ForeSea – The Ocean prediction capacity of the future

Vision: **Strong international coordination and community building of the ocean prediction capacity for the future.**

Overarching goals

- Improve the science, capacity, efficacy, use, and impact of ocean prediction systems.
- Build a seamless ocean information value chain, from observations to end users, for economic and societal benefit.

=> make ocean prediction science more impactful and relevant.

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OceanPredict
Advancing the science of ocean prediction

Ocean Prediction Capacity of the Future
ForeSea

ForeSea: Transformative and beyond “business as usual”

OceanPredict:

- International coordination mechanism across national centers to exchange on & improve prediction system science
- However, the impact and relevance of advances in ocean prediction towards *societal benefits* are not quantified, evaluated, or communicated.

ForeSea's Vision:

- Strong international community building of the ocean prediction of the future that no only:
  - advances prediction science, but also
  - increases capacity, efficacy, use, and impacts of the ocean predictions systems.
- An effective and sustainable operational oceanography ecosystem environment responsive to user needs.

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ForeSea: Transformative and beyond “business as usual”

- Democratization of ocean information to enable more impactful engagement
- Creation of an effective and sustainable operational oceanography ecosystem environment responsive to user needs.
- Establishment of a framework for operational oceanography that enables scientists and stakeholders to engage and collaborate with
  - all components of the value chain and
  - the UN Decade programmes associated with these components
- Enhancement of communication of the impact and relevance of ocean prediction

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ForeSea's Vision: A Centralized Information Platform

- ForeSea will be the centralized international platform that assembles and advertises ocean prediction capabilities, its impact and where/how to find it.
- ForeSea will work at establishing a global forum to support ocean prediction collaboration at creating standards and best practices for ocean prediction products to ensure a structured seamless information flow within the operational oceanography value chain through co-development with other UN decade programs that focus on observing systems, data management, end user engagement, and capacity development.

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ForeSea: Where are we?

1. On-going discussion on the respective roles of ForeSea, OceanPredict, and the Ocean Prediction DCC.
2. The vision is that ForeSea should promote OceanPredict activies/deliverables and demonstrate their societal relevance
   - Establishment of a ForeSea project office (Funding? Collaboration with OceanPredict's office?)
   - Regular newsletter that would highlight the achievements and societal relevance of OcenPredict national teams

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ForeSea: Where are we?

- Working toward the goal of establishing a portal (strong collaboration with OP DCC) that would

a) summarize the international status and availability of ocean assimilation and prediction (blue and green - global, regional, and coastal) with regular updates of capacity, i.e. communications – conversation with the new OP operational systems working group
b) provide a description of available resources (observations and models) and how to access them
c) have tutorials on basic setups of models and data assimilation as well as their limitations
d) linkages and collaborations with other Decade programmes (linkages with CoastPredict, ObsCoDe, DITTO, MarineLife2020, etc.)
e) Highlight projects under ForeSea

OceanPredict.US
Coalescing the Nation's Operational Oceanography Enterprise

Eric Chassignet[1], Eric Bayler[2], & Paul DiGiacomo[2]
1: Florida State University
2: NOAA/NESDIS Center for Satellite Applications & Research (STAR)

