

## Focus Area 1: Nature-Inclusive Design of Offshore Wind Farms – Goals and Deliverables by 12/31/2025

- Establish objectives for Nature-Inclusive Design (NID)
- Publish globally authored technical report on NID
- Have one or more NID pilot projects underway
- Create structure for valuing NID (SCoE, merit review criteria)
- Establish types of data and metadata to be collected to advance NID
- Broad and extensive participation in NID workshops and other meetings
- Work with states, federal agencies, industry, and others to advance NID
- Power-Purchase Agreements further valuing effect on the ecology

## Focus Area 1: Activities Through June of 2024 (Who, What, When, Where, Why, and How)

1. Formation of group willing to author global report on NID and create outline of report
2. Establish industry-funded project on NID
3. Respond to RFPs and FOAs to advance NID
4. Express and market importance of NID to agencies, industry, and society
5. Assess views held by different groups on offshore wind and NID
6. Hold global online workshop on NID
7. Establish <https://m-ocean.org> as a strong resource on NID
8. Identify unique strengths in the US and our region to advancing NID

## Focus Area 2: Ocean Science – Goals and Deliverables by 12/31/2025

- Establish a diverse and collaborative working group integrating various stakeholders (academia, NGOs, OSW and fishing industries)
- Come to a consensus and compile a report on:
  - definition of biodiversity in the context of NID and OSW
  - targets to use as a proxy for biodiversity (e.g., commercial, endangered, invasive species)
  - chemical, physical, and biological parameters are needed to assess changes to ocean health/function
  - metrics of success/impact and standardization goals
  - measurements and sensors currently available for measuring targets
  - sensing and technological advances needed to measure targets
  - approach to collaboratively collect, house, aggregate, and share data
- Identify and/or respond to RFPs and FOAs for ocean science innovation and technologies

## Focus Area 2: Activities Through June of 2024 (Who, What, When, Where, Why, and How)

- Activities will focus on creating, editing, and commenting on shared documents to meet three primary goals before the summer retreat:
  1. Identify and expand the ocean science working group members to include industry, academic, and NGO partners
  2. Start to come to a consensus on the definition of biodiversity and net positive ecological impact in the context of NID and offshore wind
  3. Create a draft plan for ocean/biodiversity monitoring needs:
    - proposed parameters and measurements needed to assess impact
    - monitoring and technologies needs

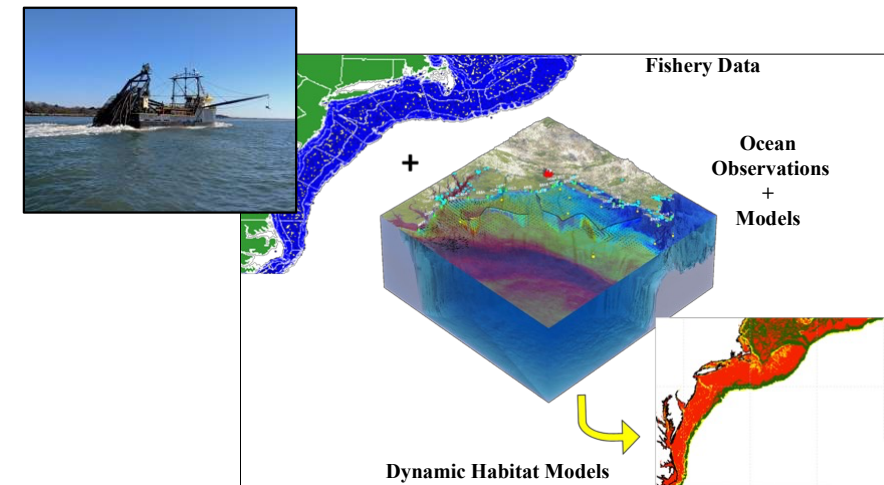
## Focus Area 3: Future Fisheries – Goals and Deliverables by 12/31/2025

### Goals

- Participation in workshops and other meetings
- Identify strategies, tools, and monitoring that will define and support the continued success of the fisheries sector
- Initial future fisheries pilot tool development strategy
- Leverage advancing future fisheries activities
- Identification of key questions and activities for first 2 years of a Type-2 Engines project

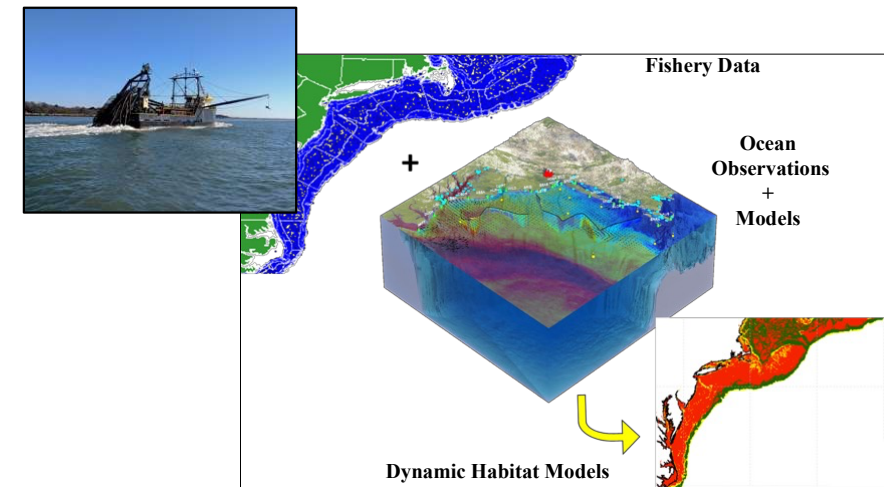
### Deliverables

- Future Fisheries workshop (Fall 2024)
  - Commercial/Recreational
  - Publication
- Initial fisheries pilot tool workshop (Spring 2025)
  - Benthic (Shellfish)/Pelagic (Finfish)
  - Development strategy to inform Type-2 proposal priorities



