U.S. SOCIOECONOMIC IMPACTS OF HARMFUL ALGAL BLOOMS WORKSHOP: SOCIAL SCIENCE OVERVIEW

MIKE DOWNS, WISLOW RESEARCH, JULY 27, 2020



OVERVIEW

- Objective: Share HAB challenges and needs from a social scientific perspective
- Background:
 - Fisheries social impact assessment perspective
 - Informed by multi-agency coastal community research experience and adverse events experience
- Disclaimer:
 - Not a HABs expert



CHALLENGES: COMMUNITIES ARE COMPLEX

- MSA and fishing communities (provide for the sustained participation thereof)
 - Substantial engagement
 - Substantial dependence
- Identification of pathways is complicated
 - Commercial fishing
 - Sport charter
 - Subsistence





CHALLENGES: PATHWAY DATA GAPS

Commercial/Sport Charter

- Vessel crew members
- Processing crew members
- Support service businesses
- Coastal tourism
- Markets

Subsistence

- Retention from commercial catch; use of "joint production platforms"
- Harvesting, sharing, use: sociocultural context and webs of relationships





CHALLENGES: PUTTING PEOPLE IN THE ECOSYSTEM

- Ecosystems management example from the North Pacific
 - Bering Sea Fisheries Ecosystem Plan
 - Action modules moving forward toward implementation, including LK/TK/Subsistence
- Council management still largely focused on Fishery Management Plans
 - Challenge is figuring out how to incorporate human dimensions at key points in the management decision-making process and build out a data system that:
 - Supports ongoing management decision making
 - Supports the analysis of unforeseen events





Ecosystem Socioeconomic Profile (ESP) SEASAVV

Definition: A <u>standardized</u> framework that <u>facilitates</u> the integration of <u>ecosystem and socioeconomic</u> factors within the stock assessment process and acts as a proving ground for <u>operational</u> use in quota setting.



Kalei Shotwell, Ben Fissel, Dana Hanselman, Brian Garber-Yonts

(Alaska Fisheries Science Center)

Michael Downs

(Wislow Research Associates LLC)

Communication Gap

STOCK ASSESSMENT AND FISHERY EVALUATION REPORT FOR THE GROUNDFISH RESOURCES OF THE BERING SEA/ALEUTIAN ISLANDS REGIONS The Plan Team for the Groundfish Fisheries **Fisheries** Management K. Aydin, S.J. Barbeaux, M. Bryan, J. Cahalan, C. Corrath, M. Dalton, K. Echave, B. Fissel, M. Furuness, D. Hanrelman, A. Haynie, A. Hicks, J. Hoff, K. Holsman, T. Hoskalebo, P.J. Hulson, J.N. Janelli, S. Korwicki, R. Lanth, S. Lowe, C.R. Lamiford, C. R. McGilland, D. McKeyer, O.D. Gichol, B. Nerroers, O.A. Ormedt, W.A. Palsson, C.J. Rodgweller, C.N. Rooper, C. Sidón, P.D. Spencer, H. Spies, D. Stram, T.T. Tenlfirsk, W.A. Palsson, C.J. Rodgweller, C.N. Rooper, C. Sidón, P.D. Spencer, H. Spies, D. Stram, T.T. Tenlfirsk, G.G. Thompson, C.A. Tributiva, and T.K. Widerburz. SAFE APPENDIX B STOCK ASSESSMENT AND FISHERY EVALUATION REPORT Ecosystem/ Stock FOR THE GROUNDFISH RESOURCES OF THE GULF OF ALASKA Economic ??? Assessment The Plan Team for the Groundfish Fisheries of the Gulf of Alaska Assessment Gulf of Alaska J. Armstrong, K. Aydin, S. Burbeaux, M. Bryan, C. Corrath, L. Conners, K. Courié, C. Cunningham, O. Drov, M. Dorn, K. Techwe, C. France, K. Frenke, D. Frised, D. Hunedmar, J. Hofete, K. Holman, F. Mower, D. Nicole, A. Nicole, A. Olhon, O. Correnté, P. Palson, C. Godyeller, J. Raudie, K. Shebreul, K. Spalinger, P. Spencer, I. Spies, J. Sahd, T. Teufferink, C. Tribuzio, J. Turock, T. Wilderbuer, B. Williams, V. and S. Zodor No Standard Framework

2017 FRS Fro

Ecosystem Considerations 2017

Status of the Eastern Bering Sea Marine Ecosystem



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NPFMC Bering Sea and Aleutian Eslands SAFE

STOCK ASSESSMENT AND FISHERY EVALUATION REPORT FOR THE GROUNDFISH FISHERIES OF THE GULF OF ALASKA AND BERING SEA/ALEUTIAN ISLANDS AREA:

ECONOMIC STATUS OF THE GROUNDFISH FISHERIES OFF ALASKA, 2016

Ben Fissel, Michael Dalton, Brian Garber-Yonts, Alan Hayme, Stephen Rasperski, Jean Lee, Di Lew, Anna Lavoie, Chang Seung, Kim Sparks, Sarah Wise.

