



NOAA
FISHERIES

Office of
Science &
Technology

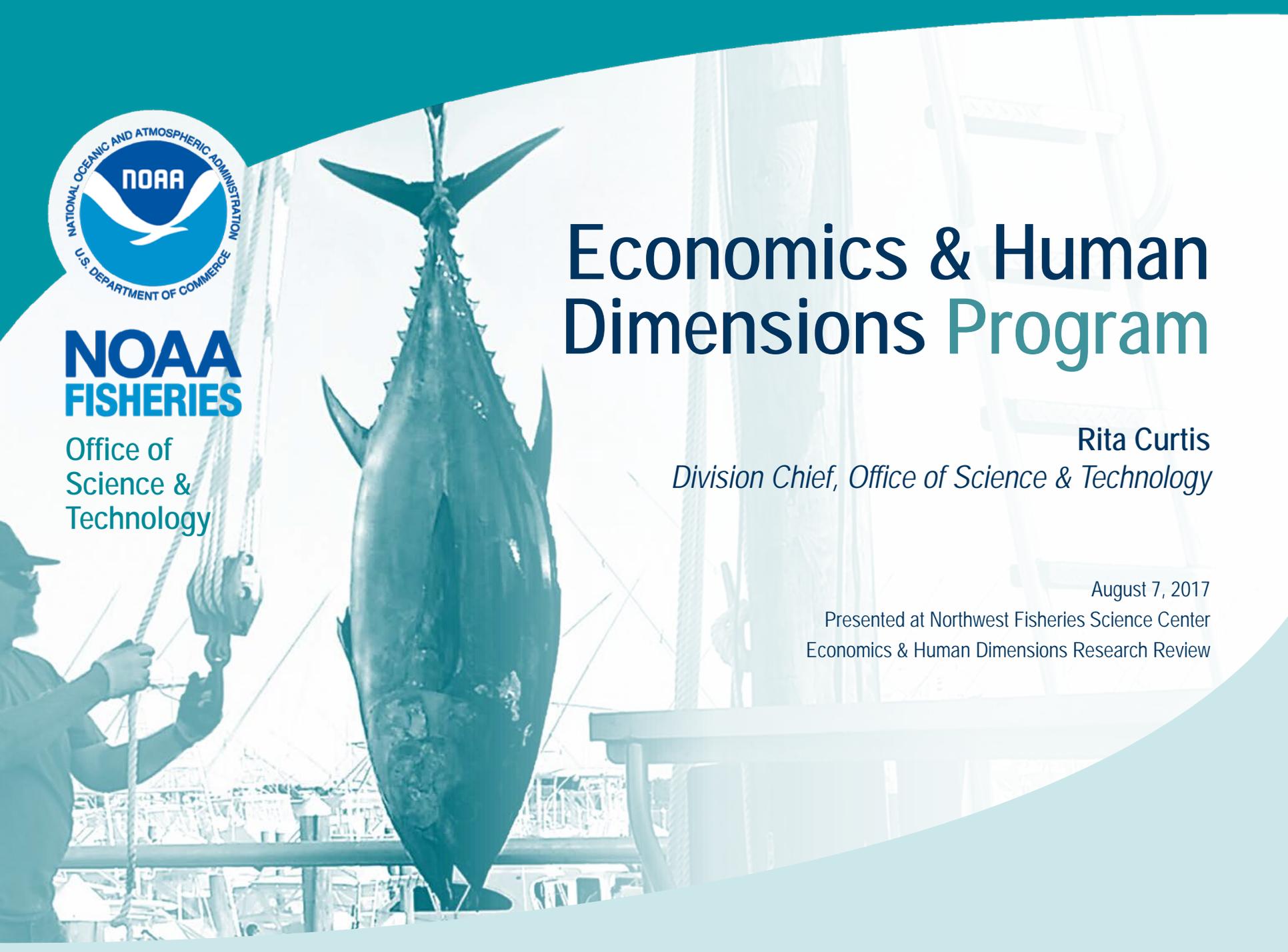
Economics & Human Dimensions Program

Rita Curtis

Division Chief, Office of Science & Technology

August 7, 2017

Presented at Northwest Fisheries Science Center
Economics & Human Dimensions Research Review



Outline

Why

Who we are / How we operate

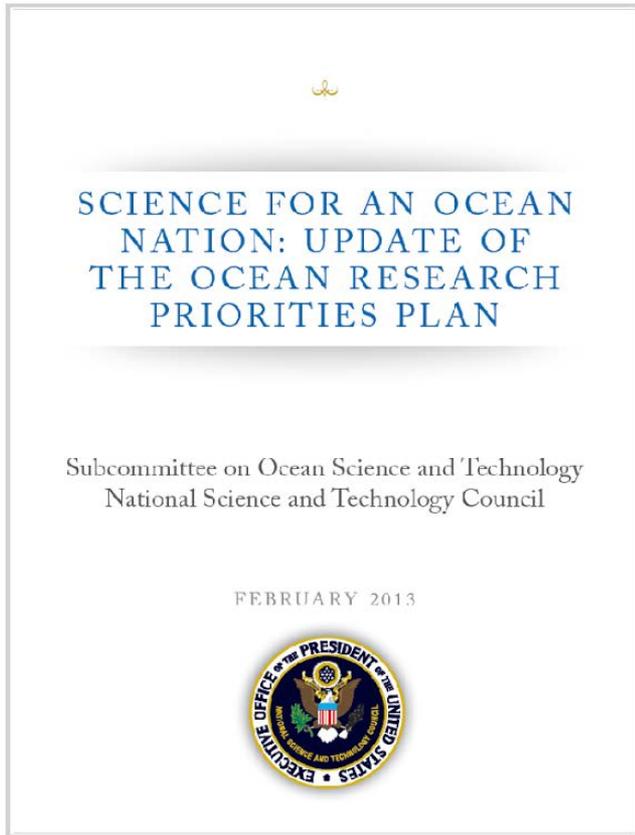
Program

Wrap-up (My thoughts)

Why - Key legislative & executive order mandates

Benefits (Cost-Benefit)	Equity / Distributive Effects	Efficiency	Safety	Social / Community Impacts	
E.O. 12866					
NEPA				NEPA	
NS 1 - OY	NS 4	NS 5	NS 10	NS 8	
MSA Fishery Impact Statement					
ESA	RFA				E.O. 12898
Endangered Species Act	Regulatory Flexibility Act				Environmental Justice

Why – National Priorities



“Social, cultural, and economic research, combined with resource-use assessment and modeling, will support effective evaluation of how various management options will impact resource use and sustainability.”

