Atlantic States Marine Fisheries Commission
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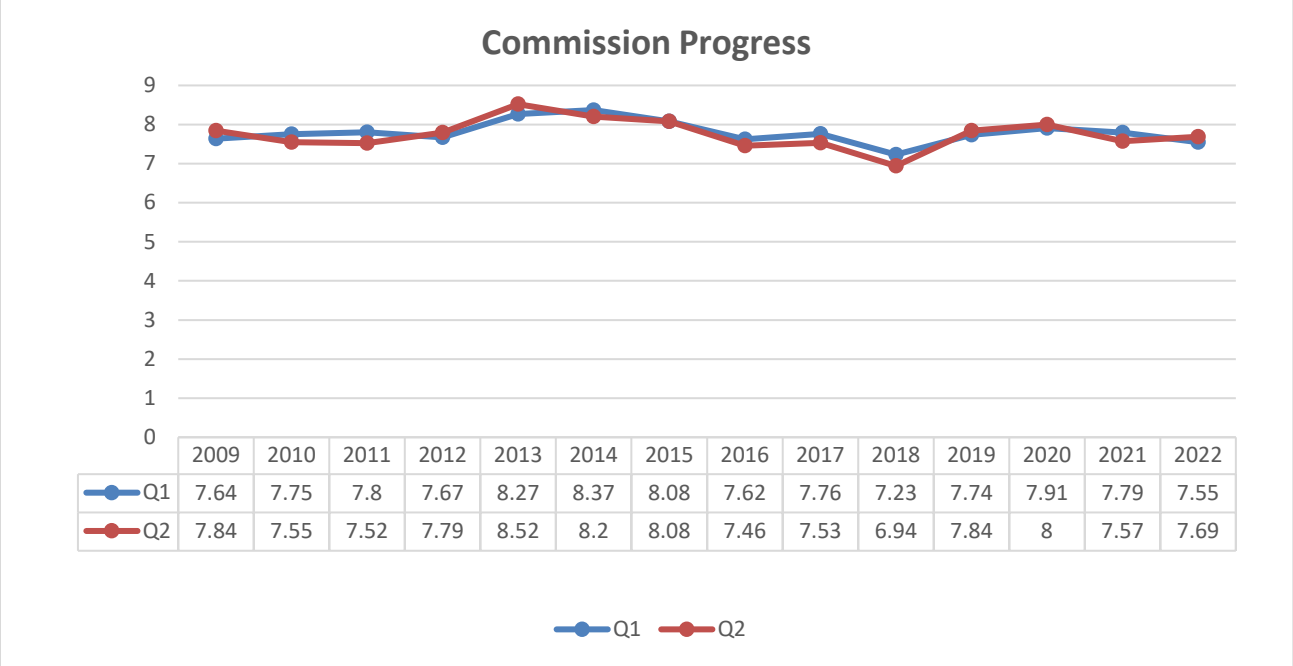
MEMORANDUM

SUBJECT: 2022 Commissioner Survey Results
TO: ISFMP Policy Board
FROM: Alexander Law
DATE: January 23, 2022

29 Commissioners and Proxies completed the 2022 ASMFC Commissioner Survey, which is based on the Commission's 2019-2023 Strategic Plan. Questions 1-16 prompted respondents to rate their answer on a scale of 1 to 10 (ten-point Likert scale) and questions 17-21 prompted respondents to provide a written response. Questions 7, 8, 14 and 15 were new to the 2015 survey and Question 16 was added in 2020.

This memo includes graphs tracking responses for questions 1-16 throughout the time-series (2009-2022), a summary of the five open-ended questions for 2022, and unabridged responses to the five open-ended questions.

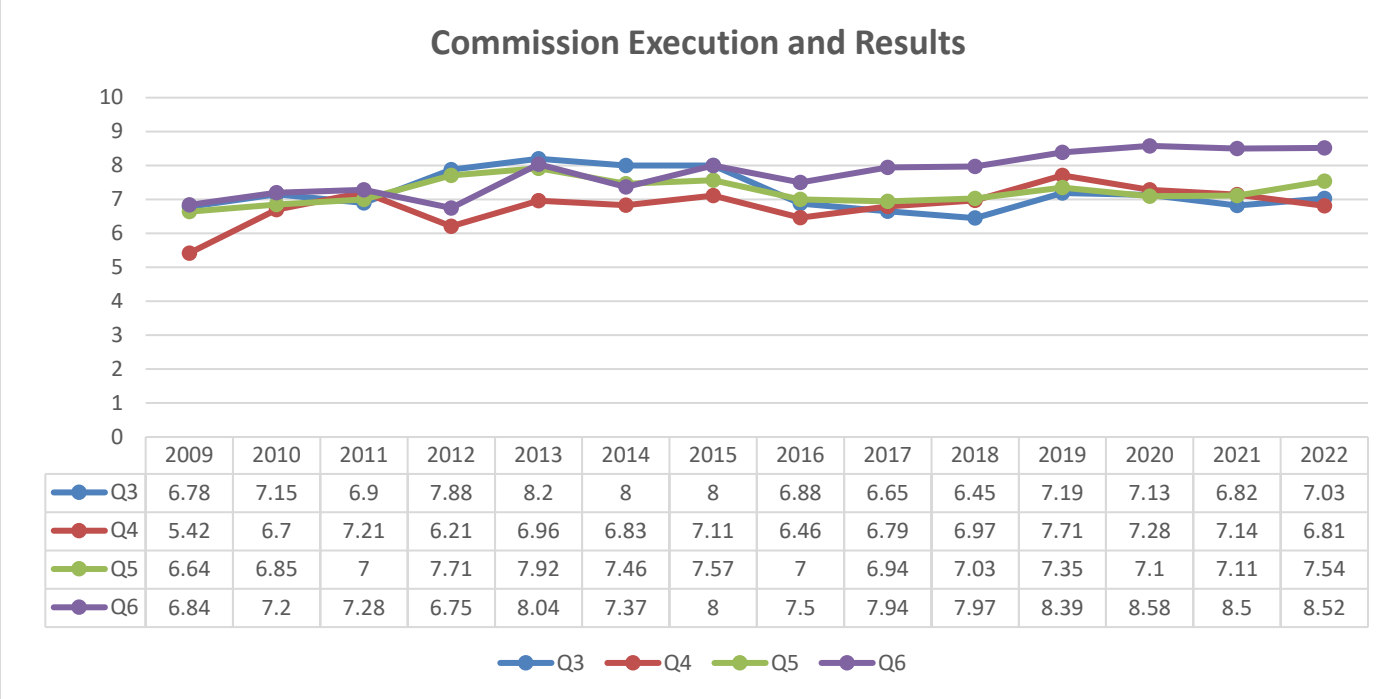
Commission Progress
1. How comfortable are you that the Commission has a clear and achievable plan to reach the Vision (Sustainably managing Atlantic Coastal Fisheries)?
2. How confident are you that the Commission's actions reflect progress toward its Vision?