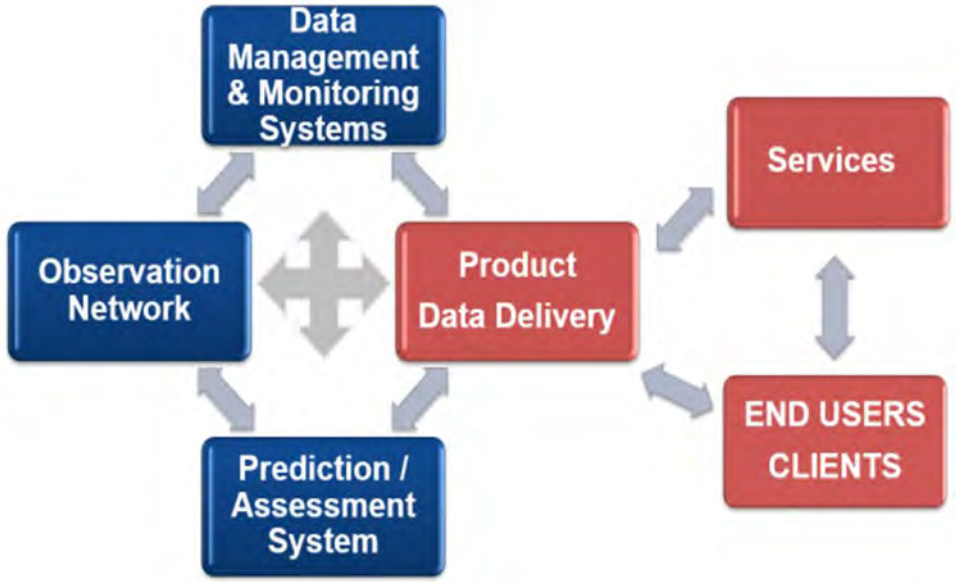
Overview

Gulf of Mexico; CDR Jeremy Adams, NOAA Corp

VISION: Establish a framework for the U.S. operational oceanography enterprise, enabling the earth system science value chain from observation to decision-making and societal benefit.

TRANSFORMATIVE IMPACT: OceanPredict.US aims coalesce the nation's operational oceanography components into a coherent national framework to integrate activities, inform decision-making, and provide greater return on ocean-observing investments.

SOCIETAL BENEFIT: OceanPredict.US directly supports the Nation's contributions to addressing the United Nation's Sustainable Development Goals and provides the foundation for the Nation's Blue Economy and Blue Environment sectors.



Ocean information value chain for Operational Oceanography
OceanPredict Strategic Plan 2021-2030

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Coalescing the Nation's Operational Oceanography Enterprise

Objectives

Gulf of Mexico; CDR Jeremy Adams, NOAA Corp

- **Coalesce** existing U.S. operational oceanography components into a coherent national enterprise
- **Establish** a transformative framework for sustained interdisciplinary operations, comparable to the Nation's weather enterprise, spanning the blue (physical), white (sea ice), and green (ecological) ocean components.
- **Enable** informed decision-making for societal benefit, greater return on ocean-related investments, and integration of activities contributing to the ocean observation value chain, spanning observations, analyses, predictions, products, and services.
- **Evolve** beyond the existing collection of ocean-related research activities and operational endeavors to a sufficient network of infrastructure and robust sustained operations at national, regional, and local levels.
- **Provide** a national operational oceanography enterprise locus for transitioning governmental, non-governmental, and private sector research to operations for value-added products and services supporting informed decision-making.

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Catalyst


Gulf of Mexico; CDR Jeremy Adams, NOAA Corp

- OceanPredict.US aims to serve as a catalyst for evolving the Nation's oceanographic capabilities and capacities into a coalesced operational oceanography enterprise, enabling national, regional, and local efforts to address the needed ocean technologies, services, and knowledge.
- OceanPredict.US aims to establish connectivity between national, regional, and local efforts, spanning governmental, academic, and private sectors, through better and more partnerships and establishing new structures to address gaps.
- OceanPredict.US encompasses:
  - Operational oceanography stakeholders and users
  - Members representing U.S. entities participating in the international OceanPredict collaboration network
  - Interested public and private entities and individuals

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Drivers

Gulf of Mexico; CDR Jeremy Adams, NOAA Corp

- National need for a clear structure of roles and responsibilities within a national operational oceanography enterprise
- National need for increased operational oceanography capacity for informed decision-making
- National need for sustained and robust operational oceanography products and services
- National need to leverage national, regional, local resources, spanning government, non-government, private, and academic sectors, to enable a coherent operational oceanography enterprise
- Need for a coherent vision for contributions of the Nation's operational oceanography enterprise to global collaborations and efforts, such as those enunciated in the UN Decade of Ocean Science for Sustainable Development

Courtesy of GOOS

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Capacity Building

Gulf of Mexico; CDR Jeremy Adams, NOAA Corp

- OceanPredict.US efforts build capacity through developing a coherent national operational oceanography sector that augments/enhances domestic and international Blue Economy sectors, as well as efforts supporting ocean and coastal safety and sustainability.
- A national operational oceanography enterprise will provide foci and non-academic operational careers in routine implementation and application of science, creating and broadening opportunities for enhanced representation in the oceanography work force and ocean-related technical fields.
- OceanPredict.US aims to develop global capacity through organizational coherency and infrastructure supporting existing Blue Economy and Blue Planet sectors, and is extensible to future foci and capabilities.

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Contact

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