



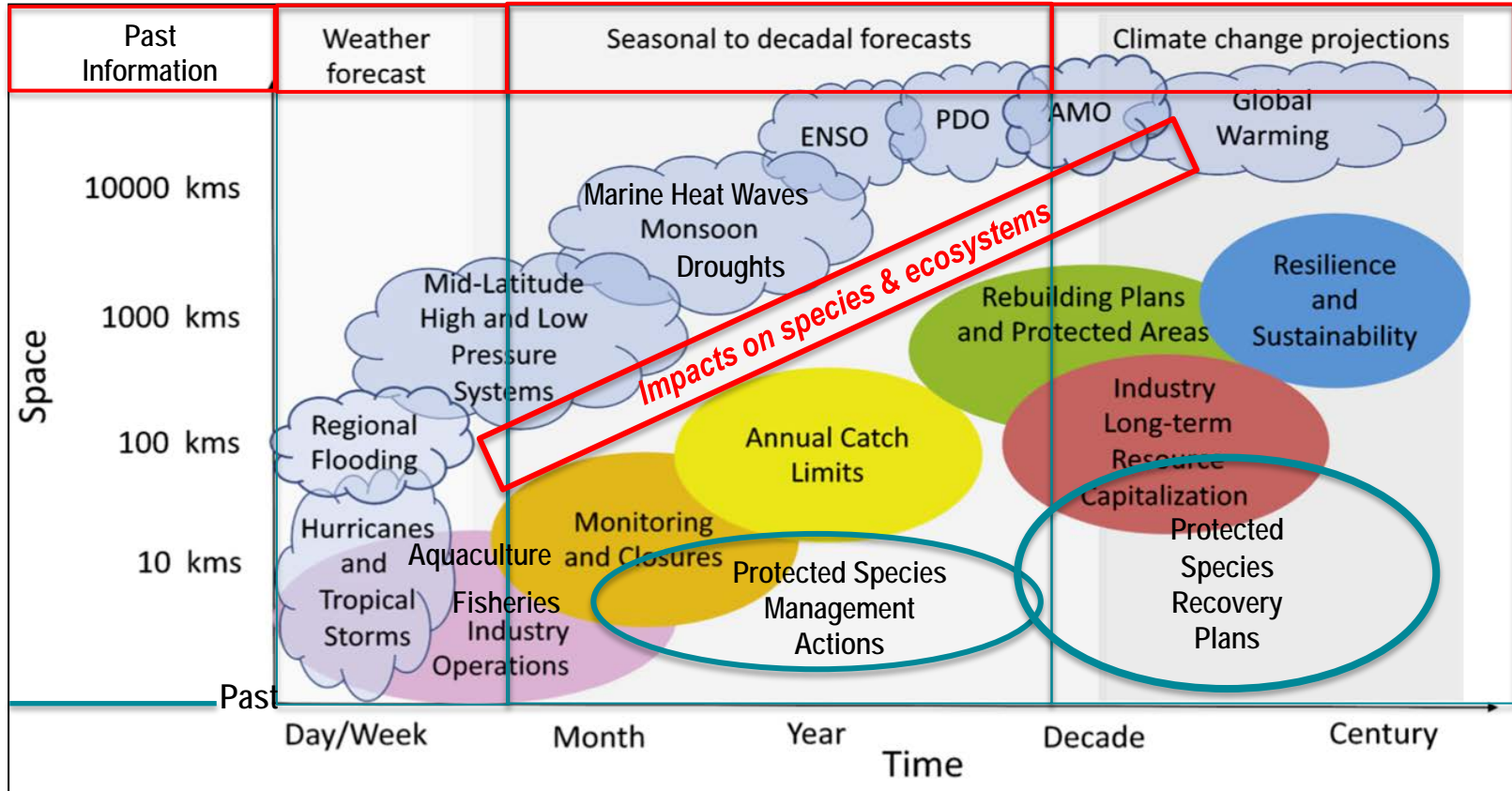
Climate and Fisheries Initiative

[CFI Webpage](#)

