved. After thorough evaluation, Michael Parke, PIFSC, determined that no large changes could be made to the section. In the future, if pelagic EFH begins to be identified dynamically such that pelagic habitat or hotspots are tracked as they change over time, associated research and/or data could be included. Remington asked the Plan Team to share any additional ideas for module improvements, and Parke noted that EFH could fit well into the ecosystem based fisheries management (EBFM) framework.

iii. Marine Planning section

Remington presented updates to the marine planning section of the 2019 annual SAFE report. There were no new aquaculture operations, alternative energy facilities, or military training activities associated with the pelagic fishing waters of either American Samoa or the Pacific Remote Island Areas (PRIAs). In the Mariana Archipelago, there were minor updates on military training activities. Associated with a recommendation from the Plan Team at its previous meeting, a table presenting the number of notices to mariners and number of affected days was added to the section, and a Plan Team member suggested that these affected days could be broken down by season. Another Plan Team member noted COVID-19 has not caused military activity to decrease. In Hawaii, there was an update to the ongoing offshore aquaculture operation for kampachi, and the Plan Team also briefly discussed a proposed bigeye tuna aquaculture operation that is still in its formative stages. It was brought to the Plan Team's attention that a recently released Executive Order requires that all fishery management councils identify areas in federal waters that are appropriate for aquaculture and initiate pre-permitting within the year; this may require collaboration between the Council, PIFSC, and PIRO.

At its previous meeting, the Plan Team developed an action item for the Council to work with PIRO Sustainable Fisheries Division (SFD) to incorporate a cumulative impacts section to include past and present issues impacting fisheries operating in pelagic fishery areas in the marine planning section. Remington asked the Plan Team to provide additional direction on this task. Plan Team

members saw value in generating the section but had no ideas on a general plan to develop it. A Plan Team member suggested that Council staff and PIRO SFD meet in the near future to better determine a path forward, and that a more holistic review of the report will be required to remove portions that are not necessary.

Plan Team representatives from the Mariana Archipelago noted that proposed small arms fire ranges that may require closures could be included in future reports. Additionally, Plan Team members agreed that the location and statuses of FADs could be included in the marine planning section of future reports as well since older fishery performance modules used to have additional reporting on FADs. The Plan Team noted that having information on FADs on record in the report could be useful in processing additional purchase orders for them. Plan Team members also suggested that a map of the FADs and a description of the status of the buoys that are missing would be helpful for small boat fishers but would take some cooperation from local agencies.

4. Public Comment

There was no public comment.

5. Continued: Review 2019 Annual SAFE Report Modules

B. Ecosystem Chapter

iv. Socioeconomics section

Minling Pan, PIFSC, presented updates to the socioeconomics section of the 2019 annual SAFE report. Fuel price had the largest impact on fishing trip cost, and trends in price for Hawaii, American Samoa, Guam, and CNMI were similar over the past decade; American Samoa fuel prices were relatively lower in recent years due to a government subsidy. CNMI trolling pounds sold had been stable over the recent years, but slightly declined in 2019. Guam trolling pounds sold increased in 2019 but was lower than CNMI, while total pounds caught were more than double for CNMI due to the small proportion of sold versus unsold catch. The America Samoa longline fishery has been on a declining trend respect to pounds landed and revenue for the past decade. Revenues from the longline fishery have been declining slightly less than annual pounds landed due to an increase in fish price in recent years; this has also caused net revenue per set to increase. American Samoa non-longline pounds sold slightly decreased in 2019, but revenue also had a small increase and nearly all the pounds landed were sold. Hawaii longline pounds sold and revenue declined slightly over the past two years, but both have increased over the past decade. Net revenue for tuna has been decreasing over the past few years, but net revenue for swordfish has increased over the same period. Hawaii non-longline fisheries had decreases in pounds sold and revenue in 2019 and have been in a general declining trend over the past five years. Trolling had the most revenue for non-longline gear types in Hawaii, followed by MHI handline by a large margin.

The Plan Team noted that American Samoa non-longline fishery pounds sold and pounds caught were remarkably similar, suggesting that nearly all catch was sold in 2019, which is inconsistent with the known cultural practice of distributing catch among the community in American Samoa. Plan Team members suggested that data be reviewed with WPacFIN and DMWR to look at percent of catch sold from interview data and review the data filtering that generated the presented data. One possibility for pounds sold being similar to total catch is that longline fleet data were

captured in the commercial landings data, and Plan Team members noted it would be better to isolate longline commercial data from the data summary. The high amount of pounds sold is not seen in the bottomfish fishery, so the data need to be rectified given that creel surveys do not include longline boats.

