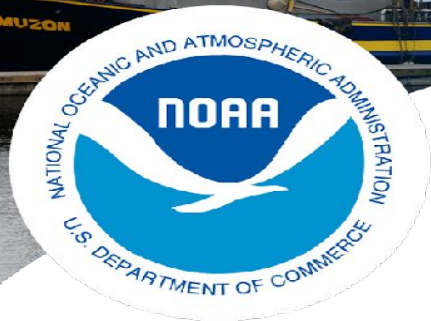




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Caribbean Ecosystem Status Report Update

Kelly Montenero and Mandy Karnauskas

University of Miami Cooperative Institute of Marine and
Atmospheric Studies/NOAA Atlantic Oceanographic
Laboratories, and NOAA Southeast Fisheries Science Center

Caribbean Fishery Management Council
Scientific and Statistical Committee Meeting
May 22, 2020



NOAA FISHERIES

What is an Ecosystem Status Report?

Challenges, Opportunities and Future Directions to Advance NOAA Fisheries Ecosystem Status Reports (ESRs):

Report of the National ESR Workshop

Wencheng L. Slater, Geret DePiper, Jamison M. Gove, Chris J. Harvey, Elliott L. Hazen, Sean M. Lucey, Mandy Karnauskas, Seann D. Regan, Elizabeth C. Siddon, Ellen M. Yasuniishi, Stephani G. Zador, Margaret M. Brady, Michael D. Ford, Roger B. Griffis, Rebecca L. Shuford, Howard M. Townsend, Todd D. O'Brien, Jay O. Peterson, Kenric E. Osgood, and Jason S. Link

