

SEDAR 103: US Caribbean Application of Alternate Assessment Methods

Scoping Webinar

January 16, 2026 | 1 – 3 PM ET

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UNIVERSITY OF MIAMI
COOPERATIVE INSTITUTE
for MARINE & ATMOSPHERIC
STUDIES



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Goal of SEDAR 103

- **What we want to achieve:** identify potential analytical methods to provide management advice for the federally managed species of the US Caribbean
- **Process:**
 - **Data scoping (Webinars)**
 - Identify data sources and analytical methods
 - **Methods Development (Workshop)**
 - Review and recommend analytical methods
 - **Methods Application (Webinars)**
 - Apply and test the recommended methods
 - **Review Workshop**
 - CIE review



Scoping Webinar Outline

- Terms of Reference
- Method Expertise
- Data Availability
- Working Papers
- Reference Documents
- Next Steps
- Comments and Questions

Terms of Reference

- **Methods Development (Workshop)**
 - Review and recommend alternative approaches to single species assessments for application in the US Caribbean

- **Methods Application (Webinars)**
 - Apply and test the recommended methods

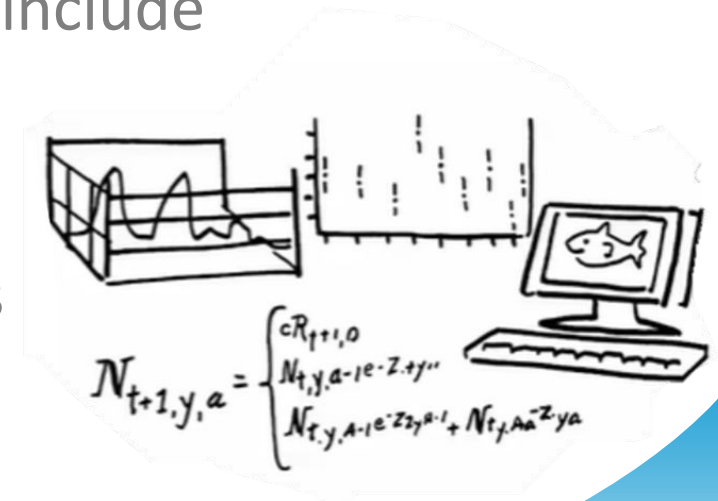
Terms of Reference: Methods Development

1. Review SEFSC data triage efforts for US Caribbean species and determine what types of alternative methods may be feasible for implementation.



Terms of Reference: Methods Development

2. Examine non-traditional approaches to single species assessments to provide information for consideration in management. Additionally, consider novel ecosystem-based fishery management approaches that have not been applied in the US Caribbean. Approaches to be evaluated might include (but not limited to):
 - a. ecosystem reference points
 - b. ecosystem productivity or biodiversity approaches
 - c. portfolio approach
 - d. empirical management procedures



[Terms of Reference](#) | [Method Expertise](#) | [Data Availability](#) | [Working Papers and Reference Documents](#) | [Next Steps](#) | [Comments and Questions](#)

Terms of Reference: Methods Development

3. For the species listed in the island-based FMPs, provide recommendations of specific analytical procedures for developing management advice that will meet legal mandates when using tools that are alternative or complementary to conventional stock assessment.
4. Provide research recommendations to advance development and implementation of other methods and necessary data collection that could be most easily applied in the US Caribbean; i.e., tools that are alternative or complementary to conventional stock assessment.



[Terms of Reference](#) | [Method Expertise](#) | [Data Availability](#) | [Working Papers and Reference Documents](#) | [Next Steps](#) | [Comments and Questions](#)