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Q1	7.64	7.75	7.8	7.67	8.27	8.37	8.08	7.62	7.76	7.23	7.74	7.91	7.79	7.55
Q2	7.84	7.55	7.52	7.79	8.52	8.2	8.08	7.46	7.53	6.94	7.84	8	7.57	7.69

Commission Execution and Results

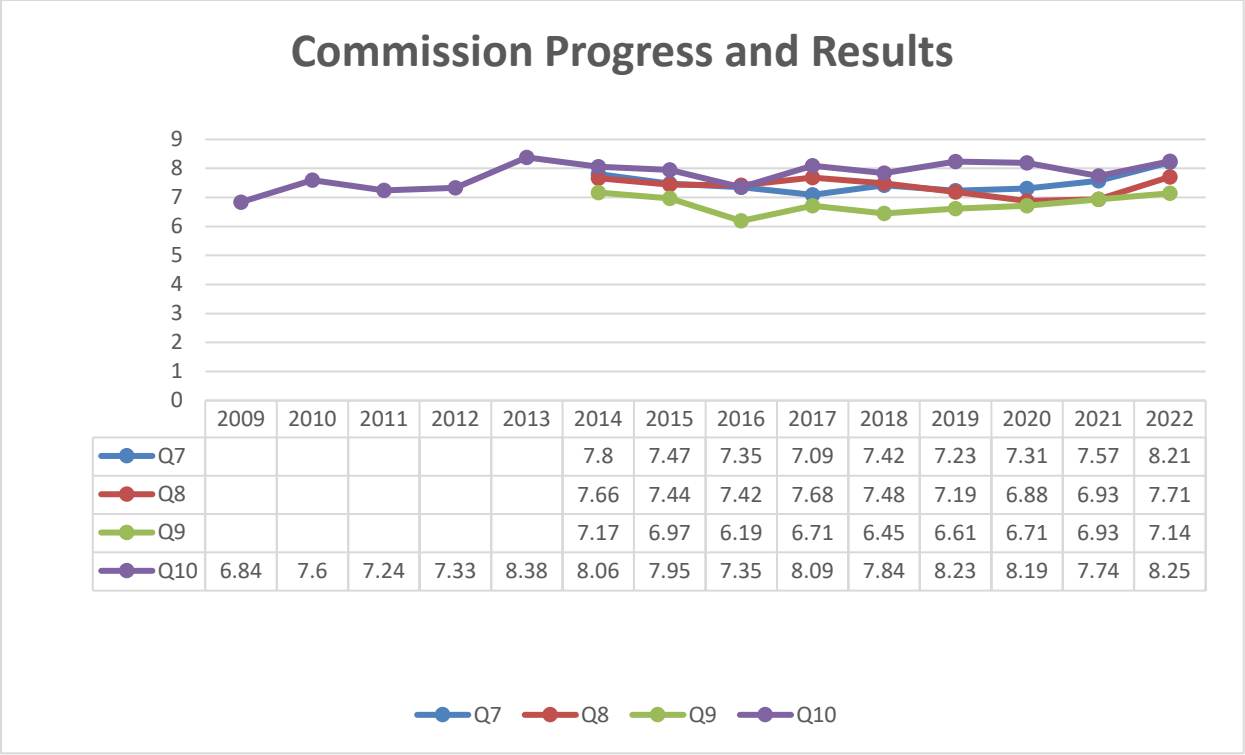
3. How satisfied are you with the cooperation between Commissioners to achieve the Commission's Vision?
4. How satisfied are you that the Commission has an appropriate level of cooperation with federal partners?
5. How satisfied are you with the Commission's working relationship with our constituent partners (commercial, recreational, and environmental)?
6. How satisfied are you with the Commission's effort and success in securing adequate fiscal resources to support management and science needs?