The proportion of pounds sold to pounds caught was not presented for the America Samoa longline fishery, which is because all longline catch, especially cannery species, was assumed to be sold. Approximately 85% of total longline catch was albacore, and all albacore catch is sold to the cannery. Non-tuna PMUS are likely to go to a market or be sold to the cannery, but the cannery no longer has their data reported. Plan Team members noted further investigation may be warranted on the proportion of non-tuna PMUS and other species that go to market versus those allocated for cultural use, as they have been relatively cheaper in recent years due to increases in the prices of coral reef fish and bottomfish.

v. Protected Species

Council staff presented updates to the protected species section of the 2019 annual SAFE report, which was a joint effort by the protected species work team. The Hawaii shallow-set longline, which has 100% observer coverage, has had closures in recent years and data for those years are not representative of a full fishing year. Council staff highlighted the loggerhead and olive ridley turtle observed mortalities in the shallow-set fishery since 2017, whereas no mortalities had been observed in this fishery in prior years, and sought Plan Team input on whether further review was warranted. Plan Team members noted that a statistical analysis may not be warranted due to the low sample size, but that a review of gear characteristics over time in coordination with the industry may provide some insights on whether any factors contributed to the recent observed mortalities. No notable changes were observed for marine mammal and seabird interactions in 2019, other than the increasing black-footed albatross interactions over time that the Council has been addressing. Elasmobranch data showed only a few interactions with OWT in the last two years because the fishery overlaps with the OWT distribution in the summertime, and the fishery has been closed by summer in those years.

In the Hawaii deep-set longline fishery, which has had 20% observer coverage since 2001, turtle interaction rates continued to be low relative to the shallow-set fishery. Olive ridley turtle interactions remained at the elevated level observed in recent years. The work team considered whether the number of leatherback turtle interactions may be increasing over time with higher interactions, but such a pattern is not apparent at this time. The most common marine mammal in the fishery is with false killer whales, which had the highest number of observed interactions in 2019 relative to all available data, but the mortality and serious injury estimate inside the EEZ is now under the potential biological removal (PBR). Black-footed albatross interactions remain elevated since 2015, and the Council has been addressing this issue through two workshops and a tori line project. Elasmobranch data were presented but were discussed at greater length later in the meeting.

A Plan Team member asked if the spike in giant manta ray (GMR) interactions in the deep-set fishery in 2010 was real, and Council staff confirmed that the observed interaction data show a much higher number only in that year compared to other years.

Observer coverage in the America Samoa longline fishery has been variable and was below 20% in 2019 due to low effort overall. The narrative in the SAFE report for green turtles were updated to

reflect recent Council recommendations associated with apparent changes in interaction rates. No notable trends or patterns were noted for marine mammals or seabirds. Of the ESA-listed elasmobranchs, OWT interactions are the most frequent. No GMR interactions have been observed since 2012, which the work team noted was due to improved observer species identification of mantas and mobulas as well as changes in observer protocol for only attributing interactions to GMR with a positive photo identification. No substantial updates were made to the non-longline fishery sections.

Plan Team members wondered if shallow-set turtle mortalities could be due to turtle size, but PIFSC's previous review of available data indicates that the size of turtles caught in the fishery has not changed over time. Other potential factors included the turtle being caught adjacent to a relatively large fish. Plan Team members noted that the lack of observed mortalities in the fishery prior to 2017 warrant further review, but also emphasized that the impact to the loggerhead sea turtle population with just two mortalities is minimal, especially relative to natural mortality for juveniles. Some Plan Team members did not think that evaluation of factors associated with gear configuration was warranted, as the gear is regulated and there may not be ways to further alter the configuration, but Council staff clarified that floatline or branchline length requirements are not specified for the shallow-set fishery. The Plan Team wondered if any case descriptions or notes in the observer records exist regarding the turtle mortalities themselves to look for commonalities between cases. Notes from the observers do exist, but the records are not guaranteed to provide valuable information. Because the dead turtles were likely brought back with the observers, necropsy records may be available.

6. SAFE Report Discussion

A. Discussion: Data Integration

Remington presented on the Data Integration chapter of the annual SAFE report. The chapter currently contains sections on factors influencing seabird interaction rates in the Hawaii longline fishery, attrition in longline fleets for both American Samoa and the Hawaii shallow-set fisheries, and impacts to bigeye CPUE from the spatiotemporal expansion of the Hawaii deep-set longline fishery. At its previous meeting, the Plan Team developed an Action Item for the Council to work with PIRO SFD to update the SAFE report Data Integration section with regularity and to include notable changes or issues pertinent to the FEP as a guide for adaptive management. Remington asked Plan Team members to give further direction on narrowing the factors that should be monitored in the chapter. A Plan Team member proposed that this action item could be discussed between Council staff and PIRO SFD at the meeting to figure out the aforementioned marine planning action item.

