



## **Three-Year Plan for the Scientific and Statistical Committee of the Western Pacific Regional Fishery Management Council**

**Year 2021 – 2023**

**STATUS as of September 2023**

### **Introduction**

The Scientific and Statistical Committee's (SSC's) primary responsibility is to provide ongoing scientific advice for fishery management decisions. The Magnuson-Stevens Fishery Conservation and Management Act<sup>1</sup> (MSA) states that the advice may include but not limited to:

“recommendations for acceptable biological catch, preventing overfishing, maximum sustainable yield, and achieving rebuilding targets, and reports on stock status and health, bycatch, habitat status, social and economic impacts of management measures, and sustainability of fishing practices.”

In providing scientific advice to the Council, the SSC forms working groups to discuss the particular issues in detail between the meeting and give a report to the SSC as a body during its regular meetings. SSC members also participate in peer-reviews of stock assessments and other scientific products for domestic and international fisheries management. The SSC members provide scientific support through projects, analyses, report development, and work products submitted to the Council and reported to the SSC for endorsement. The SSC maintains various research priority documents after vetting through different Council Advisory groups. These are the MSA Five-Year Research Priority, Cooperative Research Priority, Management Strategy Evaluation Priorities, and Insular and Pelagic Fisheries Research Plans.

### **SSC Three-Year Plan**

The SSC Three-Year Plan will help the SSC and the Council to project the SSC workload in a three-year horizon. This may include action items that are already ongoing, upcoming actions, scientific products anticipated for review, scientific workshop development, and other projects that would generate scientific products to support fishery management decisions. Additional items may be added to the plan as new management priorities emerge. The plan is structured on a four meeting outlook to map the formation of the different working groups that shall meet before the SSC meeting.

The SSC Three-Year Plan for 2021 to 2023 will focus on the following items under each of the following thematic areas: 1) Limit specification (ABC or quotas) for pelagic and island fisheries; 2) Stock assessment development; 3) Scientific and research priorities to advance

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<sup>1</sup> MSA § 302(g)(1)(B)

fishery management; 4) Science for fisheries management incorporating climate change; 5) Science workshops to change management paradigm; 6) Protected species; 7) Socio-economics; and 8) Organizational coordination.

## 1) Limit Specifications

- a. Setting Acceptable Biological Catch for Island Fisheries (routine) – the SSC will be deliberating on the new information that was subject to WPSAR review  
*STATUS: SSC has reviewed and recommended ABCs on a routine basis, including for MHI Deep 7 Bottomfish (March 2021), precious coral and deep-water shrimp (March 2022), Kona crab (June 2023), CNMI BMUS (June 2023,) AS BMUS, (Sept 2023).*
- b. Bigeye Tuna Specification (routine) – the SSC will review, per any incoming scientific information, the feasibility of catch limits for US and Participating Territories and any transfer of catch from the Territories.  
*STATUS: SSC has reviewed and made recommendations on single-year specifications.*
- c. Develop catch limits for Pelagic MUS (routine) – the US may need to develop catch limits for billfish stocks that are in an overfished/overfishing situation, yet are under international jurisdiction.  
*STATUS: SSC provided scientific advice on striped marlin catch limits (March 2021; Dec 2022 meetings)*