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Q3	6.78	7.15	6.9	7.88	8.2	8	8	6.88	6.65	6.45	7.19	7.13	6.82	7.03
Q4	5.42	6.7	7.21	6.21	6.96	6.83	7.11	6.46	6.79	6.97	7.71	7.28	7.14	6.81
Q5	6.64	6.85	7	7.71	7.92	7.46	7.57	7	6.94	7.03	7.35	7.1	7.11	7.54
Q6	6.84	7.2	7.28	6.75	8.04	7.37	8	7.5	7.94	7.97	8.39	8.58	8.5	8.52

Commission Progress and Results

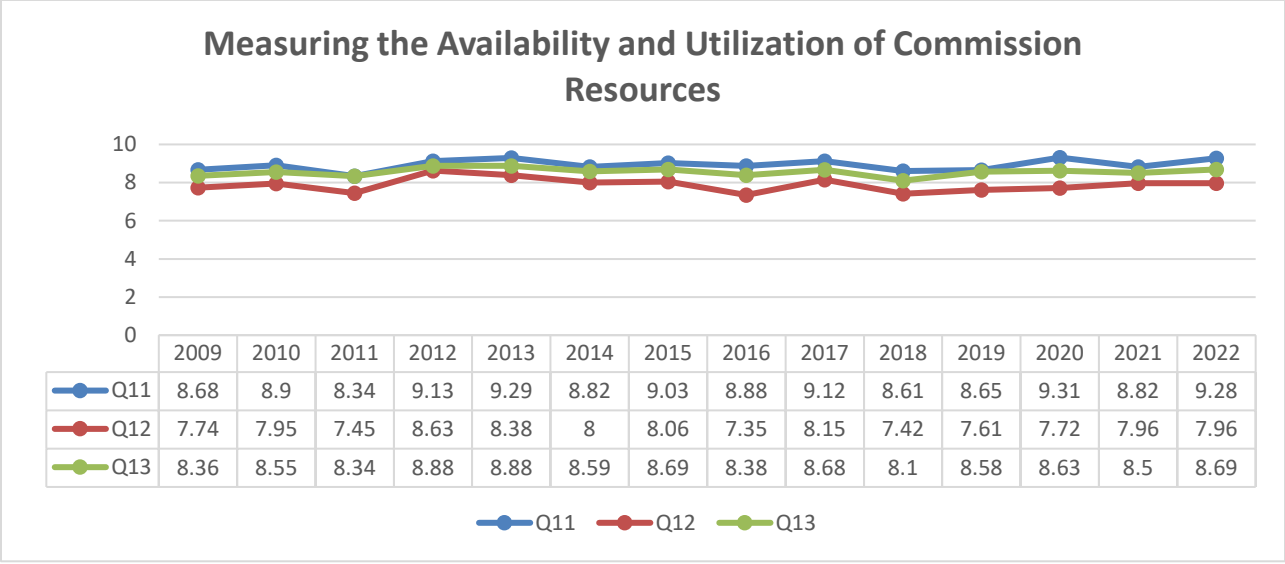
7. One of the metrics the Commission uses to measure progress is tracking the number of stocks where overfishing is no longer occurring. Is this a clear metric to measure progress?
8. How satisfied are you with the Commission's progress to end overfishing?
9. Are you satisfied with the Commission's ability to manage rebuilt stocks?
10. How satisfied are you with the Commission's efforts to engage with state legislators and members of Congress?



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Q7						7.8	7.47	7.35	7.09	7.42	7.23	7.31	7.57	8.21
Q8						7.66	7.44	7.42	7.68	7.48	7.19	6.88	6.93	7.71
Q9						7.17	6.97	6.19	6.71	6.45	6.61	6.71	6.93	7.14
Q10	6.84	7.6	7.24	7.33	8.38	8.06	7.95	7.35	8.09	7.84	8.23	8.19	7.74	8.25

Measuring the Availability and Utilization of Commission Resources

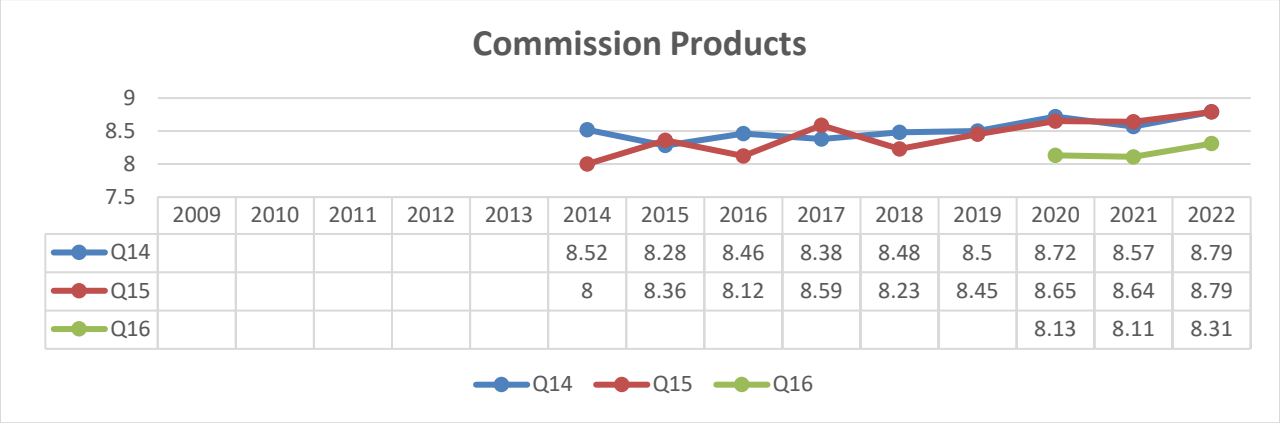
11. How satisfied are you that the Commission efficiently and effectively utilizes available fiscal and human resources?
12. How comfortable are you with the Commission's performance in reacting to new information and adapting accordingly to achieve Commission Goals?
13. The Commission has a limited scope of authority. How comfortable are you that the Commission spends the appropriate amount of resources on issues within its control?