NPFMC SSC

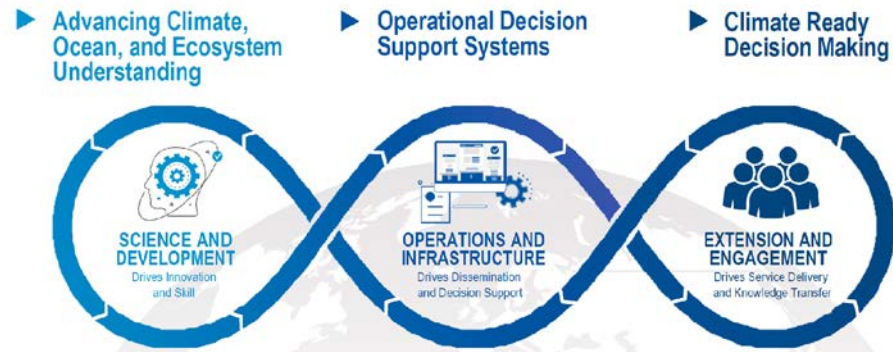
October 2021

2019 Assessment: NMFS Climate Information Requirements



NOAA's Climate and Fisheries Initiative

- **Challenge:** Climate change is impacting the nation's valuable marine and Great Lakes ecosystems, fisheries, and the communities that depend on them. These impacts are creating urgent questions that demand climate-informed answers.
- **Response:** NOAA's Climate Fisheries Initiative is a cross-NOAA effort which, when combined with existing programs, will enable the sustained operational ocean prediction and decision support system needed to reduce negative impacts and increase resilience of ecosystems and coastal communities



NOAA Climate and Fisheries Initiative (CFI)

-
- *Cross-NOAA effort (NMFS, OAR, NOS, NWS, NESDIS)*
 - *Build a operational ocean modeling and decision support system*
 - *Provide state-of-the-art ocean forecasts and projections*
 - *Provide climate-informed ecosystem projections, risk assessments and management strategies*
 - *Reduce impacts and increase resilience of LMRs and communities.*

What will CFI do?

CFI will:

- *Build an operational ocean modeling and decision support system to*
- *Provide NMFS and other decision-makers with state-of-the-art ocean forecasts, risk assessments and management options that*
- *Enable climate-informed LMR management.*

Integrated, nation-wide operational system that delivers:

- Ocean forecasts and projections
- Ecosystem projections
- Stock projections
- Risk Assessments
- Adaptation Options
- Strategy Evaluations
- Management capacity

CFI Climate, Ocean, and Ecosystem Decision Support Systems

▶ Advancing Ocean, Ecosystem, and Climate Understanding

▶ Operational Ocean, Climate, and Ecosystem Prediction Systems

▶ Climate Ready Decision Making



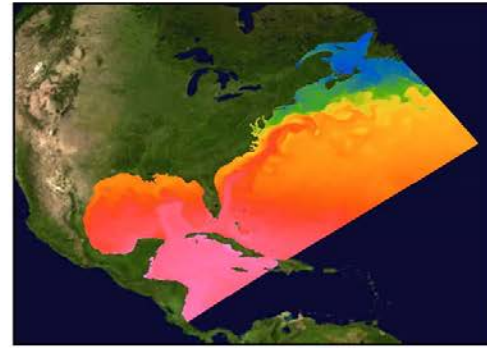
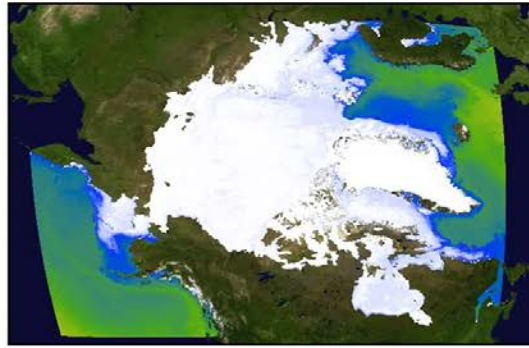
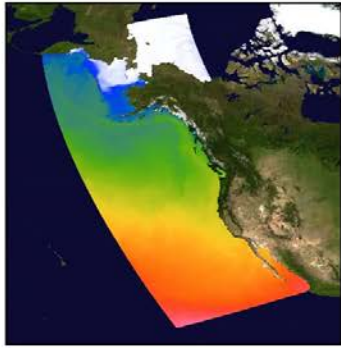
-  National Community of Practice
-  Enhanced Observations
-  Targeted Research that Fuels Innovation
-  Enhanced Ocean Modeling Capabilities