## 2) Stock Assessment Development

- a. Territory Bottomfish Stock Assessment Development (routine) – SSC members will participate in data workshops and review stock assessment data and modeling decisions and results as needed through SSC meetings and the WPSAR process  
*STATUS: SSC has reviewed the Terms of Reference for the AS Bottomfish WPSAR and the results of both the WPSAR and the AS bottomfish Stock Assessment (2023) for recommendation to the Council. An SSC Working Group also participated in a bottomfish data workshop in Nov 2021 to review PIFSC's data evaluation report.*
- b. Marianas BMUS Species Complex and Stock Definition – SSC members will form a working group to review the Plan Team report on redefining the BMUS complex in the Marianas and whether an archipelagic-wide assessment is warranted.  
*STATUS: SSC has provided recommendations to the Council on the AS BMUS complex; the Marianas BMUS complex will be reviewed after the stock assessments are completed.*
- c. Working Group on the Stock Definitions of Archipelagic and Pelagic Fisheries - National Standards 3 (NS3) of the MSA does not provide clear guidance defining stocks relative to management units in US fisheries. A working group will ultimately provide guidance to the MSA NS3 definitions of stock based on management unit species that may be contained within a single jurisdiction, transboundary, or straddling stock. It will develop guidelines for defining specific stocks of both archipelagic and pelagic management unit species in the Western Pacific Region. This will have implications on the jurisdiction of the stock assessment (e.g. state versus federal versus international).  
*STATUS: Due to prioritization of other issues, the SSC has yet to investigate NS3 technical advice. However, following climate change discussions and prioritization*

*for reconciling climate change governance, there should be an opportunity to revisit this.*

- d. Providing Critical Scientific Information to Address International Overfishing (ad hoc) - After an international RFMO science committee or provider considers a MUS in any Council FEP to be overfished or experiencing overfishing, Council staff or NMFS will present the assessment results, minimum stock-size threshold (MSST) from the appropriate FEP, and US catch histories of Council-managed fisheries to the SSC at its very next meeting. The SSC will either 1) advise Council staff to explore and develop management options before the RA issues a letter to the Council (notifying it of its one-year MSA 304(i) obligations); or 2) request NMFS to work with the RFMO science provider to provide necessary scientific information, such as stock projections before the RA issues its letter to the Council.

*STATUS: The SSC reviewed NS2 Regional BSIA advice and regional BSIA memo signed by the Council, PIRO, and PIFSC includes an opportunity for the SSC to review international stock assessments before the Council is notified of its MSA 304(i) obligations. The Council can provide NMFS with guidance on whether or not international products satisfy BSIA requirements. The WPSAR Steering Committee will also revisit WPSAR policy.*

### **3) Scientific and Research Priorities to Advance Fishery Management**

- a. Review of the Council's research priorities and informing PIFSC's Annual Guidance Memorandum (routine) – the Council maintains several research priority documents that are used to identify priorities for funding and recommendations for the Annual Guidance Memorandum for PIFSC. These are the MSRA Five Year Research Priorities, Cooperative Research Priorities, Pelagic Fisheries Research Plan, and the Management Strategy Evaluation Priorities. These documents are reviewed in the last quarter of the year in time for the AGM drafting by NMFS and the funding RFP development in the subsequent year. The SSC will annually provide input to the Council in September to inform recommendations to PIFSC.

*STATUS: SSC has provided routine input on research priorities through the year, including interim updates to the MSA 5-year Research Priorities.*

- b. PIFSC Science Plan (ad hoc) - SSC members will participate in the planning sessions for the development of the PIFSC Science Plan and provide comments on the draft plan as appropriate

*STATUS: The current PIFSC Science Plan covers 2019-2023. PIFSC has not yet announced their plans for updating the plan under its new leadership.*

- c. Archipelagic and Pelagic Annual SAFE Report Review (routine) – as part of complying with the requirements of the FEP and National Standard 2, the SSC will review and endorse the draft Annual SAFE reports at its regular June meetings. The regulatory deadline for the reports is June 30 of every year.

*STATUS: The SSC has provided annual review and endorsement of the SAFE report at its June meetings.*

- d. Review of Status Determination Criteria under a revised MSA (ad hoc) – Status determination criteria under a revised MSA may require stocks deemed overfished to be instead determined “depleted”. However, overfished and depleted may have differing connotations. The SSC will provide some clarity or suggest criteria for when

a stock is overfished vs. depleted.