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Q11	8.68	8.9	8.34	9.13	9.29	8.82	9.03	8.88	9.12	8.61	8.65	9.31	8.82	9.28
Q12	7.74	7.95	7.45	8.63	8.38	8	8.06	7.35	8.15	7.42	7.61	7.72	7.96	7.96
Q13	8.36	8.55	8.34	8.88	8.88	8.59	8.69	8.38	8.68	8.1	8.58	8.63	8.5	8.69

Commission Products

14. How satisfied are you with the products of the ISFMP Department?
15. How satisfied are you with the products of the Science Department?
16. How satisfied are you with the products ACCSP?



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Q14						8.52	8.28	8.46	8.38	8.48	8.5	8.72	8.57	8.79
Q15						8	8.36	8.12	8.59	8.23	8.45	8.65	8.64	8.79
Q16												8.13	8.11	8.31

Discussion Question Summaries

Obstacles to the Commission's success in rebuilding stocks (Q17) that were mentioned are known concerns that have been brought up in the past. These include concerns about unpredictable and changing environmental conditions due to climate change, a lack of adaptability when responding to these factors, as well as regulatory impacts. Equitable sacrifice across states and regions, and having those states and regions buy into hard management decisions were also mentioned.

The most **useful products produced by the Commission (Q18)** include staff knowledge and availability; science trainings; meeting materials and summaries; ISFMP and science products (stock assessments, compliance reports, FMPs, and amendments/addenda); and www.asmfc.org.

Additional products the Commission could provide (Q19) include earlier access to Meeting Week materials, summaries of lengthy documents, easier access to graphs and tables from Commission products, an archive of past materials, outreach products, regulation summaries, calendar reminders of pertinent events, and Fishery Performance Reports for ASMFC managed species on a frequent basis.

Issues the Commission should focus on more (Q20) include: creating new methods for responding to shifting stocks; improving the understanding of recreational fishing data; improving our risk and uncertainty tools; adapting management to changing environmental conditions; cooperating with federal partners; making Commission products concise and easy to understand; conducting more frequent stock assessments for species; improving the efficiency of meetings, even possibly switching to virtual meetings to make better use of resources; real-time science on fish conditions/populations and timely recommendations; engagement with competing uses and protected species issues; ecosystem-based management; need new weakfish and shad/river herring assessments.

Additional comments (Q21)

Q21 answers shared praise for the work of ASMFC and ACCSP, especially in navigating challenging topics and the ability to weather the pandemic. Some comments reiterated the challenges we must address. These include structural issues in our relationships with Fishery Management Councils and federal partners, sometimes limited participation in the commission, and sluggish management in dynamic environments.

Unabridged Answers to Questions 17-20

Q17 What is the single biggest obstacle to the Commission's success in rebuilding stocks?

1. Climate change and other environmental elements that cannot be controlled by fisheries management
2. Environmental factors, both natural and anthropogenic, which affect reproductive success and recruitment.
3. Unknown future environmental conditions
4. States not working for the greater good
5. Trying to plan for and manage around elements out of their control, such as congressional or federal changes in law.
6. Delay in updating stock assessments.
7. Being able to adjust management strategies when stocks do not seem to be responding to current regulatory approaches, and being able to understand and address additional factors that may be driving stock health (other than reducing F).
8. environmental factors influence on year class strength and survival
9. managing competing interests of a wide variety of stakeholders
10. Differences between states needs and cooperation and quick data and assessments
11. Gaining public acceptance for making hard decisions.
12. The effort stress on our stocks. There must be a reduction in effort.
13. Getting exact data
14. Achieving equitable sacrifice across states and regions. In the effort to achieve equitable sacrifice CE is both a valuable tool and a significant challenge.
15. Lack of capacity to complete more frequent and timely stock assessments
16. Education/cooperation between recreational and commercial stakeholders
17. Climate change uncertainty
18. Climate change
19. Our biggest challenge is that there are a multitude of factors which can lead to an overfished stock status but we only have control over one of those factors: fishing. This is not unique to ASMFC, but is a challenge for species which are hampered by changing environments
20. Habitat & water quality issues
21. Environmental conditions
22. "Process is way too cumbersome and is becoming increasingly bureaucratic, as it sometimes involves two or three Councils and NOAA having to adopt similar regulations. If that were not complicated enough, depending on species, 15 states then need to do the same thing. Due to the number of agencies involved, it is sometimes nearly impossible to change regulations, even though logic would dictate a different course of action. If you factor in all the staff time and expense, regulatory process, NOAA time, Council time, state time, etc. likely the cost exceeds the net economic benefit we get from the resource, good example is likely dogfish. Need to get on with a planning project or white paper that develops regulatory alternatives to current system, particularly in light of the rate climate change. Exercise should involve a small subcommittee /work group composed of some State and Federal agencies and recommend actions and legislative changes if needed. Commissioners should receive periodic update. Would be useful to set a deadline for final report.
23. Hard to pick one, but the biggest obstacle seems to be that some stocks don't seem respond to management actions (e.g. weakfish harvest restrictions have been in place for over a decade, yet the stock still hasn't rebuilt).
24. stakeholders pushing back on commissioners to maintain status quo when the science clearly shows action needs to be taken. Politicians influencing commissioners on particularly issues on behalf of those stakeholders.
25. NGOs.
26. The difference in scientific-biological-management approach by GARFO and ASMFC

27. Federal partners and climate change

Q18 What are the most useful products the Commission produces for you?