“As management options can be more accurately evaluated, the balance points between resource use and conservation can be better determined.”

“Determining the value of natural and cultural resources and evaluating the effects of alternative management scenarios requires consideration of economic (market and non-market), sociological, and cultural knowledge, including potential competing uses.”

Why – National Priorities

EBFM Policy & Roadmap...“recognizes the physical, biological, economic, and social interactions among the affected fishery-related components of the ecosystem, including humans; and seeks to optimize benefits among a diverse set of societal goals.”

NOAA Fisheries Priorities & Annual Guidance for 2017

“...provide high-quality stock assessments and ecological and socioeconomic information required for the federal management of fisheries and their essential habitats.

Outline

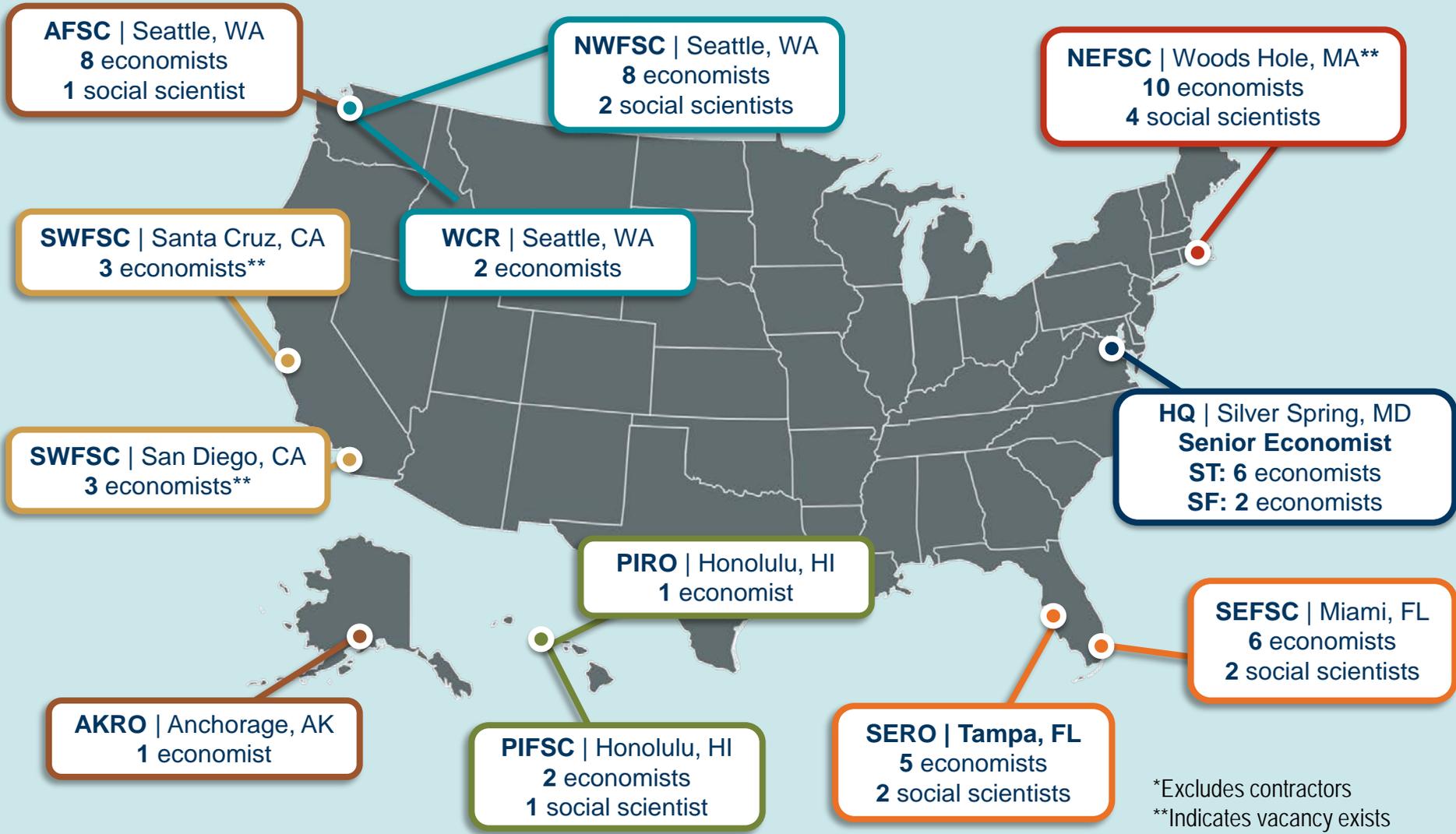
Why

Who we are / How we operate

Research Programs

Wrap-up

Who we are - Staffing Structure*



*Excludes contractors
**Indicates vacancy exists

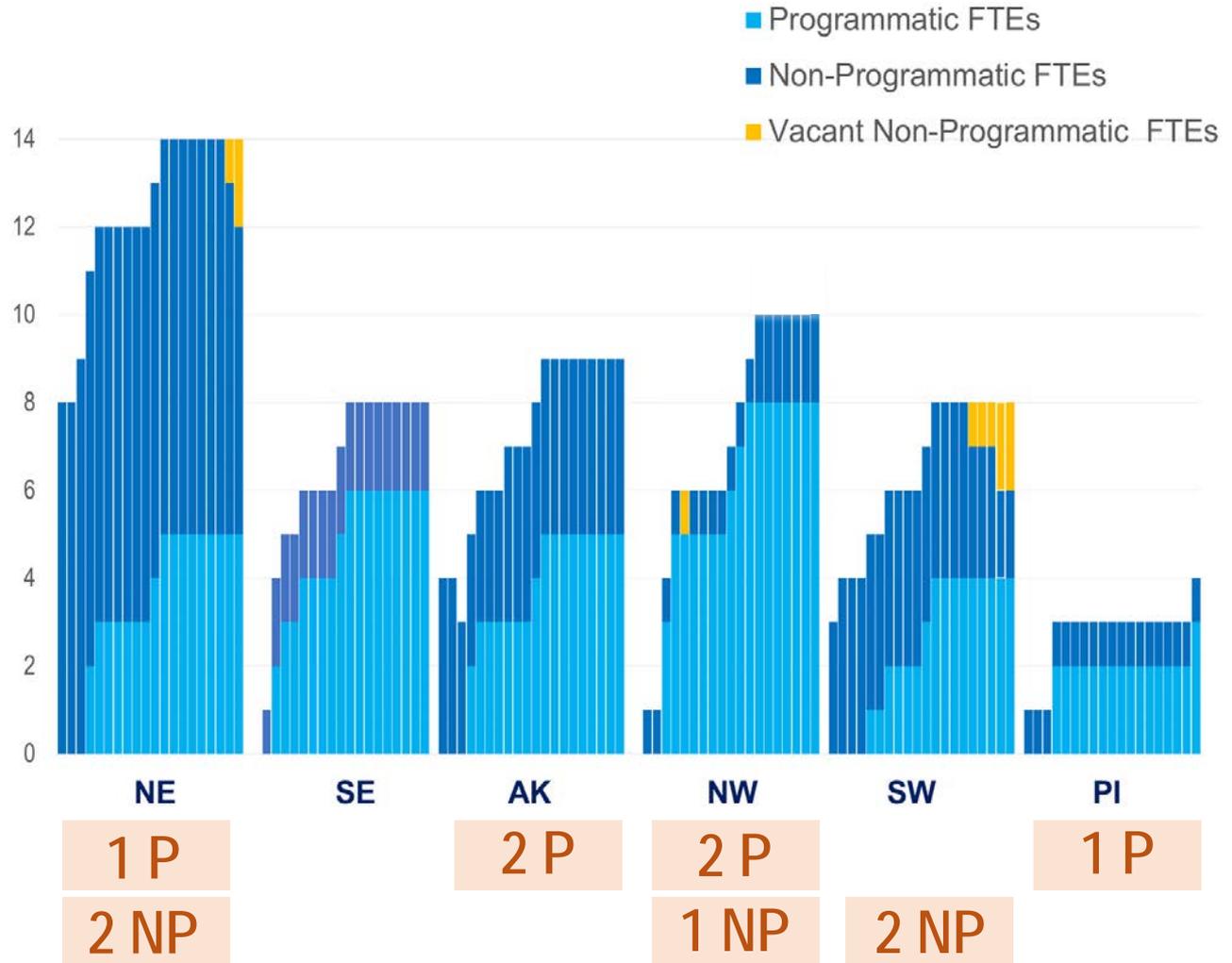
Center Social Science Staff FY98-FY17

FY98 - 19 FTEs

- 16 Center FTEs
 - 15 Economists
 - 1 Social Scientist
- 3 S&T Economists

FY17 - 61 FTEs

- 54 Center FTEs
 - 44 Economists
 - 10 Social Scientists
- 6 S&T Economists
- 1 Chief Economist



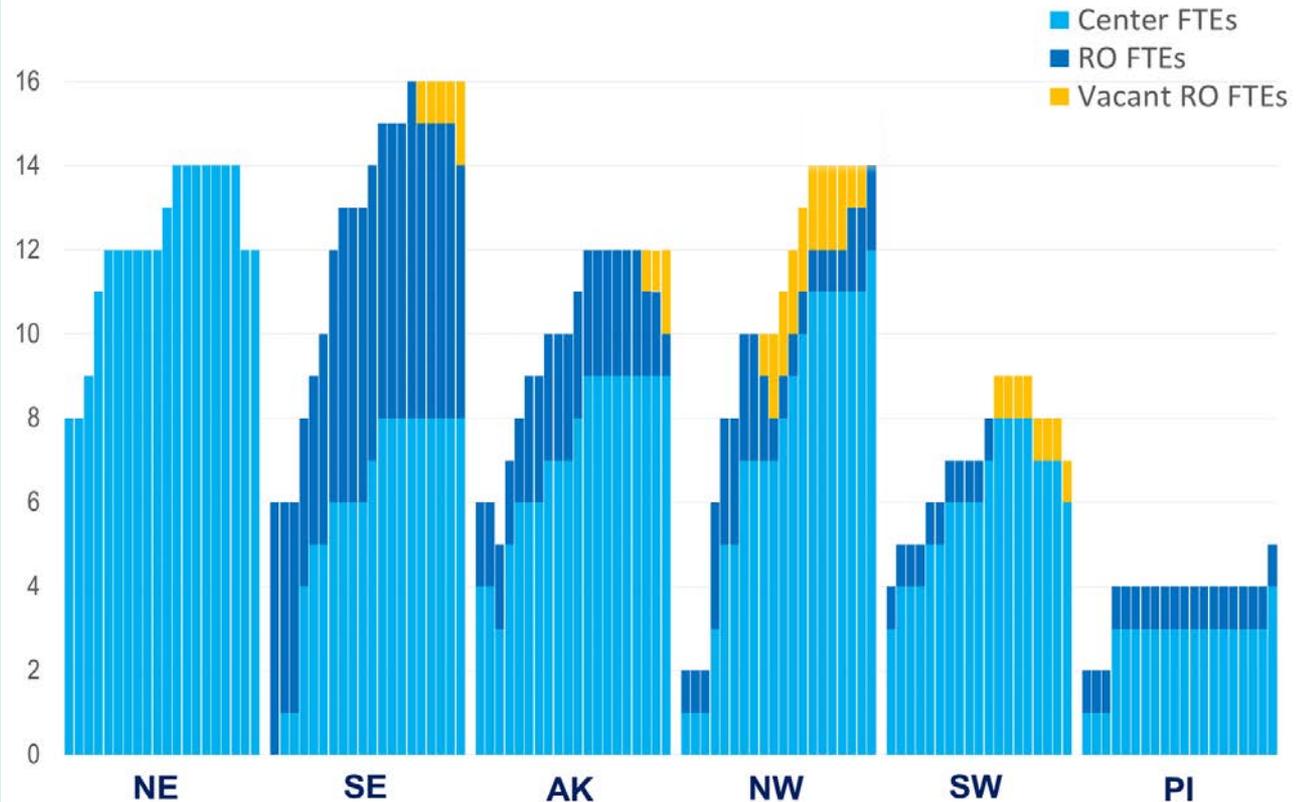
Social Science Staff by Region FY98-FY17