Terms of Reference: Methods Development

5. Prepare a report documenting the methods and analyses reviewed and the recommendations made by the panel.



Terms of Reference: Methods Development

5. Prepare a report documenting the methods and analyses reviewed and the recommendations made by the panel.

Practicality



Terms of Reference: Methods Application

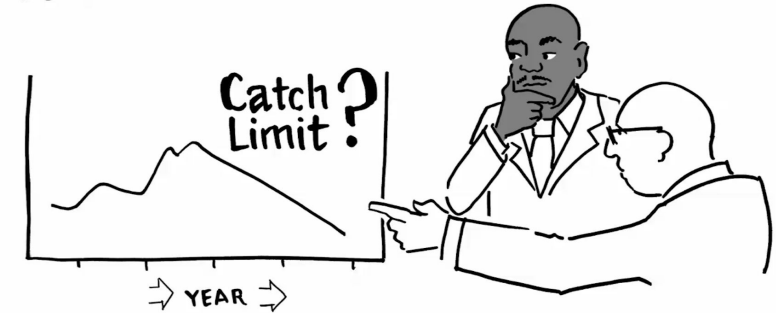
1. Apply approaches recommended at the method development workshop to some or all of the species listed in the island-based FMPs.
2. Review and recommend analytical approaches to ensure that the results are scientifically sound and following the review and consent of the SSC will provide information useful for management advice.
3. Provide recommendations to guide future SEDAR assessments in the US Caribbean.



Terms of Reference: Methods Application

4. Provide recommendations to further the development of analytical methods and necessary data collection that could be most easily applied in the US Caribbean; i.e., tools that are alternative or complementary to conventional stock assessment.
5. Prepare a report documenting the application of recommended approaches to species listed in the island-based FMPs. Evaluate and discuss the strengths and weaknesses of the methods used given the available data.

Stock Assessment



[Terms of Reference](#) | [Method Expertise](#) | [Data Availability](#) | [Working Papers and Reference Documents](#) | [Next Steps](#) | [Comments and Questions](#)

Method Expertise



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Method Expertise

Single Species



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Method Expertise

Single Species

Data-Limited



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Method Expertise

Single Species

Data-Limited

MSE



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Method Expertise

Single Species

Multi-Species

Data-Limited

MSE



Terms of Reference | [Method Expertise](#) | Data Availability | Working Papers and Reference Documents | Next Steps | Comments and Questions

Method Expertise

Single Species

Multi-Species

Data-Limited

Multi-Indicator

MSE



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Method Expertise

Single Species

Multi-Species

Data-Limited

Multi-Indicator

MSE

Ecosystem



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Method Expertise

Single Species

Multi-Species

Data-Limited

Multi-Indicator

MSE

Ecosystem

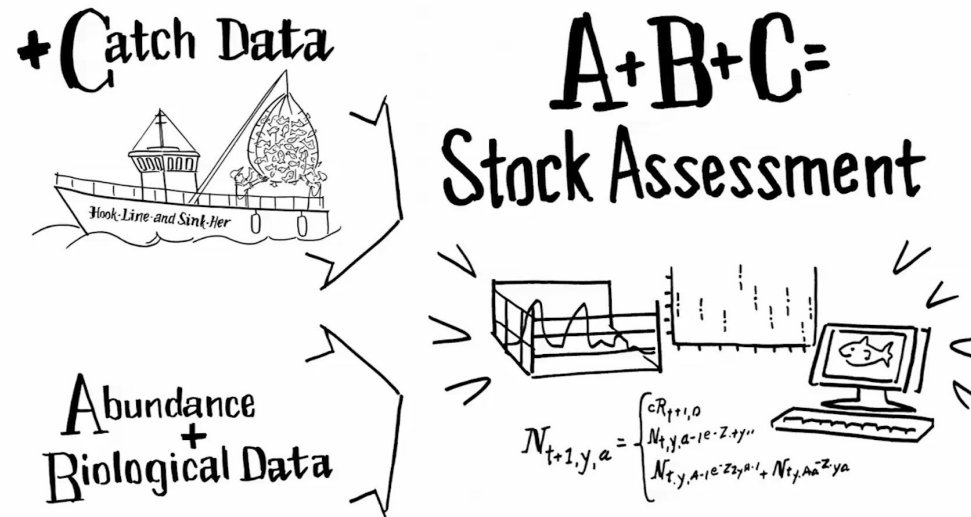
Biomass



Terms of Reference | [Method Expertise](#) | Data Availability | Working Papers and Reference Documents | Next Steps | Comments and Questions