> Economic and Social Sciences Research Program Resource Ecology and Fisheries Management Division Assessment Services Center National Marine Fisheries Service National Marine Fisheries Service National Cocanie and Atmospheric Administration National Cocanie and Atmospheric Administration 7600 Sand Point Way N.E. Seattle Washington 9811.5-6349

> > December 20, 2017

Communication Loop



CHALLENGES: ESTABLISHING AND MAINTAINING RELATIONSHIPS

Social science fieldwork

- Interview/triangulation methodologies, but challenging in terms of cost and staff time
- Two-way flow of information, including LK/TK that can feed back into stock assessment
- Network of potential cooperators: port agents, Sea Grant, extension workers

HABs – can be model for interdisciplinary approach

- Teaming of natural scientists and social scientists
 - Social scientist lead interview process
 - Natural scientist critical for adequate follow-up
- Teaming of scientists and stakeholders: potential for cost reduction and on-the-water sentinels



NOAA FISHERIES



Addressing red tide harmful algal blooms in the context of ecosystem-based management

John F. Walter, Skyler Sagarese, Matt McPherson, Suzana Blake, Matt Campbell, Anthony Mastitski, Brendan Turley, Mandy Karnauskas Southeast Fisheries Science Center Chris Kelble, Ian Smith, Maribeth Gidley Atlantic Oceanographic & Meterological Laboratory

IWG-HABHRCA Briefing – June 18 2020





Participatory fisheries system modeling

Ecosystem-based fisheries management scoping workshops (2018 – 2019)

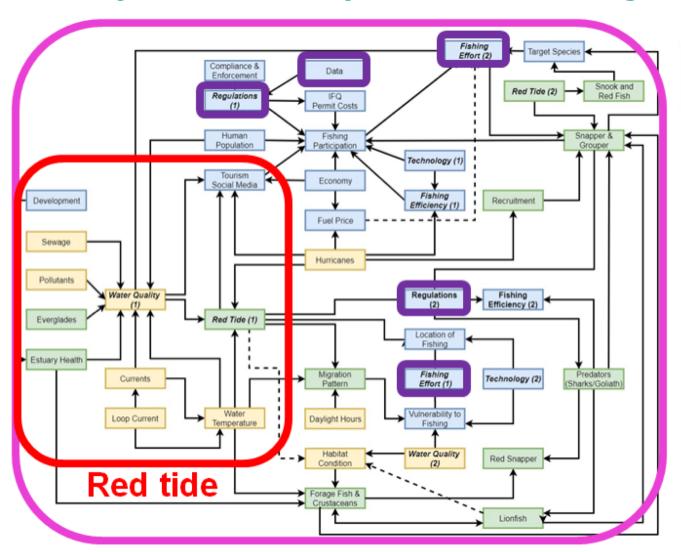
Goal: To increase information flow between scientists, managers, and stakeholders, in support of improved stock assessment and ecosystem assessment in the Gulf of Mexico

Focus on snapper/ grouper fisheries





Participatory fisheries system modeling



COLOR LEGEND
Human Related
Physical Components
Biological Components

Forces controlled by fishery management

Forces that affect the fisheries



CHALLENGES: UNDERSTANDING VULNERABILITY AND RESILIENCE

Community/regional socioeconomic structure

- Relationship to dependence
- Diversification of socioeconomic base

Variability over time

- Ability to adapt to events
 - Degrees of freedom with regulatory changes
 - Cumulative events
- Identifying thresholds and differential distribution of impacts





CHALLENGES: DATA TIMELINESS AND ADEQUATE SPECIFICITY

- Most SIA work has been based on predicting the future from existing trends.
 - Products with limited shelf life
 - Does not anticipate adaptation/ response with confidence
- Existing data often not at a granularity needed

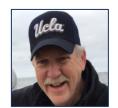




CHALLENGES: UNDERSTANDING WELL-BEING



- Inherently challenging to analyze
 - Baseline data availability, applicability, and quality
 - Cultural privacy issues
- Regional differences in adequacy of data sources



HABS PRESENT AN UNUSUAL OPPORTUNITY

- Ecosystem level issue by nature
 - Requires a multidisciplinary approach
 - Benefits of collaborations between natural and social sciences are clear.
- Opportunities to apply lessons learned to ongoing fishery management functions/responsibilities



QUESTIONS?

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