FY98 - 32 FTEs

- 16 Center FTEs
- 11 Regional Office FTEs
- 3 S&T Economists
- 2 SF FTEs

FY17 - 73 FTEs

- 54 Center FTEs
- 10 Regional Office FTEs*
- 6 S&T Economists
- 2 SF Economists
- 1 Chief Economist



*RO FTEs peaked in 2005 (15 FTEs); FY17 RO FTEs – 8 economists;
2 social scientists (both in SERO)

National Role vis-à-vis Centers/Regions

Identify national priorities & advocate for the national program

- Review planning documents and update with emerging issues.
- Communicate throughout NMFS.

Coordinate

- Identify national gaps and resource needs.
- Strategic documents / working groups.

Support

- Competitive Internal Funding Allocation.
- Capacity building, decision support tools.

Research

Capacity Building Efforts



- NMFS/Sea Grant Marine Resource Economics Fellowship Program
- Faculty Support at Academic Institutions

Educational Partnership Program with Minority-Serving Institutions

[Cooperative Science Center 2016 awards announced](#)

Educational Partnership Program with Minority-Serving Institutions

Outline

Why

Who we are / How we operate

Research Programs

Wrap-up

Economic & Social Science Research Areas

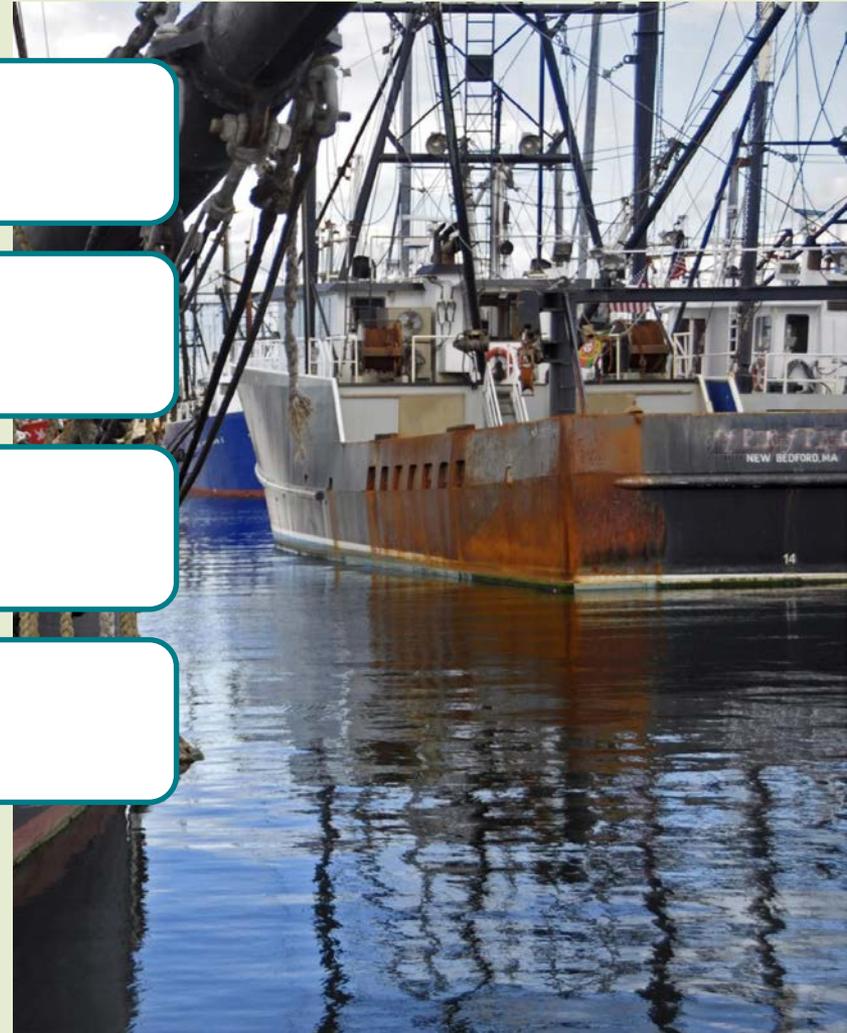
Commercial Fisheries Economics

Recreational Fisheries Economics

Human Dimensions

Ecosystem Services

- Protected Species Economics
- Habitat Economics



Commercial Fisheries and Ecosystem Management Needs

Estimate net revenue and profits

Conduct cash flow assessments

Estimate economic impacts (jobs, sales, etc.)