Data Availability: Data Types

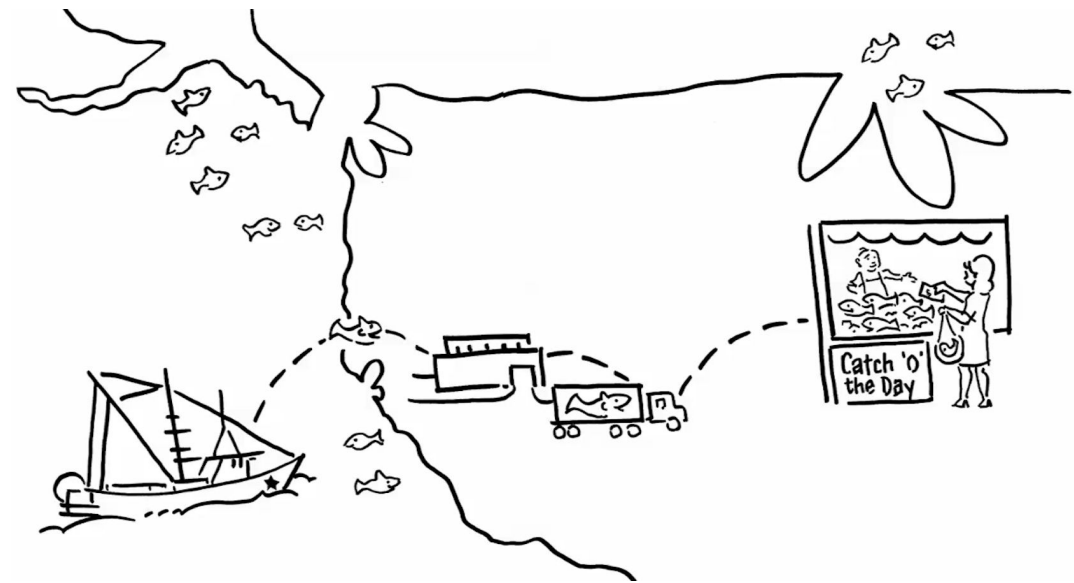
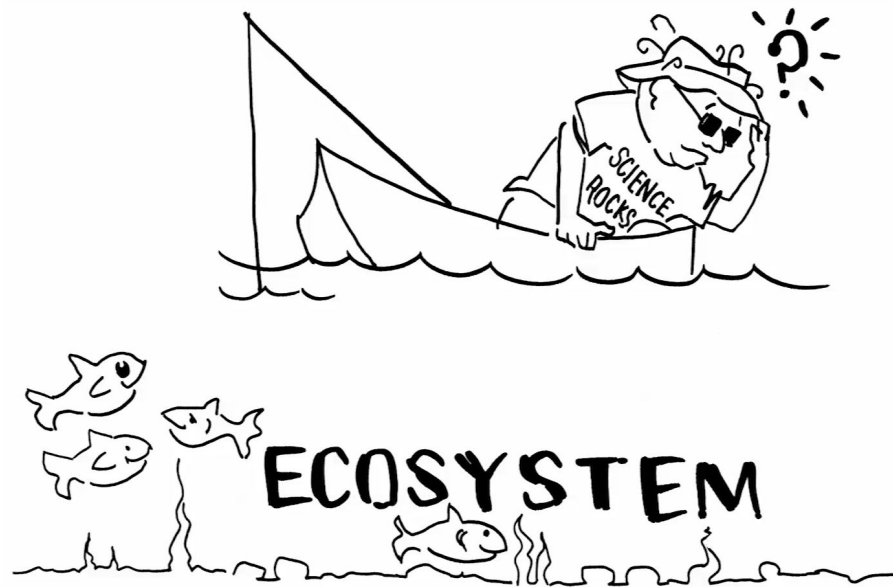
- Assessment data inputs:
 - **Abundance** - changes in relative or absolute numbers or biomass over time
 - **Biology** - demographics and life history
 - **Catch** - fishing effort, bycatch, and discards



Terms of Reference | Method Expertise | [Data Availability](#) | Working Papers and Reference Documents | Next Steps | Comments and Questions

Data Availability: Data Types

- Incorporation of **Ecosystem** and **Socioeconomic** data
 - Currently incorporated into single species stock assessment methods as qualitative data, but are parameterized for incorporation into certain alternative analytical methods as quantitative data



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Data Availability: Caribbean Strategic Planning Project



- Overall goal - collaboratively identify data improvement strategies to enhance stock assessment and fisheries management advice for Puerto Rico and the US Virgin Islands
- Projects to reduce gaps in data used to inform management
 - Individual working groups identified:
 - Identified currently available data from **Fishery Independent, Fishery Dependent, Life History, Environmental, and Socioeconomic** sources
 - Identified current data gaps
 - Documented findings and provided recommendations

Terms of Reference | Method Expertise | [Data Availability](#) | Working Papers and Reference Documents | Next Steps | Comments and Questions