1. The help with relief funding was extremely useful, the help with contracting employees is extremely useful, and the trainings are always an important supplement for staff in the states
2. Stock assessments and updates to fishery management plans
3. Commission meeting prep material.
4. All are useful and appreciated
5. Effectively all of those from the ISFMP and Science Team.
6. Fishery management plans. However, there is much room for improvement as it pertains to timeliness, clarity, and straightforward communication of issues.
7. Easy online access to the robust collection of historical and current materials featured on each species webpage.
8. website and availability of reports/products there
9. meeting prep materials are very helpful and well written.
10. "Staff knowledge, staff availability, assessments"
11. Status of stocks reports that I can understand and download if I need to summarize them for in-state and other groups.
12. Survey data.
13. Regulations on menhaden and striped bass
14. Meeting materials and the info on the website.
15. Public hearings, website, meeting materials
16. Summaries
17. Assessment summaries; weekly Commissioner emails; post-meeting press releases
18. Meeting materials
19. Stock assessments and addenda/amendments to change fishery management plans.
20. Briefing material for meetings, Atlantic Coast Fisheries News, website content
21. Meeting materials/annual report
22. current products are all useful
23. The FMPs, assessments, and meeting archives that are available on the web site are all great resources. The Commission does an excellent job with all of its reports.
24. "Meeting summaries. The overall assistance provided by staff"
25. "Legislative Updates. Stock Assessment Reports."
26. Communication and resolve amongst regional allocations.
27. stock assessment and public hearing documents

Q19 What additional products could the Commission create to make your job easier?

1. Nothing additional I can think of
2. ?
3. Reading materials in farther advance of meetings would be great. But I understand the challenges with being able to do so.
4. Simpler communication of stock status for each species including inclusion of ratios that quantify the extent of overfished or overfishing status.
5. Nothing comes to mind.
6. convenient archive of states' compliance reports
7. existing products are enough
8. More information and contact with congressional processes and meet and greets.
9. Easy access to Power Point presentations presented to the Commission including those produced by partner agencies like the Councils for jointly managed species.
10. Single data point making clear the staff's projection for stock replenishment.
11. ?

12. Outreach products
13. Calendar subscriptions/reminders so we can be informed when TC/PRT/PDT meetings are scheduled
14. Better outlines and summaries
15. ??
16. None - I have appreciated the addition of a link to track quota transfers between states
17. Fishery Performance Reports for ASMFC-only species every 2-3 years if annually is impractical. I think they would provide additional context to the FMP Reviews and possibly improve AP member engagement.
18. regulation summaries by state
19. Maybe more one-page summary sheets of changes in draft Addenda and Amendments for distribution to the public.
20. I am not sure

Q20 What issue(s) should the Commission focus more attention/time on?

1. New methods to shift allocations relative to where resources are, continued progress on assessment technology, continued work on how we deal with risk and uncertainty in our decisions (making progress but need to keep development moving forward), development of work to better understand recreational fisheries (data, socio-econ science).
2. I believe the Commission is currently focusing on the priority issues. However, there are a growing number of issues that can't be affected by Commission authority but have tremendous impacts on our ability to successfully prevent overfishing, rebuilt stocks, and have viable fisheries. These include protected species interactions with existing fisheries and competing uses of the estuarine and ocean environment. The Commission must engage in these and other issues when there is an opportunity to effect outcomes that contribute to successful interstate management.
3. Time allocation at meeting and our rules
4. Implementation of some of the endeavors it has been working on, such as the risk and uncertainty policy.
5. Development of cutting-edge stock assessment techniques that allow for quick updates at least every 2 years. Periods that often range five years between updates is agonizingly slow and continues to subject ASMFC to public distrust.
6. Inevitably, incorporating ecobased and climate factors into fisheries resource management considerations is going to need more attention, but also brings a level of complexity to decision making in a world that is still dominated a by single-species, individual stock assessment focus. Big challenge for the future.
7. equity of recreational regulations
8. handling access to fully rebuilt stocks
9. ecosystem management and quicker assessments
10. Figuring out what it will take to restore depleted species as well as overfished species.
11. Regional cooperation. For instance, Virginia and MD with Potomac (for certain species) have not coordinated to the degree they should.
12. Weak Fish River Herring and Shad
13. Habitat and conservation issues and needs that impact coastal fish stocks.
14. Working with federal partners to improve recreational data collection
15. Education
16. Climate change impacts - how to adapt the ASMFC management framework (more nimble) and deal with shifting stocks in Commission work (allocation)
17. Climate change impacts on fisheries management