B. Web-Interface of the Annual SAFE Report

Remington presented the online portal of the Pelagic annual SAFE report that was recently developed and made public on www.wpcouncil.org, which makes the report more navigable, provides data visualizations, and allows data to be downloaded as a CSV file. The portal can also be viewed on mobile devices via their internet browsers. The data are manually inserted into the portal framework on an annual basis, which takes a lot of effort. The Plan Team suggested that it may be advantageous to automate the population of new data on an annual basis in the future. The Plan Team requested statistics on the number of visitors so far to the portal to see if the effort put

into the portal is worthwhile, which were presented later in the meeting. The Plan Team also discussed the possibility of including indicator data in the online portal.

Statistics on the usage of the online portal via HTTP/HTTPS requests was presented in response to Plan Team requests. An average of approximately 163 requests occurred per day for the last two months, totaling nearly 10,000 requests, and a spike of over 400 requests after the link to the portal was shared on a Guam fishing Facebook page. The Plan Team felt that this amount of usage provides more justification to further improve the portal. Ito suggested that a survey question on affiliation of users could be useful.

C. 2019 Report Region Wide Improvements & Recommendations

Plan Team members reviewed the action items identified in prior discussions on the annual SAFE report. The final list of action items is included under the Plan Team Recommendations section.

7. Impacts of COVID-19 on Pelagic Fisheries

Eric Kingma, Hawaii Longline Association (HLA), presented on impacts of the COVID-19 pandemic on Hawaii pelagic fisheries. A major drop in market demand due to losses of local and mainland food services (e.g., restaurants, hotels, catering) was observed on March 14, 2020, and has remained low since. Revenue for all species dropped nearly 60% relative to 2020 values preceding March 14, with close to an estimated $10 million lost over the course of April and May. HLA voluntarily implemented a trip limit of 15,000 lbs. in landings for longline vessels to reduce supply to meet the relatively lower demand. The United Fishing Agency (UFA) daily auction volume has dropped approximately 70% from its historical average to around 60,000 lbs. Despite recent increases in fish price, the market remains weak and volatile due to restrictions in air cargo, restaurant restrictions, and seasonal quality of fish. Imports of fresh fish from Central and South American will also be competing with local product as air travel restrictions lighten through the summer. The market is expected to remain relatively weak going forward and is dependent on the return of tourism to the Hawaiian Islands as well as easing of restaurant restrictions. NMFS recently announced allocations for funding to states from the Coronavirus Aid, Relief, and Economic Security (CARES) Act, but Hawaii received a relative low allocation at $4.3 million to be spread across all sectors of fishery participation (i.e., vessel operators, distributors, and non-commercial fisheries).

The Plan Team commented that the amount of funding allocation looks low relative to the amount of fish caught in Hawaii and noted that the landings limit implemented by HLA may stifle large vessels from taking additional fishing trips. Kingma explained that large vessels are not going on fishing trips because fish prices and trip expenses do not justify the effort. HLA will continue to monitor the situation to decide if the landings limit needs to be adjusted.

8. Community Participation in Hawaii Commercial Pelagic Fisheries

Justin Hospital, PIFSC, presented on community participation in commercial pelagic fisheries. A framework was built to develop measures of wellbeing and vulnerability, called community social vulnerability indicators, that monitors over 100 variables. The framework assesses factors such as social vulnerability, gentrification pressure, fishing engagement and resilience, and natural hazards. The community indicators were developed at the Census County Division (CCD) level, which allowed finer scale insights into island communities. Honolulu was very highly engaged in the longline fishery across all years from 2003-2018 and the trend was stable over time, whereas

Hilo's high engagement has declined and Ewa has had increases. Regionally, the combination of pounds landed, revenue, and fishers showed that Honolulu dominates these categories, but also that Ewa has had recent increases in contributions. The highly migratory species (HMS, i.e., non-longline PMUS) fishery has had high engagement from North Kona and Honolulu over time, with recent increases from Keeau-Mountain View. Regionally, fisher distributions have been consistent while many regions have had increased revenues at the expense of Koolaupoko.

The next step for these indicators is to contribute results to the national manuscript, which were also generated for the MHI Deep 7, uku, and former coral reef ecosystem management unit species fisheries. Additional applications will be explored, including links to the Pacific Islands Vulnerability Analysis, SAFE report considerations in tracking community engagement over time, and effective outreach strategies (e.g., if Council wants to know who to talk to for particular scoping meetings for those most impacted by regulations).