*STATUS: SSC reviewed and provided recommendations for the Kona Crab SDC (Sept 2022; March 2023).*

- e. Western Pacific Stock Assessment Review (routine) – between 2021 and 2023, the SSC will participate in WPSAR meetings and desktop reviews as dictated by the WPSAR schedule. The SSC will also be tasked with reviewing the Terms of Reference for WPSARs,

*STATUS: SSC reviewed the TORs and outcomes of the WPSAR and Stock Assessments for Uku EFH (TOR June 2022; WPSAR report Sept 2022 ) and AS BF Stock Assessment (TOR Nov 2022; WPSAR report June 2023).*

- f. National Standard 1 Technical Guidance Memorandum (ad hoc) – NMFS will be releasing two Technical Guidance Memoranda under National Standard 1. The first is the Tech Memo on biological reference points and the second is on the data-limited fisheries. The SSC will be tasked to review and provide comments. Working groups will be formed to provide an in-depth review and provide a report.

*STATUS: The SSC provided guidance through a working group at its June 2023 meeting. A report of the working group and advice for Councils was sent to NMFS National Stock Assessment Program and to other Council executive directors.*

- g. NMFS Science Policies (ad hoc) – the SSC will be reviewing science policy documents including Electronic Technologies Policy, NS2-related policies, etc.

*STATUS: SSC reviewed and provided input on the NMFS BSIA Framework (March 2022). This allowed the SSC opportunity to weigh in on scientific products before BSIA determinations are made.*

- h. Monitoring and Evaluating Feasible Management Actions for Incidental Pelagic Management Unit Species (ad hoc) – The SSC and Council Staff will conduct a review of analyses that monitor trends in non-target but marketable pelagic management unit species (mahimahi, wahoo, pomfrets, opah, etc). Research is underway to determine trends in catch biomass from commercial and non-commercial fisheries in Hawaii and biological impacts. The SSC can also determine the feasibility of management actions (catch limits, creel limits, size limits, etc) for fisheries based on this information.

*STATUS: An SSC member is undertaking this project and will be presenting on a feasibility study at the September 2023 meeting*

- i. Evaluating reference points for pelagic management unit species in the Western Pacific region (ad hoc) – the SSC will conduct an evaluation on the appropriate reference point for each pelagic management unit species that utilizes information from international assessments that would be consistent with the requirements of domestic fishery management.

*STATUS: Staff presented on candidate reference points for pelagic MUS at the September 2021 meeting and the SSC did not make any determination on whether it was necessary at the time.*

#### **4) Science for Fisheries Management Incorporating Climate Change**

- a. Applying the Static and Dynamic EFH Delineation Model to Uku and Territory Bottomfish – A SSC member developed the EFH delineation model. This project will apply the model to the management unit species, particularly to *Aprion virescens* and

the territorial BMUS complex. The model uses the static EFH definition and generates a probability gradient map to define which areas are hotspots, core, EFH, and non-EFH. The dynamic part of the model uses oceanographic data that can be projected in the future for various climate scenarios to view the change in EFH over time. The results of the project will be subject to WPSAR to refine the EFH definition for these species.

*STATUS: SSC reviewed the uku EFH models and provided recommendations for improvement and further research. The SSC also reviewed the TOR for the WPSAR and the results of the WPSAR in anticipation of revising EFH for uku in the Hawaii Archipelago FEP.*

- b. Assessing threat abatement using area-based vs. non-area-based management tools in the WP Region - benefits of the ocean and its resources would include oxygen production, carbon sequestration, food production, employment, tourism, and biodiversity existence values. Threats would include global warming, ocean acidification, and land-based runoff, pollution, illegal fishing, exotic species, etc. An SSC subcommittee will analyze the efficacy of management tools to most effectively address such threats specific to the WP Region.

*STATUS: Council staff and SSC members published two peer review papers in 2021 and 2022 address use of area-based management tools with respect to different objectives.*

- c. Shifting Distributions – Climate change and physical forcing (e.g. ‘regime shifts’) may drive MUS distributions away from their historical distributions and/or away from (or towards) fishery distributions. This may introduce threats to fishery access, food production, and economies. It may also bring about new fishing opportunities. Distributions of MUS and their prey sources may also be affected, which need to be considered under the reauthorization of the MSA. The SSC will review the impacts of distribution and ‘regime shifts’ and provide any guidance to help inform adaptive management.