Benefit-cost analysis of fisheries regulations (e.g., gear restrictions, time and area closures, bycatch, rebuilding plans)

Benefit-cost analysis of proposed projects affecting fisheries (e.g., dam removal)

Natural resource damage assessment (e.g., oil spills, hurricanes, etc.)

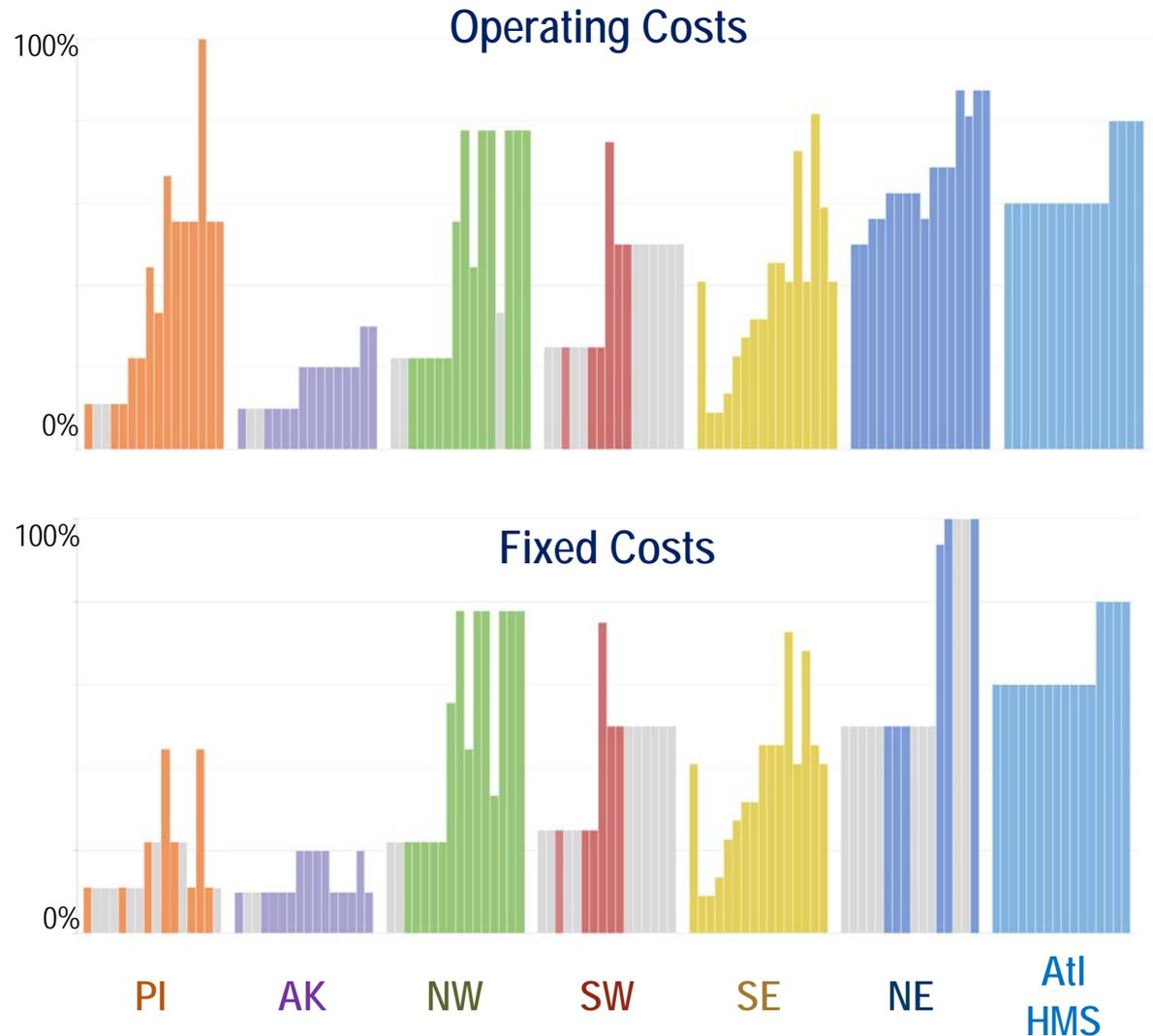
Ecosystem modeling, including climate-related effects

Collection of U.S. Commercial Fisheries Costs

- In 2001, NOAA Fisheries implemented a strategic initiative to improve commercial fisheries economic data.
- **All regions have improved their cost data coverage.**
- Cost data are collected using mail, telephone, in-person, web, and add-ons to existing logbook and observer programs.
- Some surveys are mandatory; others are voluntary.

No Data Collected

Percent of Fisheries with Fishing Vessel Cost Data (2001-2016)



Economic Performance Indicators

...a phased, tiered approach to developing and implementing indicators

Phases

Phase 1: Catch share programs

Phase 2: Selected non-catch share fisheries

Tiers

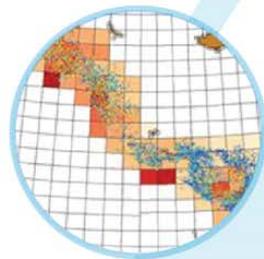
Tier 1: descriptive statistics with existing data

Tier 2: well defined metric but requires significant quantitative work

Tier 3: Concept not well-defined / no common definition; limited data

FishSET – Spatial Modeling Toolbox

What tools are in the FishSET toolbox?



Data Tools

Data Management and Integration Tool

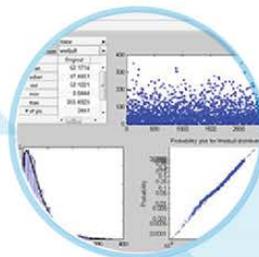
Facilitates the development and integration of datasets for spatial modeling

Monte Carlo Tool

Simulates real fisheries data while preserving confidentiality, allowing better model testing and comparison.