9. Pelagics FEP Council Action Items

A. Electronic Reporting in Hawaii Longline Fishery

Council staff presented on updates to mandatory electronic reporting in the Hawaii longline fishery. Last year, the Plan Team recommended that the Council request PIFSC to convene a longline Electronic Report Plan Development and Implementation Team, and PIFSC established the Electronic Technologies Steering Committee. Electronic reporting has been worked on for nearly two decades, starting with the Council recommending the optional use of electronic logbooks in 2003. Since then, electronic logbooks have been phased-in to the fishery in collaboration with NMFS. The effort to achieve full implementation began in 2018 when the Council took initial action to recommend mandatory electronic reporting in the Hawaii longline fishery. An options paper was presented at the 181st Council meeting that reviewed necessary regulatory and non-regulatory changes for requiring daily logbook transmissions, and the Council set a target implementation date of January 1, 2021.

A Plan Team member noted that electronic reporting is currently at 40% coverage, and the technological and customer service challenges are manageable at this level. Effort is ongoing to provide vessel owners with real-time access to their data as an incentive to using the electronic reporting platform, but a range of security-associated issues need to be resolved in setting up an application for data access. Council staff stated that electronic reporting has been under development for almost two decades, partially due to difficulties with language and cultural barriers. The Council contracted an interpreter to help with the Vietnamese community, which is a large portion of the fishery. Future work will likely include engaging with American Samoa pelagic fisheries to implement electronic reporting. A Plan Team member clarified that federal government provides tables with electronic reporting software to vessels since less than half of them had computers available at sea according to the most recent survey.

B. Hawaii Small-boat Fishery Management

Council staff presented on scoping meetings and upcoming actions associated with Hawaii small boat fishery management. The Council at its 180th meeting recommended that staff initiate scoping on management for non-longline small-boat fisheries in Hawaii. Scoping meetings reviewed potential management scenarios demonstrating why it would be important for the Council to have a management framework in place. Six meetings were held on the Big Island, Oahu, Maui, and Kauai with a total of 135 participants that generated five written comments. Comments suggested

the need for better data, more research on pelagic species, improving the minimum size for yellowfin, better enforcement, and communication with the fishing community. The meetings generated discussions on international fisheries being more impactful than local fisheries, underreporting, improvements to data collection and sharing, the need for managers to build trust with fishers, the importance of fish size, and climate change.

A scoping meeting report was presented to the Council at its 181st meeting, and the Council recommended staff to prepare options for mandatory permitting and reporting for Hawaii small-boat fisheries. A working group has been convened to assist in developing the draft options paper. Potential options are no action, implementing mandatory permitting/reporting, establishing a federal registry, or establishing a pilot system. Hawaii will likely act as a pilot project for other areas in the Western Pacific. The Council will take initial action at its September 2020 meeting.

A Plan Team member clarified that if a fisher intends to fish in federal waters, they already must be registered in the National Saltwater Angler Registry. However, the national registry does not have much enforcement, and very few people have registered for it in Hawaii. In contrast, a federal system established through Council action would come with enforcement, and enforcement representatives are part of the working group to provide advice on this matter. The Plan Team noted that just because something is mandatory does not mean fishers will comply, so the program should be implemented with both incentives and enforcement. One possible benefit could be continued presentation of pelagic data summaries to fishers so they can visualize the results of improved data collection. Council staff reiterated a Plan Team recommendation from its previous meeting for the Council to work with HDAR to develop indicators for the small boat pelagic fishery in Hawaii with the goal of holding a workshop to reconcile data sharing issues. Council staff also suggested it would be ideal to develop a plan to identify trends in fishing power and presence of highliners in the fishery, which has proven difficult due to the diversity of the fisheries.

C. Requirements for October 1 Start date for Shallow-set Longline Fishery

Council staff presented on the potential for an October 1 start date for the shallow-set longline fishery in Hawaii. The Council at its 179th meeting recommended consideration of providing shallow-set longline fishermen greater opportunity by changing the start date of the fishery from January 1 to October 1. The rationale of this action is to change the fishing season to allow it to operate through the ideal fishing season from the 4th quarter through the 1st quarter of the following year. Recent shallow-set longline seasons have been interrupted by turtle interaction issues, so fishers have not been able to fish during the 4th quarter of the year. Council staff asked the Plan Team to consider the benefits, drawbacks, and regulatory and reporting requirements of changing the season start date, including what changes need to occur to redefine the fishing year, what kind of analyses would be needed, and how the change would impact reporting requirements internationally and domestically.