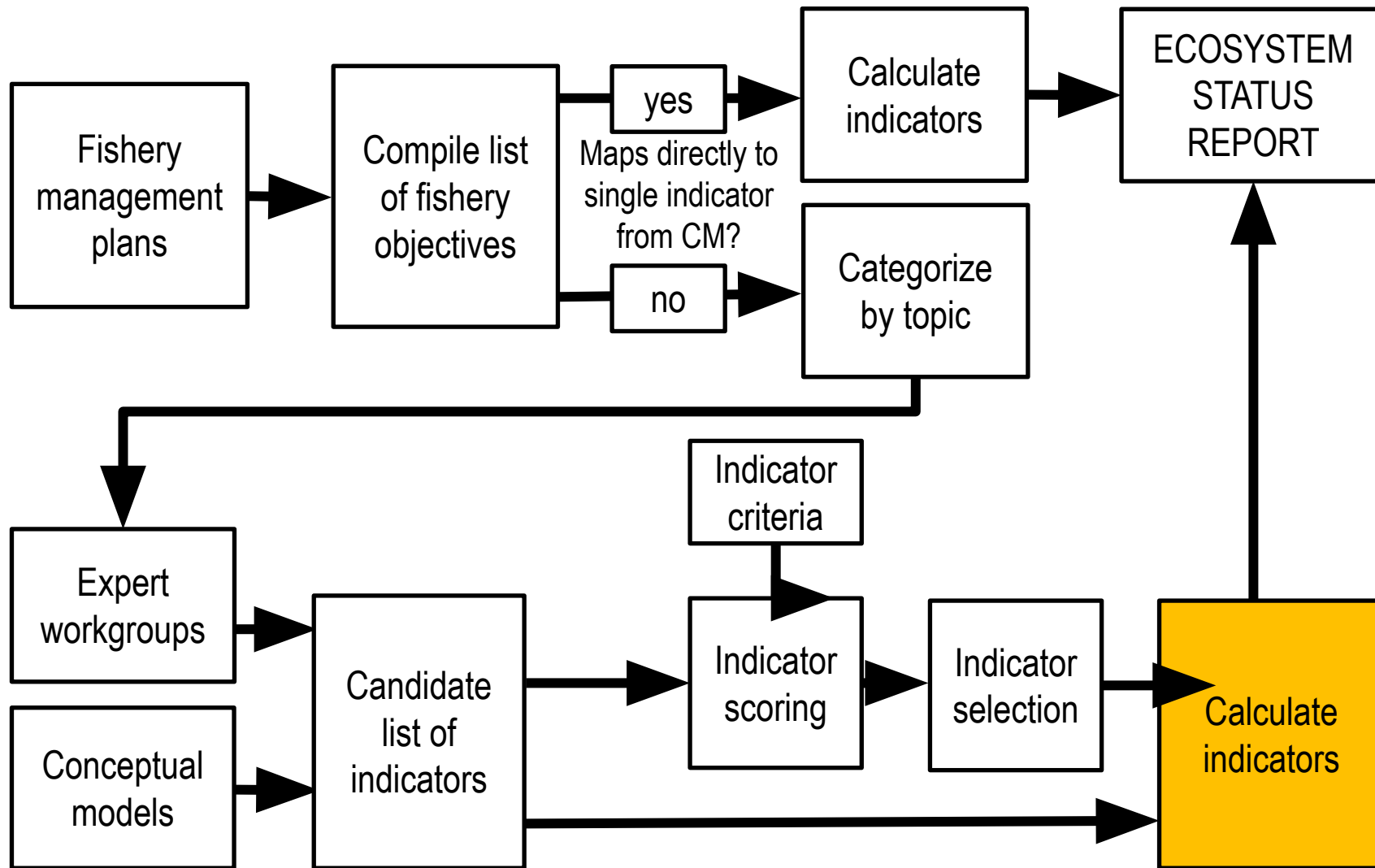


U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

NOAA Technical Memorandum NMFS-F/SPO-174
September 2017

“Ecosystem Status Reports (ESRs) are synthesized scientific products that provide information on the past and possible future conditions of marine ecosystems based on suites of indicators. This information provides vital context for a range of decisions affecting marine ecosystems and supports an ecosystem approach to marine resource management” (Slater et al. 2017).

Process for Caribbean ESR



Indicator suite development criteria

- Long term data availability
- Measurability
- Sensitivity to environmental changes
- Specificity
- Spatial and temporal scalability
- Relevance to specific FMP objectives- examples
- Responsiveness to management actions

Draft indicator suite after expert vetting

Biological/ecological	Socioeconomic	Physical/ environmental	Disturbance events
Status rating of coral reef benthic habitat condition * (via NCRMP ratings)	Landings total	Ocean acidification suite (changes in aragonite saturation state)	Days of market/store closure due to events per year in region
Diversity of coral species	Changes in top targeted species	Shoreline erosion from development	Number of major earthquakes in region per year
Thermal stress via degree heating weeks	Number of education and outreach fisheries events	Identified point source polluters (number of listed superfund sites)	Days of no access to vessels/ marinas due to events
Percent coral cover	Lobster commercial landings	Number of named storms tracking over region	Number of sargassum bloom events in region
Coral bleaching extent	Conch commercial landings	Turbidity	
Number of protected spawning aggregations in region	Reef fish commercial landings	Ocean color spatial change via contour maps (Orinoco plume and chlorophyll a algal blooms)	
Mangrove and seagrass cover spatial changes*	Changes in number of seasonal closures	Marine Debris*	
Changes in spatial extent of mapped coral habitat	Estimated bycatch/waste in fishery	Sea Surface Temperature (also annual min and max)	

**pending deliberation of most suitable defined indicator*

How we envision ESR being used

- Allow managers to understand whether management objectives are being met
 - Better understand and define FMP objectives and goals
- Give broader ecosystem context (including physical, biological, social, economic) for decision-making
- Understand impacts of major acute stressors (e.g., coral bleaching events, hurricanes, COVID-19)
- Other application ideas?



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Other region ESR examples

Links:

Gulf of Mexico key indicators and full report:

https://www.aoml.noaa.gov/ocd/oecdweb/ESR_GOMIEA/index.html

California Current IEA: ESRs for PFMC

<https://www.integratedecosystemassessment.noaa.gov/regions/california-current/cc-publications-reports>

Northeast IEA: ESRs for NE and MA FMCs:

<https://www.integratedecosystemassessment.noaa.gov/regions/northeast/reports>



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Thanks!

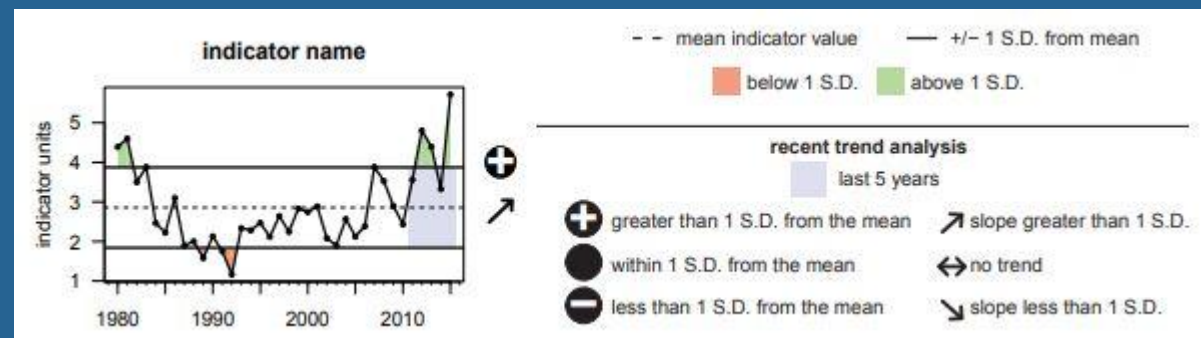
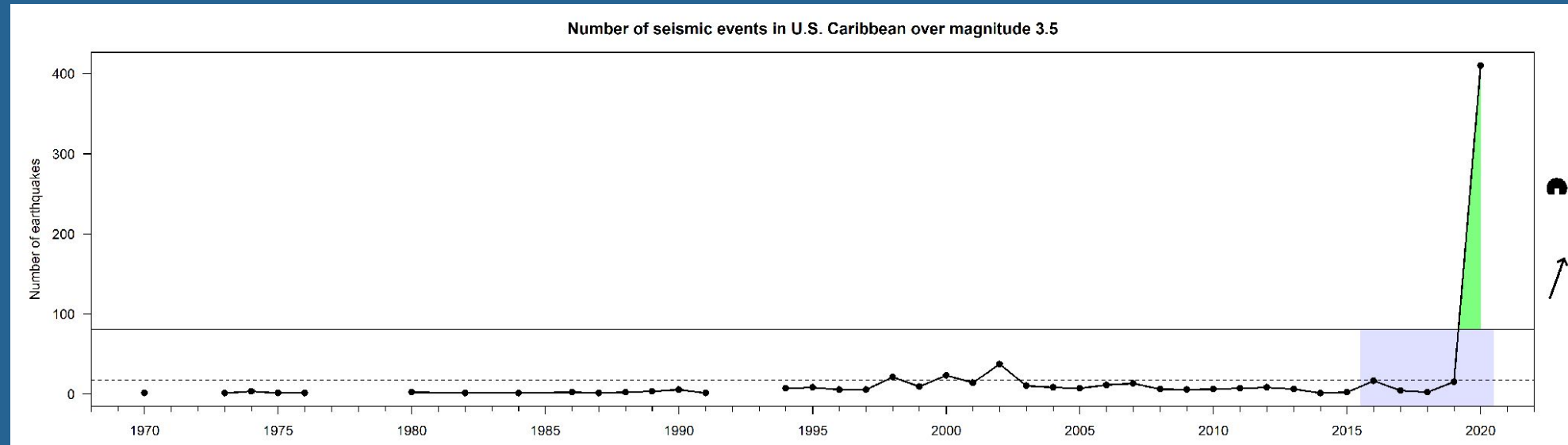
Kelly.Montenero@noaa.gov