18. I ranked collaboration with federal partners the lowest of all the questions, but this also goes both ways. I think NOAA could also be a better partner with the Commission, particularly on jointly managed species.
19. Weakfish stock assessment--it's time to get an updated stock status & review management that's been in place for over 10 years.
20. Not sure we are using our collective time efficiently, given the large number of individuals involved and the cost of meeting four times a year. A large portion of meetings is dedicated to reports and technical updates on lower priority species, frequently where there are very limited discussion or questions. Although informative, it might not be good use of our time. Some combination of virtual meetings focused on technical updates, and actual meetings might be better. Clearly the technical updates are critical when involved with major species and changes in management strategy, and should be done in person at a two-day meeting. Importance of two days is it gives Commissioner time to hear the presentation, ask questions directly, discuss it with technical staff, and then discuss it with other Commissioners over dinner.
21. Unfortunately, focusing more attention time on one issue will mean less time on other issues. I think ASMFC does a good job of putting the major focus on managing the ASMFC species, but from climate change to improving MRIP, there sure are a lot of issues that deserve attention.
22. Allocation issues that are fair, equitable, and re-evaluated on a regular basis (3-5 yrs)
23. Sector Separation.
24. putting an end to joint mange plans and look at the way for ASMFC to address EJ issues

Q21 Additional comments.

1. The Commission is a very effective agency!
2. Nonetheless
3. 2022 was a hard year for the Commission with so many hearings and challenging topics needing to be addressed. I commend the ASMFC team for all that they were able to accomplish, especially as we came out of the pandemic.
4. Can't say enough about the quality of work, professionalism, and cooperative/helpful nature of staff and leadership. Their efforts make the job of a commissioner much easier, and contribute significantly to the success of the Commission.
5. Keep up the good work!
6. Retaining well qualified staff is always a challenge especially given the high caliber of the existing staff at all levels.
7. The continued evolution of our role with the Fishery Management Councils is a challenge for all Commissioners, especially LGAs. Added time commitments and possibly even pay for ASMFC LGAs when dealing with jointly managed species via extra meetings beyond the quarterly ASMFC meeting weeks is a subject that should be deliberated and carefully considered even if it breaks with tradition.
8. The staff has always been excellent. However, participation from the Commissions tends to skew towards a handful. From the political appointee's perspective there appears to be a lack of out of meeting briefing thereby allowing the Commissioners to control the debate. There should be more outreach on at least the most vulnerable species to educate and update the political appointees.
9. When we find a species overfished, we are too slow to react.
10. I think the Commission is in a great place with respect to cooperation between states/jurisdictions. I think there are serious structural problems for some species we co-manage with federal partners (scup, seabass) that are an existential threat to Atlantic coast interstate fisheries management.
11. Looking forward to 2023

12. As always, the staff are great. The ISFMP staff have really performed in 2022 with some big issues, including striped bass Amendment 7 and Menhaden re-allocation. Those are big lifts and were handled very professionally.
13. Keep up the great work!
14. ASMFC from Director to the Administrative Staff all show such dedication to the ASMFC mission. It is a pleasure to work with ASMFC.
15. I am having a hard time accepting that there is no responsibility among many commissioners for shutting the substance and poor anglers from taking legal fish because of regulation

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MEMORANDUM

TO: **Sciaenids Management Board**

FROM: **Atlantic Croaker and Spot Technical Committees and Stock Assessment Subcommittee**

DATE: **January 20, 2023**

SUBJECT: **Draft Terms of Reference and Schedule for the 2024 Atlantic Croaker and Spot Benchmark Stock Assessments**

The next Atlantic croaker and spot benchmark stock assessments are scheduled to be completed in 2024. The Technical Committees for both species and the Stock Assessment Subcommittee have recommended the Board consider the following terms of reference for the benchmark stock assessment and peer review panel:

Terms of Reference for the Atlantic Croaker and Spot Assessments

1. Define population structure based on available data. If alternative population structures are used in the models (e.g., coast-wide or regional), justify use of each population structure. Explore possible impacts of environmental change on range shifts.
2. Evaluate new information on life history such as growth rates, size-at-maturation, natural mortality rate, and migrations and review potential impacts of environmental change on these characteristics. Explore possible impacts of environmental change on life history characteristics.
3. Characterize precision and accuracy of fishery-dependent and fishery-independent data used in the assessment, including the following but not limited to:
    a. Provide descriptions of each data source (e.g., geographic location, sampling methodology, potential explanation for outlying or anomalous data).
    b. Describe calculation and potential standardization of abundance indices. Consider the consequences of environmental factors on the estimates of abundance or relative indices derived from surveys.
    c. Discuss trends and associated estimates of uncertainty (e.g., standard errors).
    d. Justify inclusion or elimination of available data sources.
    e. Discuss the effects of data strengths and weaknesses (e.g., temporal and spatial scale, gear selectivities, ageing accuracy, sample size) on model inputs and outputs.
4. Develop models used to estimate population parameters (e.g., *F*, biomass, abundance) and biological reference points, and analyze model performance.

a. Briefly describe history of model usage, its theory and framework, and document associated peer-reviewed literature. If using a new model, test using simulated data.

b. Clearly and thoroughly explain model strengths and limitations.

c. Justify choice of CVs, effective sample sizes, or likelihood weighting schemes.

d. Describe stability of model (e.g., ability to find a stable solution, invert Hessian).

e. Perform sensitivity analyses for starting parameter values, priors, etc. and conduct other model diagnostics as necessary.

f. Perform likelihood profile of key parameters (e.g., stock-recruit relationship parameters) to evaluate robustness of final parameter values.

g. If multiple models were considered, justify the choice of preferred model and the explanation of any differences in results among models.