A Plan Team member noted that if the shallow-set fishery begins in October, California would benefit the most from the landings in the 4th quarter due to the fishery operating primarily in the Eastern Pacific Ocean through January, whereas turtle interactions would still occur when vessels are fishing closer to Hawaii. Other Plan Team members explained that the WCPFC and IATTC have made clear that reporting is due based on calendar year. Regional fishery management organization (RFMO) reporting could likely not remain based on calendar year with interaction tracking being offset to begin in October because of the current permit for the fishery. The

regulatory effort required to change the reporting cycle for the shallow-set fishery would be large, and the upcoming Amendment 10 to the Pelagic FEP could mitigate impacts to sea turtles in the shallow-set fishery to keep it open all year. An example of the attempt to change bigeye tuna reporting from calendar year to a different schedule was mentioned by a Plan Team member, noting that the fishing industry was not interested. Some Plan Team members thought that the greater issue is that the loggerhead turtle hard cap is too low, as the loggerhead population has been increasing annually and many of these juvenile turtles are released alive.

A Plan Team member suggested performing a simple risk analysis listing benefits and drawbacks of shifting to an October 1 fishing year. However, Plan Team members also noted that an action to change the fishing year start was not warranted as it does not coincide with RFMO reporting and may also distract from the implementation of the trip limits under Amendment 10.

D. Other Past, Present, or Future Council Actions

Council staff led discussion on the status, rebuilding plans, and status determination criteria (SDC) for OWT and North Pacific striped marlin. Both species are overfished/experiencing overfishing according to the Council's SDC. Under the MSA, Secretary determination initiates the need to act for international overfishing. The Council then has one year to develop recommendations to address the relative impact of the US fishery and make recommendations for international actions to end overfishing and rebuild affected stocks. RFMOs have different SDC, and no limit reference points for striped marlin or OWT are in place. The WCPFC 15th Science Committee (SC15) noted the need for stock projections to show the efficacy of existing measures under the WCPFC. This information is imperative for immediate management action for the US. Existing conservation and management measures are WCPFC CMM 2011-04 for the non-retention of oceanic whitetips beginning in 2013 and CMM 2014-05 for the ban of 'shark lines' in longline fisheries beginning in 2015. The 2019 assessment does not reflect resultant fishing mortality or adult biomass recovery from recent management measures yet because the assessment only uses 4 years of data since the non-retention measure was enacted and the species matures at 8 to 9 years. The SC15 noted some improvement in stock trajectory since 2013, however, additional projections and Monte Carlo simulations of management action could reflect what impacts recent management measures may have on the stock. Information may not exist to determine if potential management measures will satisfy MSA and discern relative impacts. Council staff asked the Plan Team to discuss the importance of collaborative efforts to develop stock projections for OWT, such as deeper investigations for further mitigation in the fisheries that would allow the population to continue to grow.

The Plan Team discussed how data limitations for OWT would render applicable results to assess the relative impact of the US fishery, due to only four datasets being robust enough for inclusion in the assessment. Within the projection framework, only the impact of US fisheries relative to international sources can be discerned by comparing OWT caught by US to the projected total individuals caught in the model. The total number of individuals, which is needed to inform management, is difficult to estimate and can be variable based on parameterization in the assessment. Depletion-based measures used by RFMOs may be much better. The US had committed to generating the projections as well as updating the Monte Carlo simulations on mitigation measures, but the COVID-19 pandemic has slowed progress. Several tagging studies are ongoing for OWT around Kona and Oahu to determine spatial structure, and the new EBFM model generates predictions for interactions with OWT and associated ecological

drivers. Regarding long term efforts, interviews are being conducted in Kona and the Mariana Archipelago on shark interaction, which may provide more information on behavioral components of interactions.

The Plan Team noted that shark tagging data show that improving handling practices can substantially increase post-release survivorship, and that focus on handling and release best practices are likely to provide the best bang for the buck for many protected species, especially for rare event species such as leatherback turtles. Plan Team members also suggested creating a working group to bring together expertise on projections, tagging, and handling to better understand the problem and develop a collective plan on how to deal with the issue and develop lines of research. The importance of prioritization was emphasized.

For North Pacific striped marlin, the Council previously recommended a catch limit of 457 mt that is triggered at 434 mt based on a WCPFC measure, CMM 2011-01. North Pacific striped marlin had a stock assessment completed in 2019 that showed a slight decline in mortality and increase in biomass in the most recent year of data available, but the stock was still below its maximum sustainable yield (MSY) and minimum stock size threshold (MSST) based on SDC in the Pelagic FEP. The rebuilding plan had a target biomass of 20% spawning stock biomass (SSB) as a target on a 15 year timeline, with a 60% probability of reaching the target based on projections. Projections were also immediate and not phased-in, showing that reductions were drastic such that the target would be reached in four years or not at all. Projections based on long-term recruitment scenarios showed an optimistic outlook, but because recruitment has declined over time, projections of biomass from recent recruitment assumptions were much lower. The ISC Billfish Working group indicated recent recruitment is more realistic. Staged reductions in catch would allow the fishing industry to have adaptive measures to reduce catch of striped marlin. Council staff asked the Plan Team to discuss possible regulatory actions needed to help monitor striped marlin catch and a mechanism to prompt adaptive measures.