Mandy.Karnauskas@noaa.gov

Extra slide: Draft indicator example



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Extra slide:

GoM ESR indicator trends example



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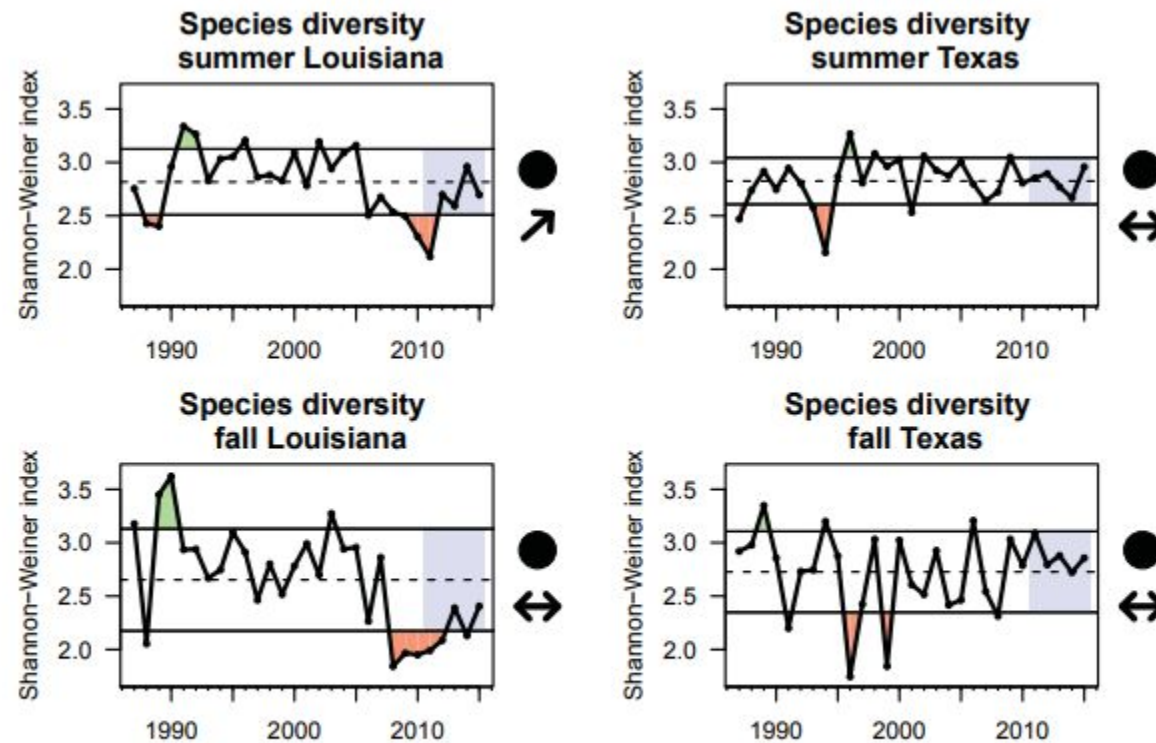


Figure 8.2. Species diversity metrics calculated from the SEAMAP survey. Metrics are reported separately for Louisiana (left) and Texas (right) waters and for summer (top) and fall (bottom) surveys.