Data Availability: Fishery Independent Data Sources



<i>Dataset</i>	<i>Data Points/Year</i>	<i>Geographic Range</i>	<i>Relative Abundance</i>	<i>Length Comp.</i>	<i>Age Comp.</i>
Commercial Fishers Juvenile Lobster Trap Survey	2022 – ongoing	PR	Y	Y	N
Conch Surveys	2023 – 2025	USVI & PR	Y	Y	Limited
DCRMP	2020 – 2022	USVI	Y	Y	N
NCRMP	2013 – ongoing	USVI & PR	Y	Y	N
NPS Lobster Survey	2019 – ongoing	USVI National Parks	Y	Y	N
NPS Seagrass/Conch Survey	2022 – ongoing	USVI National Parks	Y	N	N
PRCRMP	1999 – ongoing	PR	Y	Y	N
Reef Fish Survey	2022 – ongoing	PR	Y	Y	Y
SEAMAP-C Conch	2017 – ongoing	USVI & PR	Y	Limited	Limited
SEAMAP-C Fish	2017 – ongoing	USVI & PR	Y	Y	Y
SEAMAP-C Lobster	2017 – ongoing	USVI & PR	N PR, Y USVI	Y	Y
TCRMP	2003 – ongoing	USVI	Y	Y	N

Terms of Reference | Method Expertise | [Data Availability](#) | Working Papers and Reference Documents | Next Steps | Comments and Questions



Data Availability: Fishery Dependent Data Sources



<i>Dataset</i>	<i>Data Points/Year</i>	<i>Geographic Range</i>	<i>Sector</i>	<i>Biological</i>	<i>Effort</i>
Atlantic Tournament Registry	2070 – ongoing	USVI & PR	Recreational	Y	Y
Caribbean Commercial Logbook PR	1983 – ongoing	PR	Commercial	N	Y
Commercial Catch Report USVI	1974 – ongoing	USVI	Commercial	N	Y
Marine Recreational Fisheries Statistics Survey	2000 – 2013	PR	Recreational	Y	Y
Marine Recreational Information Program	2014 – 2017 USVI 2009 – 2017 PR	USVI & PR	Recreational	Y	Y
Pilot Port Sampling Project and Catch Validation Project	2017 – 2019	PR	Commercial	Y	N
PR Recreational Port Sampling	2024 – ongoing	PR	Recreational	Y	Y
SEFSC Highly Migratory Species Logbook Program	1986 – ongoing	USVI & PR	Commercial	N	Y
Spiny Lobster Size Selectivity USVI	2020 – ongoing	USVI	Commercial	UNK	N
Technology Support For Recreational Intercept Survey	2021 – ongoing	PR	Recreational	UNK	N
Trip Interview Program	1985 – ongoing	USVI & PR	Commercial	Y	Y

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Data Availability: Life History Data Sources



<i>Species</i>	<i>Data Points/Year</i>	<i>Geographic Range</i>	<i>Data Types</i>
Blackfin snapper, Burton et al., 2016	2079 – 2015	USVI & PR	Length weight
Caribbean spiny lobster, Atherley et al., 2021	2017 – 2019	Caribbean	Reproduction, maturity
Cero mackerel, Figueroa et al., 2007	2001 – 2002	PR	Reproduction, maturity
French grunt, Mateo et al., 2011	2007	USVI & PR	Length age
Hogfish, Pérez-Chacón, 2015	2011 – 2013	USVI	Length length, length weight
King mackerel, Figueroa et al., 2007	2001 – 2002	PR	Reproduction, maturity
Princess parrotfish, Jones et al., 2021	2015 – 2020	USVI & PR	Length age, reproduction, maturity
Queen parrotfish, Rivera-Hernández & Shervette, 2024	2015 – 2023	USVI & PR	Length age, reproduction, maturity
Queen triggerfish, Rivera-Hernández & Shervette, 2024	2013 – 2023	USVI & PR	Length age, reproduction, maturity
Red hind, Rosemond et al., 2022	2010 – 2023	USVI	Reproduction, maturity
Schoolmaster snapper, Mateo et al., 2011	2007	USVI & PR	Length age
Stoplight parrotfish, Rivera-Hernández & Shervette, 2024	2015 – 2023	USVI & PR	Length age, reproduction, maturity
Wahoo, Maki Jenkins & McBride, 2009	1997 – 2006	Caribbean	Reproduction, maturity
Yellowfin grouper, Nemeth et al., 2020	2008, 2009, 2011, 2014	USVI	Reproduction, maturity
Yellowtail snapper, Shervette et al., 2024	2009 – 2023	USVI & PR	Length age, length length, length weight, reproduction, maturity