The Plan Team reiterated that many different issues have arisen to work on for Western Pacific fisheries, but that striped marlin is special because a rebuilding plan is going to be put in place. Because striped marlin is an incidentally caught species with commercial value, harvest strategies will need to be established for other fisheries to deal with the species. Council staff noted that the catch limit recommended by the Council and Amendment 8 both have not been implemented. The Plan Team stipulated that the fisheries need to be able to operate under the management measure put in place, so perhaps the EBFM project can be used to see if any sort of prediction pattern for catches is observable. Prioritization and collaboration were again emphasized.

10. Public Comment

Theresa Labriola, WildOceans, provided public comment regarding the striped marlin discussion and encouraged possible alternative measures on hook placement and post-release mortality management measures that are more involved than a simple catch limit. She was also interested in socioeconomic data on striped marlin and exploring how Hawaii small boat and charter fisheries may be impacted with a rebuilding plan for the species. Lastly, she noted that she would like to hear discussion on spatial management measures such as the closures of known spawning grounds or other hotspots to help reduce catch.

11. Status of ESA Consultations and Development of Reasonable and Prudent Measures for the Hawaii Deep-Set and American Samoa Longline Fisheries

Council staff presented considerations for developing Reasonable and Prudent Measures (RPMs) for the Hawaii deep-set longline and American Samoa longline fisheries under the ongoing Endangered Species Act (ESA) consultations, which are scheduled to be completed by August 2020. The Council approached PIRO Protected Resources Division (PRD) to coordinate on the development of the RPMs if such measures are deemed necessary, and PRD indicated that they are not yet ready to discuss but encouraged the Council to consider measures for leatherback turtles, OWT and GMR, and starting with RPMs included in the Hawaii shallow-set longline fishery Biological Opinion (BiOp) completed in June 2019.

Council staff provided a summary of findings from data analysis conducted to date. The Hawaii deep-set longline fishery had higher observed interactions with leatherbacks in 2014 that coincided with a seasonal migration pattern, all of which were larger animals that were released alive. For both leatherback turtles and GMR, the annual observed interactions are small such that any discernable seasonal or temporal patterns result in a small sample size. Due to the spike in observed number of GMR in 2010 that is driving the spatiotemporal patterns, Council staff noted that the projected level of interactions for GMR may be overestimated. Council and SFD staff plan to do a similar data characterization for OWT done so far for leatherback turtles and GMR. Council staff asked the Plan Team to provide input on direction for analyses, potential measures, and considerations that may be unique to the deep-set and American Samoa longline fisheries.

The Plan Team reiterated the need for a working group to coordinate and prioritize protected species needs under the MSA and ESA in a proactive manner. Potential actions could include Monte Carlo simulations on measures, future projections, and identifying best practices for proper handling. Protected species habitat overlapping with fisheries is an important component, and the EBFM framework could be applied on this front. Support of prioritizations will also be required from PIRO SFD and International Fisheries Division (IFD). PIRO SFD has started developing a framework for evaluating a list of possible measures based on relative feasibility, conservation benefit, and required resources to visualize the tradeoffs of different actions.

Council staff clarified that requirements for MSA 304(i) would need to be addressed over the next year, whereas the development of RPMs would need to be done by this summer. Plan Team members indicated that the working group could start with short-term needs while also working toward the long-term goals. Council staff explained that the working group could either be formed under the Plan Team or as an ad-hoc committee of the Council, and the Plan Team agreed to further consider the implications of each option.

The Plan Team also discussed additional considerations on examining plankton density and size using satellite data to see how these data may overlap with GMR habitat since they are filter feeders. Guam also had a study done to see if any relationship exists between where GMR have been observed and fish spawning grounds.

12. Hawaii Shallow-Set Longline fishery RPM Working Group

Council staff and Lee provided an update on the Hawaii shallow-set fishery RPM working group, which is addressing RPMs in the 2019 BiOp other than those being implemented under Amendment 10. SFD developed a planning document to address work related to these RPMs and formed a working group. RPMs and associated Terms and Conditions (T&C) have been sorted into the following categories: PIRO internals (e.g., updates to data collection and reports, updates to the observer program); spatiotemporal patterns of leatherback turtles, OWT, and GMR; and handling

and release to increase survivorship. Other ongoing projects will also feed into the RPM working group discussion, including EBFM analyses and PIFSC interviews with Hawaii longline fishery participants about how they handle protected species. As measures are developed, those that require Council consideration for implementation will be vetted through the Plan Team.