Data Analysis and Mapping Tool

Enables graphical and geographic data viewing and prepares data for spatial modeling



Model Tools

Model Design and Selection Tool

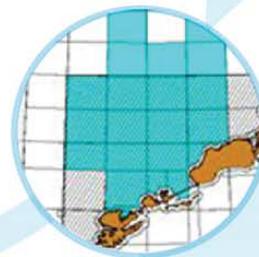
Enables modeling of different combinations of variables and models

Modeling Tool

Runs standard, cutting-edge, and user-designed models

Model Comparison and Reporting Tool

Provides an extensive comparison of model performance and summarizes data, models, and results



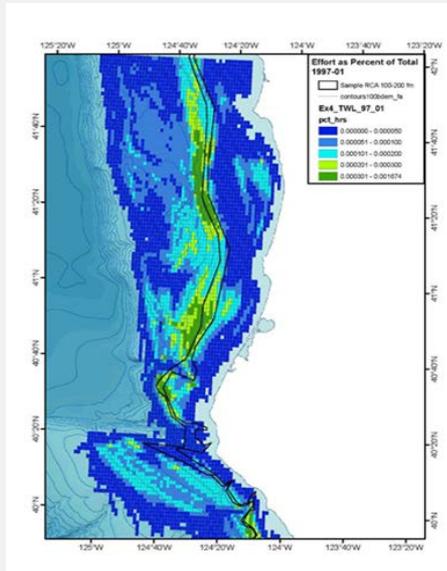
Policy Tool

Policy Simulation Tool

Predicts location choices and estimates policy impacts

Current, Planned, and Potential FishSET Management Applications

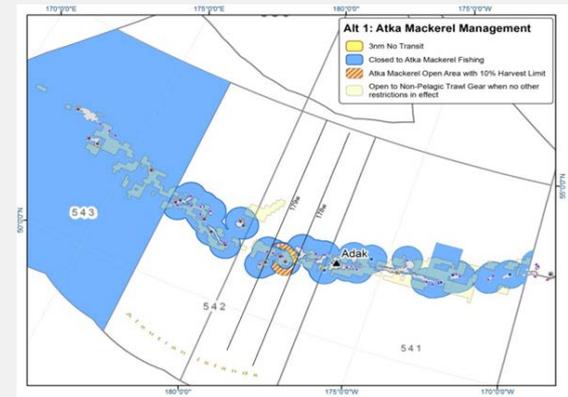
West Coast Rockfish Conservation Areas



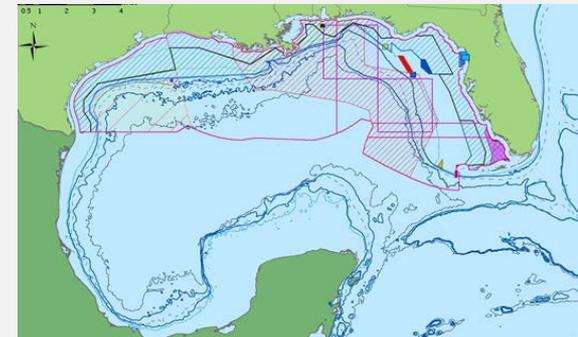
Wind Energy Site Evaluation



Steller Sea Lions Closures



Turtle Protection Measures



Recreational Economics Research Questions

What factors influence participation in a fishery?

What characteristics of an angler or site influence the number of trips taken?

What is the economic value of the recreational fishery?

What types of management measures are preferred by anglers?

What are angler expenditures on trips and durable goods?

What is the economic contribution of the fishery to coastal communities?

What are the revenues and variable costs of the for-hire fleet?

What are the fixed costs of the for-hire fleet?