5. State assumptions made for all models and explain the likely effects of assumption violations on synthesis of input data and model outputs. Examples of assumptions may include (but are not limited to):

    a. Choice of stock-recruitment function.

    b. No error in the catch-at-age or catch-at-length matrix.

    c. Calculation of *M*. Choice to use (or estimate) constant or time-varying *M* and catchability.

    d. Choice of equilibrium reference points or proxies for MSY-based reference points.

    e. Choice of a plus group for age-structured species.

6. Characterize uncertainty of model estimates and biological or empirical reference points.

7. Perform retrospective analyses, assess magnitude and direction of retrospective patterns detected, and discuss model consistency due to implications of any observed retrospective pattern for uncertainty in population parameters (e.g., *F*, SSB), reference points, and/or management measures.

8. Recommend stock status as related to reference points (if available).

9. Compare stock status and management advice from the assessment with the results of the traffic light analysis currently used for management. If outcomes differ, discuss potential causes of observed discrepancies and preferred method.

10. If a minority report has been filed, explain majority reasoning against adopting approach suggested in that report. The minority report should explain reasoning against adopting approach suggested by the majority.

11. Develop detailed short and long-term prioritized lists of recommendations for future research, data collection, and assessment methodology. Highlight improvements that would be beneficial to the next benchmark.

12. Recommend timing of next benchmark assessment and intermediate updates, if necessary relative to biology and current management of the species.

Terms of Reference for the Atlantic Croaker and Spot Peer Review

1. Evaluate the population structure defined by the assessment and used in the models.
2. Evaluate the new information on life history and the influence of environmental change on life history characteristics as presented in the stock assessment.
3. Evaluate the thoroughness of data collection and the presentation and treatment of fishery-dependent and fishery-independent data in the assessment, including the following but not limited to:
    a. Presentation of data source variance (e.g., standard errors).
    b. Justification for inclusion or elimination of available data sources.
    c. Consideration of data strengths and weaknesses (e.g., temporal and spatial scale, gear selectivities, aging accuracy, sample size).
    d. Calculation and/or standardization of abundance indices.
    e. Consideration of the potential impacts of environmental change.
4. Evaluate the methods and models used to estimate population parameters (e.g., *F*, biomass, abundance) and biological reference points, including but not limited to:
    a. Evaluate the choice and justification of the preferred model(s). Was the most appropriate model (or model averaging approach) chosen given available data and life history of the species?
    b. If multiple models were considered, evaluate the analysts' explanation of any differences in results.
    c. Evaluate model parameterization and specification (e.g., choice of CVs, effective sample sizes, likelihood weighting schemes, calculation/specification of *M*, stock-recruitment relationship, choice of time-varying parameters, plus group treatment).
5. Evaluate the diagnostic analyses performed, including but not limited to:
    a. Sensitivity analyses to determine model stability and potential consequences of major model assumptions.
    b. Retrospective analysis.

6. Evaluate the methods used to characterize uncertainty in estimated parameters. Ensure that the implications of uncertainty in technical conclusions are clearly stated.

7. If a minority report has been filed, review minority opinion and any associated analyses. If possible, make recommendation on current or future use of alternative assessment approach presented in minority report.

8. Recommend best estimates of stock biomass, abundance, and exploitation from the assessment for use in management, if possible, or specify alternative estimation methods.

9. Evaluate the choice of reference points and the methods used to estimate them. Recommend stock status determination from the assessment, or, if appropriate, specify alternative methods/measures.

10. Review the research, data collection, and assessment methodology recommendations provided by the SAS and TC and make any additional recommendations warranted. Clearly prioritize the activities needed to inform and maintain the current assessment, and provide recommendations to improve the reliability of future assessments.

11. Recommend timing of the next benchmark assessment and updates, if necessary, relative to the life history and current management of the species.

12. Prepare a peer review panel terms of reference and advisory report summarizing the panel's evaluation of the stock assessment and addressing each peer review term of reference. Develop a list of tasks to be completed following the workshop. Complete and submit the report within four weeks of workshop conclusion.

Proposed 2024 Assessment Schedule for Atlantic Croaker and Spot:

- January 2023: Circulate data request forms to TCs
- Mid-March 2023: Data templates due with a 2022 terminal year
- Mid-April 2023: Landings validated via ACCSP and data contacts
- May 2023: Data Workshop (virtual)
- September 2023: Assessment Workshop I (virtual or in-person)
- February 2024: Assessment Workshop II (virtual or in-person)
- Summer 2024: Peer Review Workshop
- Annual Meeting 2024: Present Assessment and Peer Review Reports to the Sciaenids Management Board

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MEMORANDUM

TO: **Sciaenids Management Board**

FROM: **Red Drum Technical Committee and Stock Assessment Subcommittee**

DATE: **January 20, 2023**

SUBJECT: **Draft Terms of Reference and Schedule for the 2024 Red Drum Benchmark Assessment**

The next red drum benchmark stock assessment is scheduled to be completed in 2024. This assessment follows the Simulation Assessment that was completed in 2022. The Red Drum Technical Committee and Stock Assessment Subcommittee have recommended the Board consider the following terms of reference for the benchmark assessment and peer review panel:

Terms of Reference for the Red Drum Assessment

1. Evaluate Simulation Assessment Peer Review Panel recommendations for the simulation-based analyses used to guide assessment approaches in this benchmark assessment.

2. Provide descriptions of each fishery-dependent and fishery-independent data source.
    a. Describe calculation and potential standardization of abundance indices.
    b. Discuss trends and associated estimates of uncertainty (e.g., standard errors).
    c. Justify inclusion or elimination of available data sources.