13. Transformative Ecosystem-Based Management Workshop

T. Todd Jones, PIFSC, and Robert Ahrens, new PIFSC staff for the management strategy evaluation (MSE) position, presented on the Transformative Ecosystem-Based Fisheries Management Workshop, which was hosted by PIFSC in collaboration with Council staff. The workshop focused on a random forest model used to analyze the probability of fishery interactions with protected species and all other species encountered. The goal of the tool was to use data on physical features as predictors of species distribution, and to do spatial analyses to identify hotspots for species. One of the goals of the EBFM tool would be a utility similar to TurtleWatch, with weekly updates to identify areas of high interaction rates with particular species. Next steps identified by the workshop included comparing interactions in SST bands versus areas of high interactions and figuring out impacts of avoiding interaction hotspots and associated effort redistribution. The tool will also be used to generate interaction distribution models for the Hawaii deep-set and shallow-set longline fisheries.

In response to Plan Team discussions earlier in the meeting, EBFM model outputs were presented for OWT and striped marlin. Striped marlin had no strong core areas, with interactions diffused across the range of fisheries. However, ENSO and Julian day were shown to be influencing interactions the most, suggesting large temporal factors. OWT interactions were diffused, but notably stronger in the south. The interactions were shown to be influenced by SST fronts, chlorophyll-a fronts, current speeds, and the presence of seamounts.

Plan Team members noted that the tool seemed to be very sophisticated and asked if tradeoffs are incorporated into the model such that areas with good catches and low probability of interaction with other species could be identified. Ahrens indicated that the first step in using the tool is to understand the relative impact of the fishery on the species, and whether the impact of relative catch can be identified if the fishery moves out of areas of high interactions. Using economic information, the tool could analyze optimization by putting a penalty on interacting species and distributing effort to avoid protected species while maximizing profit. Figuring out tradeoffs and how to account for them at a dynamic level is important. The Plan Team also noted that the EBFM model could be used as a diagnostic tool to better understand factors associated with interactions. The model could potentially be combined with other projections and Monte Carlo simulations to generate MSE-type results for various management options.

14. Update on Seabird Mitigation Measures

Council staff provided an update on efforts by the Council, PIRO, and PIFSC to improve seabird mitigation measures, stemming from prior years' annual SAFE report reviews that identified the higher black-footed albatross interactions in the Hawaii deep-set longline fishery since 2015. Following two Council-hosted workshops, the Council, industry, PIFSC and PIRO are currently implementing a cooperative research project to test tori lines in the Hawaii longline fishery to inform design standards suitable for this fishery. The project is utilizing electronic monitoring to collect data on seabird interactions with tori line usage. Data collection is ongoing but has slowed down due to the COVID-19 pandemic, and the project may need to shift direct if the target number

of sets is not reached before July. The tori line design used in the data collection is the "short-streamer" type consistent with design standards for both WCPFC and IATTC. The project also considered testing a no-streamer design, which has been trialed in Japan and found to be effective and perceived positively by fishermen.

The project results will be brought back to the Council for further consideration of revising the seabird mitigation measures in the Hawaii longline fishery, including potential replacement with the blue-dyed bait, and further input from the Plan Team will be sought at that time.

15. Standardized Bycatch Reporting Methodology

Council staff presented an overview of the new requirements for Standardized Bycatch Reporting Methodologies (SBRMs) in Council-managed pelagic fisheries. The 1996 Sustainable Fisheries Act amendment to the MSA required all FEPs to establish SBRM. In 2017, NMFS issued guidance on the development, documentation, and review of SBRM. The guidance requires that FEPs identify procedures that constitute SBRM for each fishery and explain how SBRM meets its purpose. All FEPs must be consistent with the new requirements by February 21, 2022.

For the Pelagic FEP, the SBRM identified for fisheries includes observer program data, logbooks, and creel surveys, and the FEP indicates the data are to be synthesized and interpreted in the annual SAFE report. Council staff reviewed the existing bycatch data in the annual SAFE report, which showed that bycatch data are missing from the Hawaii and American Samoa longline fisheries (fish bycatch missing; protected species data included), as well as the Hawaii small-boat fishery. Additionally, bycatch for small boat fisheries in American Samoa, CNMI, and Guam are reported using creel surveys, but species information on bycatch are not reported in the annual SAFE report for American Samoa or CNMI. Council staff asked the Plan Team to consider how bycatch data reporting in the annual SAFE report can be improved for data collection methodologies identified as SBRM.

Plan Team members noted that HDAR has bycatch data for CML fishers in the Hawaii small boat fishery starting in October 2002, which can be included in future SAFE reports. A Plan Team member clarified that the Hawaii charter boat fishery is considered commercial, as the captains and deckhands are required to obtain CMLs because they collect fees for the harvest of marine resources. The Plan Team further discussed the need to determine if charter boat fisheries are considered commercial or non-commercial for the purposes of the annual SAFE report, with charter boat data currently being included in the non-commercial data module.