-  Regional Ocean Modeling and Prediction
-  CFI Information Hub
-  Fisheries and Climate Decision Support System
-  Ecosystem Prediction


-  Increasing Capacity for Climate Ready Decisions
-  Rapid Response
-  Climate Smart Decision Support Tools
-  Improve Surveys and Research
-  Coordinated Science and Advice



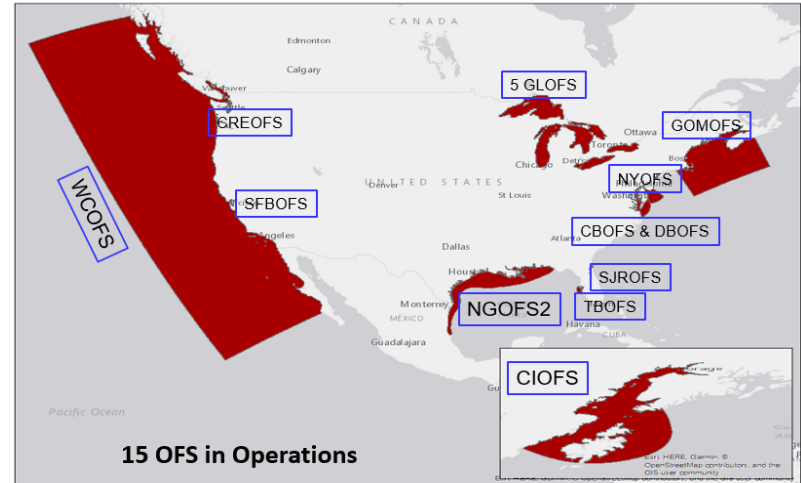
Enhanced Ocean Modeling Capabilities



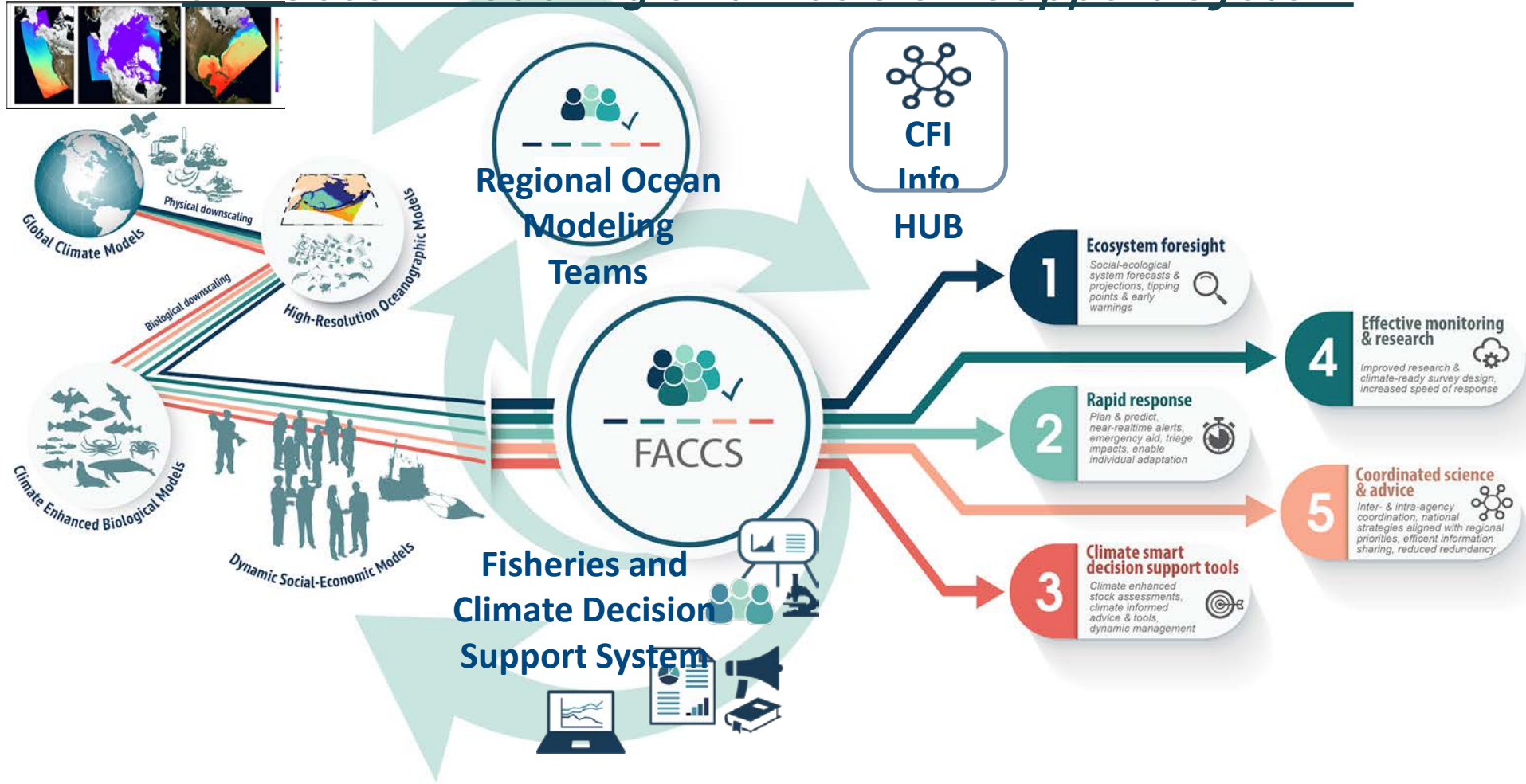
1980-04-16 sea surface temperature (°C) 