Terms of Reference | Method Expertise | [Data Availability](#) | Working Papers and Reference Documents | Next Steps | Comments and Questions



Data Availability: Environmental Data Sources



<i>Dataset</i>	<i>Data Points/Year</i>	<i>Geographic Range</i>	<i>Data Types</i>
Allen Coral Atlas	2007 – ongoing	USVI & PR	Coral population, physical conditions, spatial data
Atlantic and Gulf Rapid Reef Assessment	2007 – ongoing	USVI & PR	Coral population, spatial data
Caribbean Integrated Ocean Observing System	ongoing	USVI & PR	Physical conditions
Cooperative Research Tagging Program	1954 – ongoing	USVI & PR	Physical conditions, fish population
Coral Reef Conservation Program	2000 – ongoing	USVI & PR	Coral population, environmental variability, pollution
Environmental Protection Agency	1970 – ongoing	USVI & PR	Physical conditions, pollution/debris, environmental variability
Essential Fish Habitat	2005 – ongoing	USVI & PR	Physical conditions, fish population, fishing effects, habitat type
LENFEST Ocean Program	2005 – ongoing	USVI & PR	Fishing effects, human effects
Marine Biodiversity Observation Network	2014 – ongoing	USVI & PR	Coral population, fish population, management effects
National Centers for Environmental Information	1982 – ongoing	USVI & PR	environmental variability, physical conditions
National Coral Reef Monitoring Program	2003 – ongoing	USVI & PR	Coral population, habitat type
National Marine Protected Areas Center	2000 – ongoing	USVI & PR	Management effects
National Park Service	1976 – ongoing	USVI & PR	Physical conditions, fish population, coral population, habitat type
National Weather Service	1900 – ongoing	USVI & PR	Physical conditions, environmental variability
NOAA's Ocean Acidification Program	2008 – ongoing	USVI & PR	Physical conditions
Ocean Biodiversity Information System	2000 – ongoing	USVI & PR	Spatial data
The Ocean Foundation	2002 – ongoing	USVI & PR	Management effects, environmental variability, pollution, physical conditions
World Ocean Database	1990s – ongoing	USVI & PR	Physical conditions, environmental variability

Terms of Reference | Method Expertise | [Data Availability](#) | Working Papers and Reference Documents | Next Steps | Comments and Questions



Data Availability: Socioeconomic Data Sources



<i>Dataset</i>	<i>Data Points/Year PR</i>	<i>Data Points/Year USVI</i>	<i>Geographic Range</i>
Commercial Landings	1970 – ongoing	1970 – ongoing	USVI & PR
Conceptual models	2020 – 2023	2020 – 2023	USVI & PR
CSVI	2010, 2020	2016 – 2020	USVI & PR
Fishery Census	1995 – 2019	2004, 2010, 2011, 2016	USVI & PR
Gear Costs and Earnings	1995 – 2019	1995 – 2019	PR
MCRIMP	2015	2017	USVI & PR

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Terms of Reference: Reminder

1. Determine what types of alternative methods may be **feasible now**
2. Examine non-traditional approaches to single species assessments
3. Provide recommendations of specific analytical procedures for developing **management advice that will meet legal mandates**
4. Provide research recommendations to advance development and implementation of other methods and necessary data collection
5. Document the methods and analyses reviewed and recommendations

Practicality

Terms of Reference | Method Expertise | Data Availability | [Working Papers and Reference Documents](#) | Next Steps | Comments and Questions

Panel/Participant Input

- Data review
 - Abundance
 - Biology
 - Catch
 - Environmental
 - Socioeconomic
- Analytical method (lightning slide)
 - Inputs
 - Outputs
 - Implications for management

Terms of Reference | Method Expertise | Data Availability | [Working Papers and Reference Documents](#) | Next Steps | Comments and Questions



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Working Papers: for Analytical Methods