The Plan Team also discussed the inclusion of fish bycatch data from the observer program in the annual SAFE report, as Council staff explained that data on non-retained fish catch from the logbook program is not as reliable. Including bycatch data from the observer program would be possible, but Plan Team members warned that over 100 different species may be reported and that the observer program has tight deadlines on other deliverables around the time the annual SAFE report is typically generated. An action item was developed to determine the feasibility of requesting and including observer program data.

16. Workshop on Area-Based Management of Blue Water Fisheries

Council staff presented an overview of the upcoming International Workshop on the Area-Based Management of Blue Water Fisheries to be held on June 15-17, 2020. The workshop is meant to further develop a paper titled "Road Map to Effected Area-Based Management of Blue Water

Fisheries" and focus on three management objectives: to sustainable manage targeted fishery resources, decrease interactions with bycatch and non-target species, and protect specific habitat. The overarching objective of the workshop is to develop science-based decision guidelines for managers to identify objectives and practical approaches to employ area-based management measures as part of governance frameworks for natural resources in blue water ecosystems. Participants include Council staff, SSC members, leading academic scientists, RFMO scientists, scientists working with NGOs, and co-chaired by the United Nations Food and Agriculture Organization. Council staff asked the Plan Team to comment on any items from the workshop that might be relevant for the annual SAFE report or to present back to the Plan Team.

17. Public Comment

There was no public comment.

18. Pelagic Plan Team Recommendations

Recommendations

The Pelagic Plan Team:

1. Recommends the Council to work with PIFSC and PIRO to explore any factors that may have contributed to observed sea turtle mortalities in the Hawaii shallow-set longline fishery since 2018.
2. Recommends that the Council convene an interdisciplinary working group to develop a roadmap for generating analyses and/or potential measures for oceanic whitetip sharks regarding emerging requirements under the MSA and ESA. Keith Bigelow agreed to lead this group. The Plan Team further recognizes that prioritization of scientific needs for target and non-target species, as well as protected species, are imperative.
3. Recommends that the Council request PIFSC scientists to incorporate phytoplankton distribution from remote sensing data into the existing EBFM framework regarding giant manta ray habitat that may overlap with distribution of longline fisheries.

Annual Safe Report Module Improvements and Action Items

Plan Team members agreed to carry out the following module improvements and action items for the Annual SAFE Report:

1. Inquire with Guam Department of Agriculture whether reports of transshipment records were made public and if this information can be included in the annual SAFE report. Inquire with PIFSC on the veracity of transshipment data.
2. Regarding violin plots of fish size distributions in the Environmental and Climate Variables module, consider truncating the upper tail of the plots and add indicators of $20/80^{th}$ percentiles. Also consider adding a line across a weight corresponding with a weight of 50% maturity (converted from L_{50}). The plan team noted regional differences in L_{50} estimates but suggested using a base case L_{50} from the official stock assessments.
3. Consider the addition of ecosystem indicators for American Samoa into the SAFE Report with a predefined area domain where the albacore fishery typically operates. If the ecosystem indicators presented in the Archipelagic SAFE report for American Samoa

cover this area, then additional indicators do not need to be added to the Pelagic SAFE report.

4. Determine feasibility of incorporating ecosystem indicator data in the online portals of the annual SAFE reports and begin monitoring usage levels of the online portals. In the future, explore a data pipeline to automate data entry into the portal framework.
5. Consider closures associated with proposed small arms fire ranges in the Mariana Archipelago and to coordinate with DFW and DAWR staff to include relevant information in the Marine Planning module.
6. American Samoa DMWR and PIFSC representatives on the Plan Team to initiate coordination to investigate the American Samoa creel survey expansion data against commercial receipt book data, whereas pounds sold was relatively similar to total reported catch from trolling methods. The Plan Team noted cultural practices in American Samoa, whereby a significant portion of catch is given away, are not reflected in the presented data.
7. Coordinate with local agencies (DMWR, DFW, DAWR, and HDAR) to aggregate information on FAD location and changes from previous year and include this information in the Marine Planning module.
8. Initiate coordination between Council and PIRO SFD regarding implementing previous action items on requested updates to the Marine Planning and Data Integration modules, including the addition of cumulative impacts to the Marine Planning module and a guide for adaptive management to the data integration section.
9. Improve bycatch data summaries to include amount and type (species and condition) of bycatch, where data are available.
    a. Explore feasibility of including bycatch data from the observer programs for Hawaii and American Samoa longline fisheries.
    b. Present bycatch data including species and amount for Hawaii, American Samoa and CNMI small-boat fisheries. For the Hawaii data, also explore whether bycatch data for the charter vessels should be included in the Hawaii or non-commercial module.

19. Other Business

There was no other business.