*STATUS: The Council is planning on conducting climate change scenario planning in the near future and the National Scientific Coordination Subcommittee is focusing on climate change impacts on the applicability of ABC control rules. NSI guidance provided to the Council and SSC feedback (June 2023) also addresses some of these impacts on regimes shifts and appropriate responses by the Council.*

- d. Island Fisheries Ecosystem Indicators and Thresholds – The Council is working with a contractor to identify the ecosystem and climate change indicators that influence the nearshore fisheries and determine the thresholds in those indicators that would trigger management actions. The SSC will utilize the preliminary product and develop the scientific framework that would adopt the modeling approach and apply it to other species particularly for the management of the ecosystem component species.

*STATUS: The SSC reviewed a Council CRCP project looking at defining ecosystem reference points in the form of threshold relationships between indicators and human pressures for nearshore ecosystems in Hawaii. The SSC provided feedback on statistical methods and future direction noting an interest in how the project will inform management targets.*

- e. Process Error to Inform Extrinsic Ecosystem Drivers - The SSC will develop guidelines to use estimated process error from stock assessment models to inform



likely future biomass uncertainties due to short-term ecosystem dynamics or long-term climate change.

*STATUS: The SSC provided some relevant guidance in its working group report on NSI biomass proxies at its June 2023 meeting.*

- f. Advance the Management Strategy Evaluation efforts (routine) - The SSC will provide guidance on tools used for management strategy evaluation (MSE) and identify key management scenarios for which stated objectives are to be achieved.

*STATUS: The SSC at the Sept 2022 recommended priorities for EBFM-related planning, and included a priority that identified two scenarios that could benefit from quantitative decision making tools.*

## 5) Science Workshops to Change Management Paradigm

- a. Workshop on bigeye tuna management in WCPO longline fisheries (ad hoc) – comes with two themes: 1) area/zone-based management versus flag-based and 2) management objectives and evaluation. The overarching goal is to develop recommendations to update WCPFC CMMs, specifically management measures for WCPFC longline fisheries targeting tropical tunas, taking into account contemporaneous economic cost-benefit analyses and best available science. The SSC will guide Council staff in framing the workshop and objectives.

*STATUS: Select SSC members provided Council staff advice in developing two tropical tuna longline management workshops held in November 2022 and April 2023. Reports from those workshops were provided to the SSC.*

- b. National Workshop of the Scientific Coordinating Subcommittee of the CCC - Western Pacific SSC member representatives will participate in the National Workshop of the SCS in Alaska in August 2022. The thematic areas include: 1) incorporating ecosystem indicators in stock assessments; 2) Developing information to support the management of interacting species in consideration of EBFM; 3) and developing fishing level recommendations for species with shifting distributions.

*STATUS: Three SSC members participated in the August 2022 SCS7, and provided a report at the September 2022 SSC meeting, which resulted in SSC recommending priorities for EBFM-planning.*

- c. Workshop on the Uptake of Multispecies Modeling to Inform Ecosystem Component Species Management - In June 2021, NMFS and UMASSD-SMAST co-hosted the Multispecies Modeling Applications Workshop. The goal of the workshop was to determine the impediments of the use of multispecies models (MSM) and find opportunities to enhance the uptake of MSM in fisheries management. The SSC will take the lead in organizing a regional workshop to create an inventory of MSM initiatives and develop a framework by which MSM could be used in the management of Ecosystem Component species.