Recreational Data Collections

Revealed
Preference

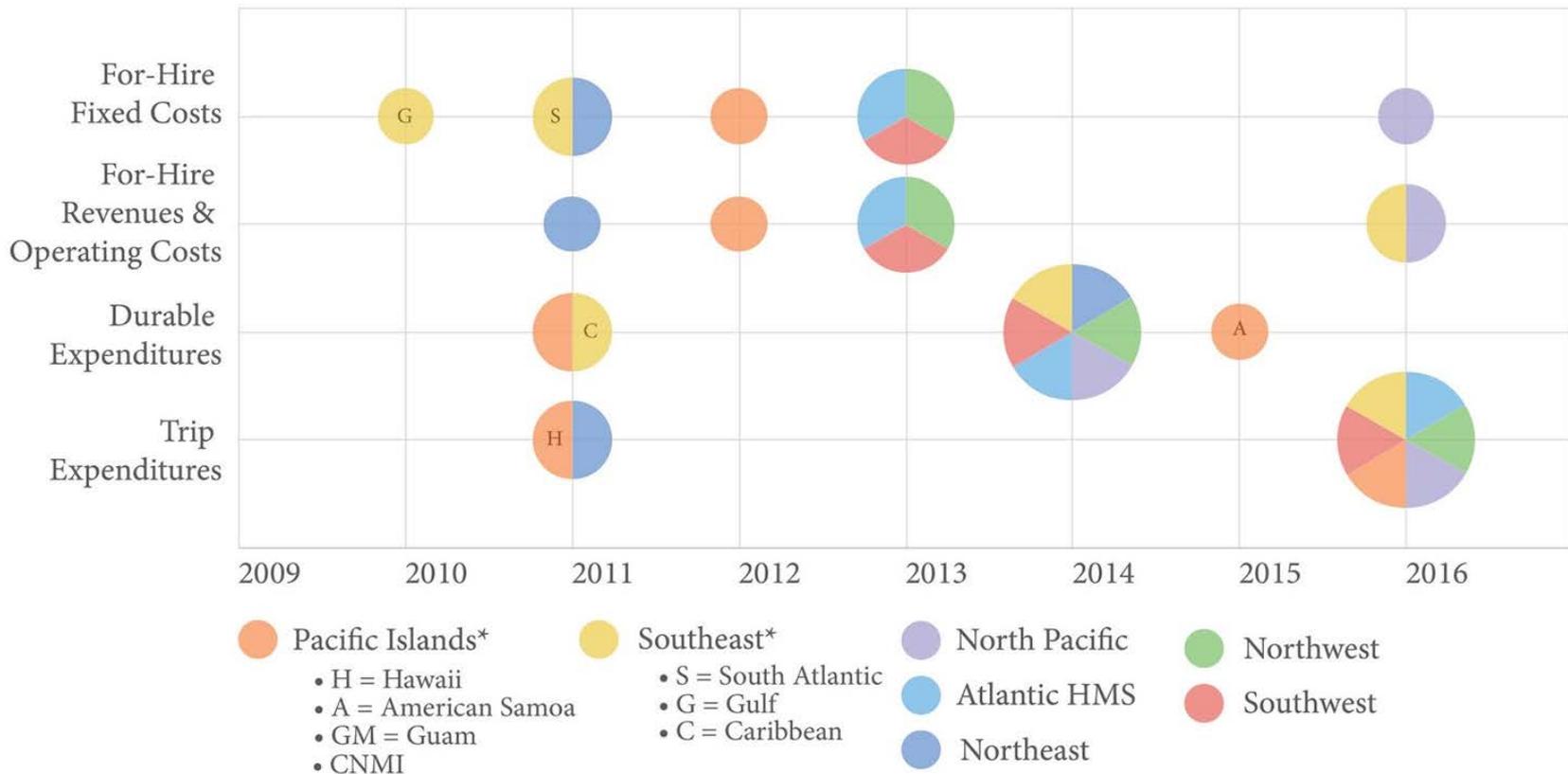
Stated
Preference

Angler
Expenditures

For Hire Cost
& Earnings

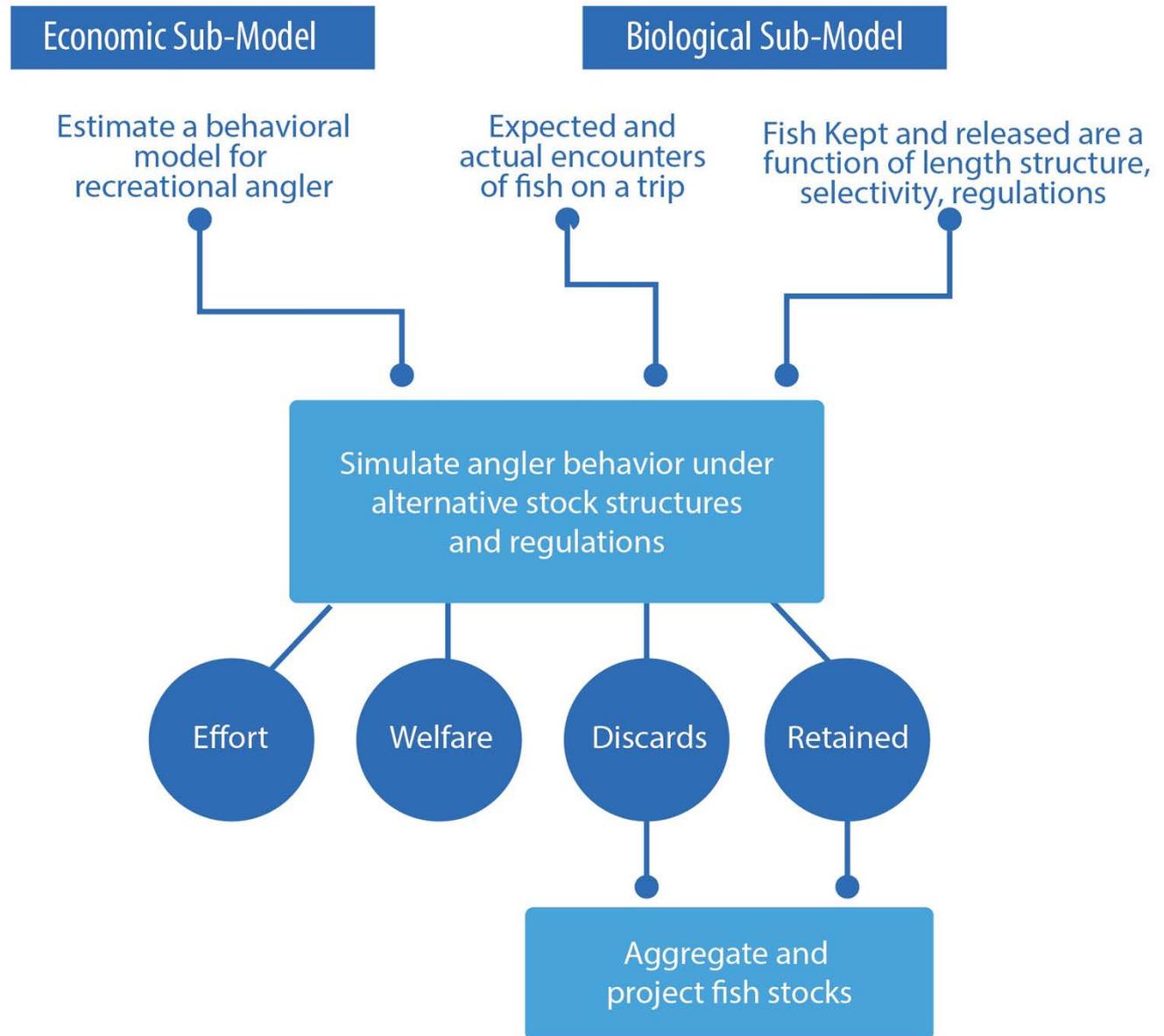
Recreational Data Collection Holdings – recent years

Most Recent Years of Economic Data Collection by Region and Sub Region



*Data for American Samoa, Guam, CNMI, and Caribbean for the for-hire industry is not available.