sea ice (%) 

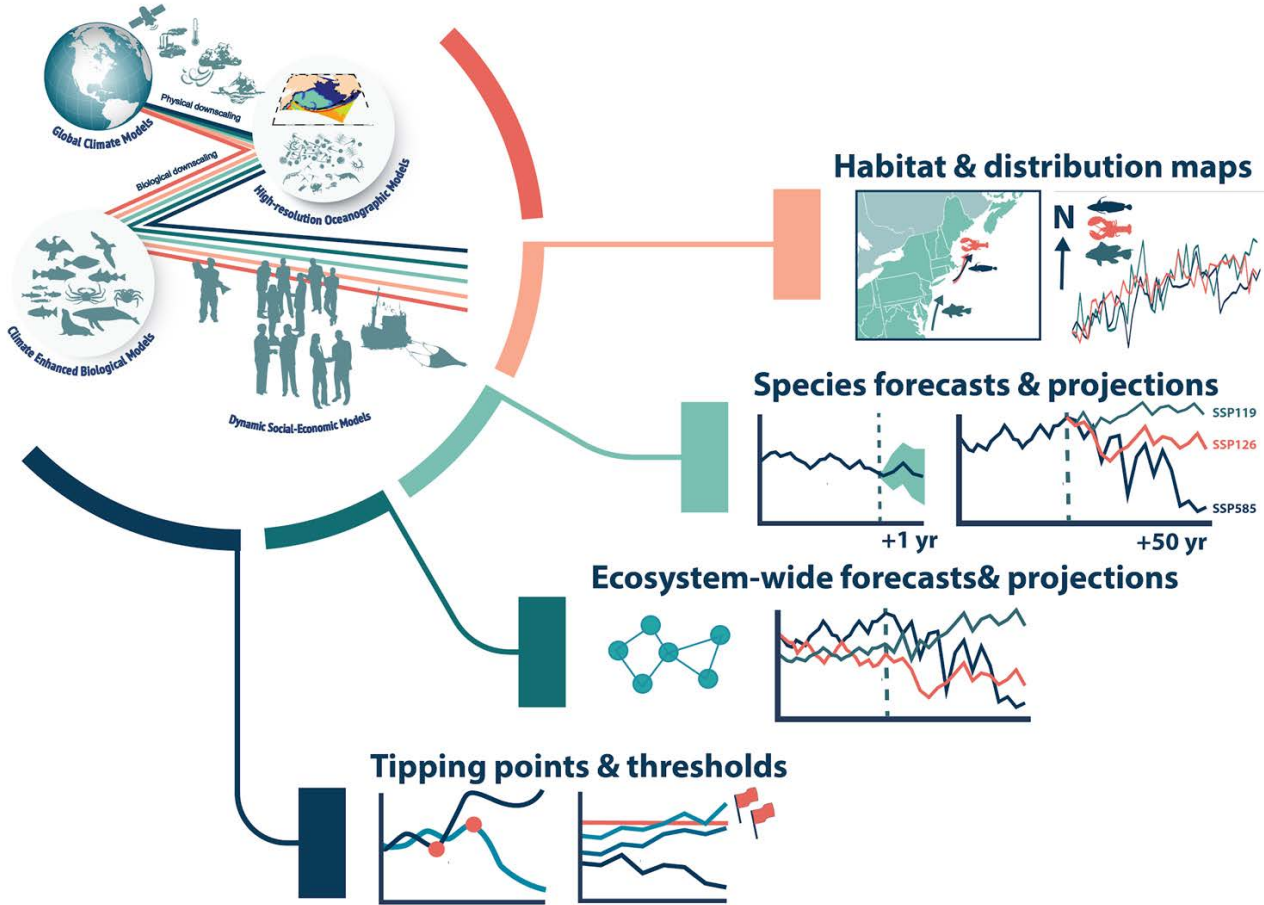
- Builds on NOAA ocean forecast (NOS) and Prediction Systems (OAR/GFDL)
- Regional Ocean Modeling Teams customize products for NMFS uses
- Holistic ocean/BGC predictions, expandable to earth system as needed
- NOAA HPC powers predictions spanning the range of ocean futures
- Robust dissemination through CFI Information Hub & national data stds