3. Develop model(s) used to estimate population parameters (e.g., F, abundance) and reference points, and analyze model performance.
    a. Describe stability of model (e.g., ability to find a stable solution, invert Hessian).
    b. Justify choice of CVs, effective sample sizes, or likelihood weighting schemes.
    c. Perform sensitivity analyses for starting parameter values, priors, etc. and conduct other model diagnostics as necessary.
    d. Clearly and thoroughly explain model strengths and limitations.
    e. Briefly describe history of model usage, its theory and framework, and document associated peer-reviewed literature.
    f. If modeling approaches differ from those recommended during the Simulation Assessment, discuss divergence from these recommendations.

4. Discuss the effects of data strengths and weaknesses (e.g., temporal and spatial scale, gear selectivities, aging accuracy, sample size) on model inputs and outputs.

5. State assumptions made for all models and explain the likely effects of assumption violations on synthesis of input data and model outputs. Examples of assumptions may include (but are not limited to):
    a. Choice of stock-recruitment function.
    b. Calculation of M. Choice to use (or estimate) constant or time-varying M and catchability.
    c. Choice of reference points.
    d. Choice of a plus group.
    e. Constant ecosystem (abiotic and trophic) conditions.

6. Characterize uncertainty of model estimates and reference points.

7. Perform retrospective analyses, assess magnitude and direction of retrospective patterns detected, and discuss implications of any observed retrospective pattern for uncertainty in population parameters (e.g., F, abundance), reference points, and/or management measures.

8. Recommend stock status as related to reference points (if available). For example:
    a. Is the stock below the biomass threshold?
    b. Is F above the threshold?

9. Other potential scientific issues:
    a. Compare trends in population parameters and reference points with current and proposed modeling approaches. If outcomes differ, discuss potential causes of observed discrepancies.
    b. Compare reference points derived in this assessment with what is known about the general life history of the exploited stock. Explain any inconsistencies.

10. If a minority report has been filed, explain majority reasoning against adopting approach suggested in that report. The minority report should explain reasoning against adopting approach suggested by the majority.

11. Develop detailed short and long-term prioritized lists of recommendations for future research, data collection, and assessment methodology.

12. Recommend timing of next benchmark assessment and intermediate updates, if necessary, relative to biology and current management of red drum.

Terms of Reference for the Red Drum Peer Review

1. Evaluate responses to Simulation Assessment Peer Review Panel recommendations.

2. Evaluate the thoroughness of data collection and the presentation and treatment of fishery-dependent and fishery-independent data in the assessment, including the following but not limited to:
    a. Presentation of data source variance (e.g., standard errors).
    b. Justification for inclusion or elimination of available data sources.
    c. Consideration of data strengths and weaknesses (e.g., temporal and spatial scale, gear selectivities, aging accuracy, sample size).
    d. Calculation and/or standardization of abundance indices.

3. Evaluate the methods and models used to estimate population parameters (e.g., F, abundance) and reference points, including but not limited to:
    a. If modeling approaches differ from those recommended during the Simulation Assessment, were these differences warranted and appropriate?
    b. Evaluate the choice and justification of the preferred model(s). Was the most appropriate model (or model averaging approach) chosen given available data and life history of red drum?
    c. Evaluate model parameterization and specification (e.g., choice of CVs, effective sample sizes, likelihood weighting schemes, calculation/specification of M, stock-recruitment relationship, choice of time-varying parameters, plus group treatment).

4. Evaluate the diagnostic analyses performed, including but not limited to:
    a. Sensitivity analyses to determine model stability and potential consequences of major model assumptions.
    b. Retrospective analysis.

5. Evaluate the methods used to characterize uncertainty in estimated parameters. Ensure that the implications of uncertainty in technical conclusions are clearly stated.

6. If a minority report has been filed, review minority opinion and any associated analyses. If possible, make recommendation on current or future use of alternative assessment approach presented in minority report.

7. Recommend best estimates of stock biomass, abundance, and exploitation from the assessment for use in management, if possible, or specify alternative estimation methods.

8. Evaluate the choice of reference points and the methods used to estimate them. Recommend stock status determination from the assessment, or, if appropriate, specify alternative methods/measures.

9. Review the research, data collection, and assessment methodology recommendations provided by the TC and make any additional recommendations warranted. Clearly prioritize the activities needed to inform and maintain the current assessment, and provide recommendations to improve the reliability of future assessments.

10. Review the recommended timeframe for future assessments provided by the TC and recommend any necessary changes.

11. Prepare a peer review panel terms of reference and advisory report summarizing the panel's evaluation of the stock assessment and addressing each peer review term of reference. Develop a list of tasks to be completed following the workshop. Complete and submit the report within 4 weeks of workshop conclusion.

Proposed 2024 Red Drum Benchmark Stock Assessment Timeline

- Data request: January 30, 2023
- Data deadline: May 30, 2023
- Data Workshop: June 2023
- Assessment Workshop 1: October 2023
- Assessment Workshop 2 (finalize model results/stock status determination): March 2024
- Assessment report draft finalized by SAS: Mid-May 2024
- Assessment reviewed by TC: Early June 2024
- Assessment report provided to SEDAR for peer review panel: July 1, 2024
- SEDAR Peer Review Workshop: Week of August 12, 2024
- Present Assessment and Peer Review Reports to the Board: Annual Meeting 2024