- Describe data or analytical method
- Anyone may submit a paper
- First draft expected at least two weeks before the workshop (TBD)
 - Send electronically to SEDAR staff (Emily Ott)
- The final document will be distributed to workshop participants and posted on the SEDAR website
- Optional template will be sent soon
- <https://sedarweb.org/information-for-sedar-workshop-participants/>

Reference Documents: for Available Data

- Include peer reviewed articles, tech memos, and grey literature not specifically developed for a given SEDAR
- Provide general background information or document existing relevant data
- To propose a document for inclusion:
 - Submit your request to SEDAR and provide an electronic copy (Emily Ott)
- Once accepted, documents are made available on the SEDAR website
- <https://sedarweb.org/information-for-sedar-workshop-participants/>

Next Steps

- **Data Webinar I:** February (weeks of 16th or 23rd)
 - Management history, data review
- **Data Webinar II:** March
 - Data review cont., Pacific Islands assessment history
- **Data Webinar III:** April
 - Data review cont., methods lightning slides
- **Data Webinar IV:** May
 - Methods lightning slides cont., pre-workshop logistics
- **Data Webinar V:** possible in June
- In-person **Workshop:** August 17-21, 2026

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Data Source

- Data source and contact information
- Sampling years
- Geographic range (PR and USVI specific)
- Sample size
- Variables or data types collected
- Summary statistics

[Terms of Reference](#) | [Method Expertise](#) | [Data Availability](#) | [Working Papers and Reference Documents](#) | [Next Steps](#) | [Comments and Questions](#)

Analytical Method

- Method description
- Data inputs (especially critical data and their viability now and in the future)
- Analyses / data output summary
- How this method can inform management
- Caveats for this method
- Previous applications of this method
- Any graphs or diagrams to show for this method

Terms of Reference | Method Expertise | Data Availability | Working Papers and Reference Documents | [Next Steps](#) | Comments and Questions

Stock Synthesis

- **Method description**
 - SS is a statistical catch-at-length method that analyzes data on the size (length) of fish collected in scientific surveys
- **Data inputs**
 - Life History - natural mortality, reproduction, age and growth
 - Length composition
 - Landings - catch, discards, mortality
 - Index of abundance
- **Analyses / data output summary**
 - E.g., model diagnostics, convergence, correlation, variance, residuals, likelihood profiles, selectivity runs

Terms of Reference | Method Expertise | Data Availability | Working Papers and Reference Documents | [Next Steps](#) | Comments and Questions

Stock Synthesis

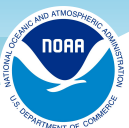
- **How the method can inform management**
 - Results provide the full suite of management advice: estimate current stock size, harvest rate, and MSY reference points
 - Forecasts of catch and biomass that managers can use to evaluate the risk associated with a range of harvest options
- **Caveats for this method**
 - Less informative than methods that incorporate age data
 - Less precise regarding reproduction, growth, and death rates for larger animals that are approaching their maximum size
- **Previous applications of this method**
 - [SEDAR 91](#); Scientist, et al., 2024

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Summary

- **What we want to achieve during this SEDAR process:**
 - **At end of data webinars:** knowledge of available data sources and feasible analytical methods
 - **At end of workshop:** recommended analytical methods for each island and managed species
 - **At end of post-workshop webinars:** applications of analytical methods
- **We achieve this through:**
 - Presentations from participants on data sources and analytical methods
 - Critical review of the proposed analytical methods by the panel
 - Working paper and reference document submissions
 - Workshop discussions and testing of the recommended methods

Terms of Reference | Method Expertise | Data Availability | Working Papers and Reference Documents | [Next Steps](#) | Comments and Questions



Summary

Who plans to provide a data review?

- Lenfest data (JJ)
- NCRMP (Jay/Jeremiah)
- Size comps in TIP/MER (Katherine)
- Landings (Stephanie)
- PR recreational port sampling (Grisel)
- MRIP?
- SEAMAP-C?
- Life history?
- Environmental?
- Socioeconomic?

Summary

Who plans to present an analytical method (lightning)?

- Biomass
- Data-Limited
- Ecosystem
- MSE
- Multi-Indicator
- Multi-Species
- Single Species (size/age structured models)
- Other?

Terms of Reference | Method Expertise | Data Availability | Working Papers and Reference Documents | [Next Steps](#) | Comments and Questions

Comments and Questions



Terms of Reference | Method Expertise | Data Availability | Working Papers and Reference Documents | Next Steps | [Comments and Questions](#)