CFI Ocean Modeling and Decision Support System



FACSS Products and Services



1

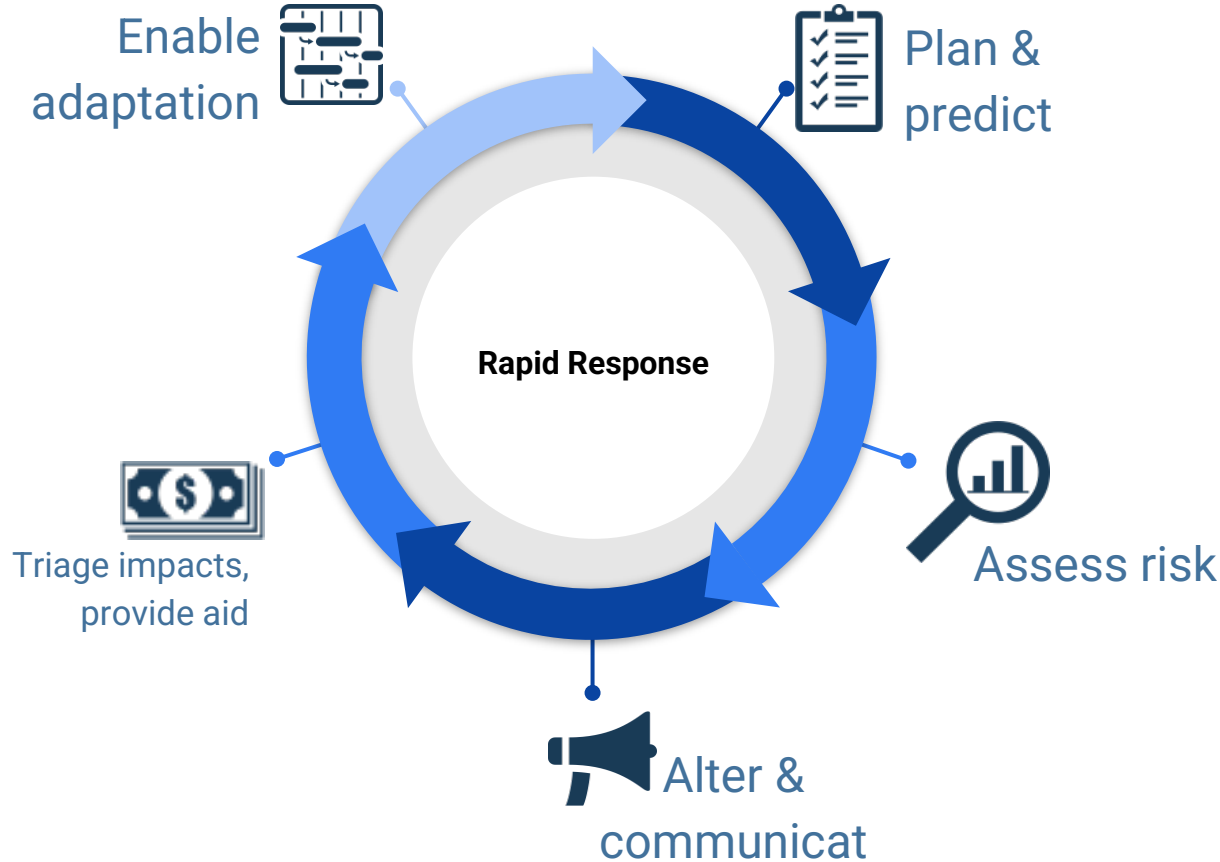
Ecosystem foresight

Social-ecological system forecasts & projections, tipping points & early warnings



- **Dedicated product line**
- **Operational delivery**
- **Customized services**

Improve Rapid Responses



1

Ecosystem foresight

Social-ecological system forecasts & projections, tipping points & early warnings



2

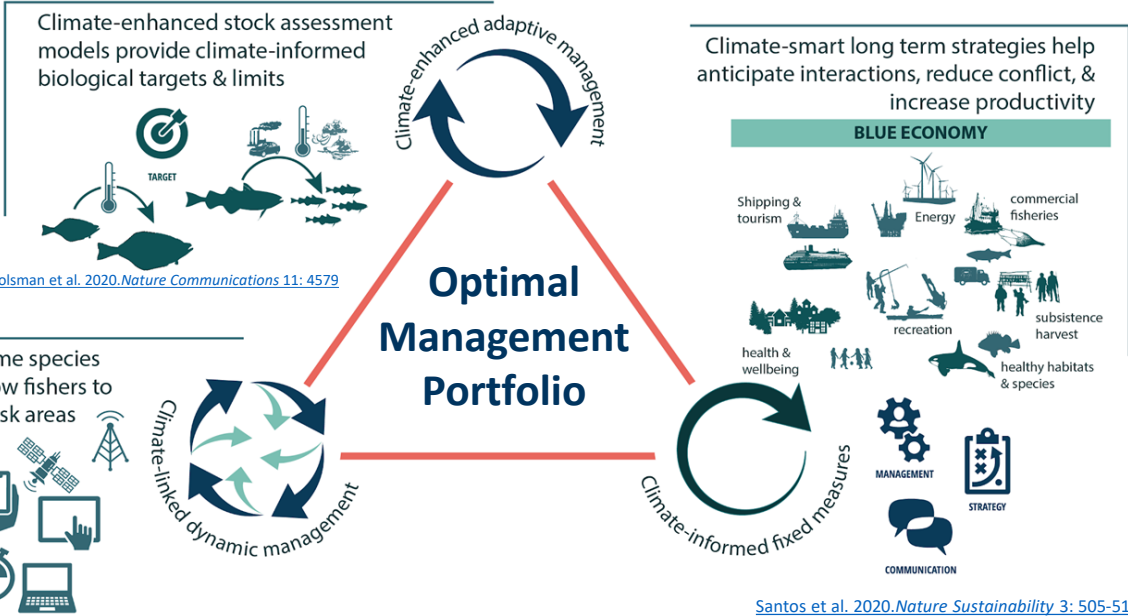
Rapid response

Plan & predict, near-realtime alerts, emergency aid, triage impacts, enable individual adaptation



- **Planning**
- **Preparation**
- **Triage**
- **Action**

Tailored Adaptation Approaches



- ## 1 Ecosystem foresight

Social-ecological system forecasts & projections, tipping points & early warnings
- ## 2 Rapid response

Plan & predict, near-realtime alerts, emergency aid, triage impacts, enable individual adaptation
- ## 3 Climate smart decision support tools

Climate enhanced stock assessments, climate informed advice & tools, dynamic management

Performance Testing



Initial funding 2021

- *Continue ROMS-MOM6 transition and testing*
 - *Pilot Projects Continue in New England, Eastern Bering Sea, Gulf of Alaska and West Coast*
- *Continued development of Arctic Grid*

Build Phase 2022

- Data Portal Teams
- Model Teams
- FACSS Teams
- Skill Assessments
- Model design specifications to meet regional needs
- Cross – NOAA Communication
- Testing and implementing tools and products

Questions?