BLAST Decision Support Tool



Human Dimensions

A person is holding a large, silver fish vertically. To the right, a yellow fishing reel is mounted on a metal rod. The background is a clear blue sky.

Community Social
Vulnerability Indicators

Community Snapshots

Crew Studies

Tribal & Pacific
Islanders issues

Voices from
the Fisheries

Social Indicators Mapping Tool

Users

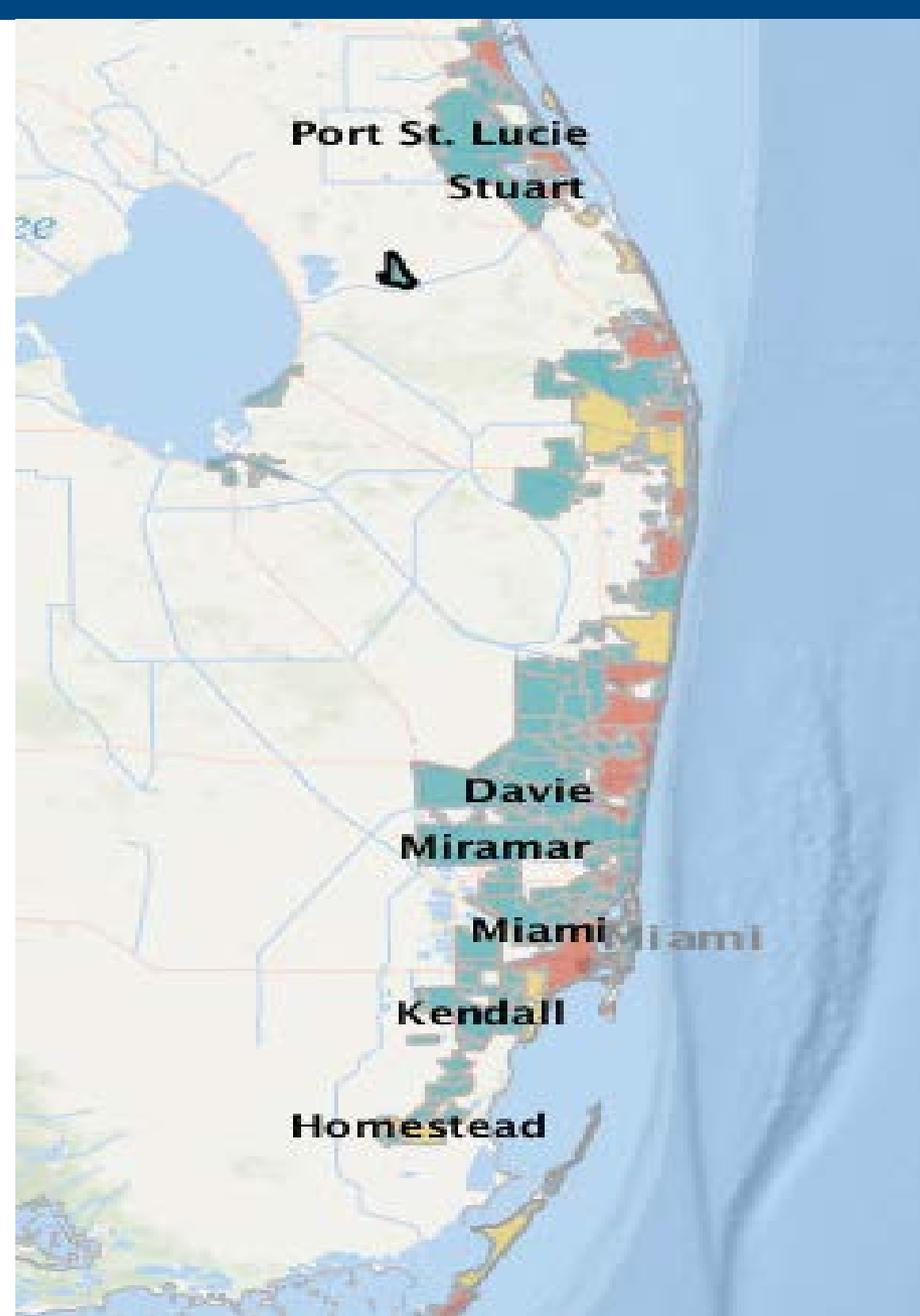
- NMFS social scientists and NEPA staff
- Council staff

Current Indicator Categories

- Social Vulnerability
- Gentrification
- Fishing Engagement & Reliance

In Progress

- Sea Level Rise Vulnerability
- Catch Share Indicators
- Climate Vulnerability



Ecosystem Research

Fisheries modeling increasingly integrated

Staff are involved in:

- National Ecosystem Modeling Workshop (NEMoW)
- Regional IEAs
- Climate Action Plans and research

Ecosystem
Service Valuation
Working Group (new)

Protected Species Economic Research

Valuation

Bycatch

*2014 Workshop Proceedings
on social science needs
and best practices*

Habitat Economic Research

MPA
Valuation

Salmon habitat
research major
focus on WC

West Coast Habitat
Economics Research Plan
(underway)

Outline

Why

Who we are / How we operate

Research Programs

Wrap-up

Engagement Towards Integration

“Integrate Social, Behavioral, and Economic science end-to-end in NOAA’s mission and priorities (NOAA SSVS)”

EBFM

Integrated Ecosystem Assessments (IEA)

Management Strategy Evaluation (MSE)

Climate Science

Unified Modeling

Regional / National / International

Internal / Academic / NGO



Questions?