*STATUS: Planning for a regional workshop on MSM initiatives has not been initiated.*

## 6) Protected Species

- a. Biological Opinion Reviews – SSC will review and identify scientific issues regarding the impacts assessment and any potential RPMs/RPAs to the Council for ESA consultations for fisheries managed under the Council’s FEPs. These Biological

Opinions (BiOps) may also contain RPMs/RPAs that require Council management action, and the SSC will provide scientific input as those needs arise. ESA consultations for the Hawaii deep-set longline fishery, American Samoa longline fishery, and the MHI and Territory bottomfish fisheries are ongoing, and draft BiOps are anticipated in 2021.

*STATUS: BiOps were delayed. SSC reviewed the draft bottomfish fishery BiOp in June 2022, and the draft DSLL and ASLL BiOps in March 2023. SSC formed a working group to lead the review and generate review reports for full SSC review and adoption. SSC's reviews informed the Council's responses to the draft BiOps, which in turn resulted in revised RPMs in the final BiOps.*

- b. Council Actions on Improving Protected Species Management Measures – The SSC will provide scientific input on Council actions and associated scientific products to improve protected species management measures in fisheries operating under the FEPs. Council action is scheduled in 2021 for the revision of seabird mitigation measures and prohibition of wire leaders in the Hawaii longline fishery.

*STATUS: The SSC reviewed and provided scientific input on seabird mitigation measures and associated research (multiple meetings between March 2021 to Dec 2021), and the wire leader regulatory amendment (March and June, 2021).*

- c. SSC Working Group on FKW Alternative Measures – The SSC formed a working group to develop recommendations on alternative approaches to weak hooks for reducing impacts to false killer whales (FKWs) in the Hawaii deep-set longline fishery. WG is developing an issues paper for SSC review at the June 2021 meeting with the aim of presenting the final product in September. The SSC will review the issue paper and provide future direction to the Council.

*STATUS: The SSC working group presented the draft paper at the June 2021 meeting, and the SSC reviewed and adopted the FKW issues paper at the September 2021 meeting. The SSC additionally provided scientific input on the Council's position for the FKWTRT meetings (March 2022, March 2023) and associated scientific products including the weak hook study (Dec 2021), SEZ analysis (Sept 2022) and pelagic FKW abundance estimates (March, June and Sept 2023).*

## 7) Socio-Economics

- a. Socioeconomic context of fishery data collection – the effectiveness of territorial fishery data collection improvement efforts will be dependent on support and cooperation from the fishing community. An evaluation of community perceptions and understanding related to data reporting is critical to gauging future support and expected participation in new data collection systems. The SSC will review socio-economic and socio-cultural aspects of the American Samoa and Guam bottomfish fishery that affects support for new data collection approaches. An SSC member with social science expertise will participate in territory Data Workshops to facilitate consideration of perceptions, incentives, and socio-cultural aspects of fisheries and communities.

*STATUS: The SSC received updates and provided input to PIFSC on the ongoing bottomfish stock assessment improvements. An SSC member with social science expertise participated in the SSC Working Group bottomfish data workshop in Nov 2021.*

- b. Fishing community resilience and adaptation to future shocks – narratives of COVID-19 impacts to regional fisheries and fishing communities are a key feature of the Annual SAFE reports in 2021. PIFSC monitored impacts of the pandemic on regional fisheries and communities during 2020<sup>2</sup>. Establishing a framework to monitor and evaluate impacts, assess resilience, and document adaptations to future external shocks such as natural or social disasters that disrupt fishery production, supply chains, and markets will be critical for efficient fishery management decisions. The SSC will provide guidance on developing this framework. An SSC working group will be formed to:

- Develop a standardized framework for soliciting “fisher observations” to inform future SAFE reports (I believe this was a recommendation from 140th SSC)
- Review how PIFSC/NMFS/WPFMC and perhaps more broadly (other US Federal agencies, Foreign Governments, Private Sector, Industry) have monitored and reported out on COVID impacts during 2020-2021 (or search literature for monitoring parameters)
- Evaluate areas of improvement/develop key monitoring parameters and strategies for Council fisheries and communities, with an eye towards flexibility in applications to future unexpected shocks (both negative and positive)

*STATUS: SSC members in coordination with SSPC provided guidance intersessionally on the fisher observation framework. PIFSC has assisted in the annual fisher observation summary reports, which are now standardized using the SEEM components (social, ecological, economic and management).*

## 8) Organizational Coordination

- a. Annual and Quarterly Coordination Between Council and PIFSC Regarding Annual Priorities and Status – Council staff, in coordination with the SSC Chair, shall organize regular meetings with PIFSC Division Directors and leadership to discuss fishery science needs that will lead to Council management actions. Increased coordination with PIFSC staff allows for better monitoring of progress in addressing the science needs of the SSC.

*STATUS: Council staff meets at least annually with PIFSC Division Directors. SSC chair has not been involved in the meetings; Council staff to coordinate chair involvement for future meetings.*

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<sup>2</sup> <https://www.fisheries.noaa.gov/resource/document/updated-impact-assessment-covid-19-crisis-us-commercial-seafood-and-recreational>



## Schedule of Meetings and Working Group Sessions

2021							
<i>Inter-session</i>	<b>March</b>	<i>Inter-session</i>	<b>June</b>	<i>Inter-session</i>	<b>September</b>	<i>Inter-session</i>	<b>December</b>
FKW WG  OCS WG  NPO Striped Marlin Action Team	Deep 7 BF ABC Setting Final Action  Wire leader amendment  NPO striped marlin catch limits  Seabird mitigation measures  FKW WG	FKW WG  BET longline management in WCPO	FKW WG  Annual SAFE report review  NS1 TG SG3 Data Poor Stocks  Wire leader amendment (final action)  BET Specs 2022	SSC WG SG3  AS Stock Assess Data WS  SSC WG SG1  WCPFC SC17  FKW WG	NS1 TG SG1 Bio Ref Pts  Seabird mitigation measures (EFP results)  Research Priority review  FKW WG Final Issues Paper  BiOp review	AS Stock Assess Data WS  Stock definitions of Island and Pelagic MUS WG  WCPFC PAC  Resilience WG	AS Stock Assess Data WS report  Seabird mitigation measures (anticipated final action)  Uku EFH presentation  BiOp review  Resilience WG
2022							
<i>Inter-session</i>	<b>March</b>	<i>Inter-session</i>	<b>June</b>	<i>Inter-session</i>	<b>September</b>	<i>Inter-session</i>	<b>December</b>
SSC SG on MA BMUS Complex and Stock definition	AS stock assessment data and model decision  Stock Definition WG report 1  Territorial BMUS workshop report	EFH Delineation WPSAR  Stock Definition WG convenes	SSC SG on MA BMUS report  Annual SAFE report review  AS stock assessment data and model decision	WCPFC SC18  Stock Definition WG convenes  Incidental pelagic MUS data workshop 1  National SCS WS  MSM planning	Research Priority review  AS stock assessment data and model decision  BMUS revision options paper	MA Stock Assess Data WS  WCPFC PAC  Stock Definition WG convenes  MSM planning	AS stock assessment data and model decision  Stock Definition WG report 1
2023							
<i>Inter-session</i>	<b>March</b>	<i>Inter-session</i>	<b>June</b>	<i>Inter-session</i>	<b>September</b>	<i>Inter-session</i>	<b>December</b>
Incidental pelagic MUS data workshop 2  Multispecies Modeling Workshop	Guam stock assessment data and model decision  Island Fisheries Ecosystem indicators and thresholds  MSM workshop report	AS BF Stock Assess WPSAR	Annual SAFE report review  Guam stock assessment data and model decision	WCPFC SC19  BET stock assessment	AS BF WPSAR report  AS BF Stock Assessment Report  Research Priority review  Guam stock assessment data and model decision	P* and SEEM Analysis WG  WCPFC PAC	ABC Setting for AS BMUS  Guam stock assessment data and model decision