## Focus Area 3: Activities Through June of 2024 (Who, What, When, Where, Why, and How)

- **Clear and shared mission statement** and guidance document with near and mid-term future fisheries objectives
  - Review the literature of existing dynamic tools applied to fisheries resources
  - Develop high-level plans for both workshops
  - Assess interest by industry and other sources to
    - Define future fisheries success
    - Advance dynamic data driven tools support future fisheries
- **Identify engagement activities** to expand region-specific innovation ecosystems
  - Vision for Future Fisheries (Workshop 1)
  - Data/Model tool development (Workshop 2)
    - Environmental and fisheries data requirements
    - Appropriate AI/ML approaches
    - Dynamic habitat projections
    - Technology Innovation
- **Reach out** to organizations to participate in workshops
  - State and Federal fisheries regulatory agencies
  - Regional fisheries management councils
  - Those establishing data collection practices
  - Fisheries and ocean scientists and modelers
  - Fisheries economists
  - Funding agencies



## Focus Area 4: Equitable Education and Training– Goals and Deliverables by 12/31/2025

- Education and Training-Initial Pathway Map
  - Establish map of pathways K-Gray for OSW Education and Training programs throughout the MOCEAN Region
- Pilot projects (3-5)
  - Examples of successful, equitable strategies (leverage existing MOCEAN programs and add evaluation)
  - Poll MOCEAN partners to identify exemplary programs
  - Examples could include: Rutgers 4H, UMass Boston/SeaAhead Inclusive Internship, Community Youth Engagement, Specific Lesson Plans/Activities, Summer Camp
- OSW microcredential pilots
  - Co-developed between Industry and Academia
  - Examples could include Marine Technology Society grant and UMass Boston/Avangrid modules
- Collaborative strategy designs for Type-2 programs
  - Example Communities, Map of Programs and Pathways, Key Partners
- Leveraged funding for some activities
  - Write Proposals
  - EET Strategy for specific community/Convergent Project
- Commitments from partners
- Estimates of costs and scale (2 year)



## Focus Area 4: Activities Through June of 2024 (Who, What, When, Where, Why, and How)

- Equity Workshop
  - Agreement that equity comes first: Vision-How would you feel? what does it look like?
  - Definitions and Training
- Poll MOCEAN Partners to identify existing OSW education and training programs throughout the Region
- Engagement of key partners and stakeholders
  - Identify Who? Who is missing? What are common values for what is IN in MOCEAN?
  - Establish effective communication strategies
  - How do we get to know each other? Mutual learning of expertise and opportunities
- Strategic Planning Workshop
  - Common understanding of Type-2 EOT goals and activities
  - Identification of key barriers
  - What is demand for OSW job?
  - Consider designing convergent project-New Bedford
- Generate Excitement





## Focus Area 5: New Blue Economy and Outreach – Goals and Deliverables by 12/31/2025

1. Establish objectives for New Blue Economy outreach, including Identification of specific blue economy and outreach initiatives to develop and explore
2. New partnerships in development related to specific and inclusive outreach aspects of the new blue economy (industry, start-ups, small businesses, OSW-enabling tech, govt)
3. Broad and extensive participation in blue economy-related workshops and other meetings
4. Publish report or section of report on new blue economy and OSW in New England – specifically on commercialization of current bluetech startups/companies and future innovation ecosystem needs
5. Publish op-ed or similar through New England Aquarium PR efforts on new blue economy, bluetech, ocean-climate tech to raise public awareness of a responsible blue economy that is inclusive of NID of OSW and supporting efforts to responsibly use and conserve our ocean's resources
6. With others in MOCEAN, assist in developing a strategy for formatting existing data to be easily accessible, interpreted, and understandable by non-scientific audiences
7. Workshop for new blue economy as part of culminating symposium?

## Focus Area 5: Activities Through June of 2024 (Who, What, When, Where, Why, and How)

1. Develop a working definition of “New Blue Economy” or other term, including how it interrelates with OSW, NID, sustainability, and equity/inclusivity
2. Begin to identify audiences and pathways for inclusive new blue economy outreach and levels of engagement needed
3. Assemble existing resources (video, print, basic terminology) for outreach audience to become literate/educated on “new blue economy,” OSW and NID
4. Participate in conferences and other externally organized events related to new blue economy
5. Join Oceantic (OSW business community) for connecting enabling OSW bluetech services w existing community
6. Identify specific blue economy and outreach initiatives to develop and explore

# New Blue Economy

- The blue economy is the “**sustainable use** of ocean resources to benefit economies, livelihoods and **ocean ecosystem health.**” – World Bank
- “The blue economy encompasses all economic activities that are directly or indirectly linked to the oceans, seas, and coasts. Often defined as the ‘**sustainable use** of ocean resources for economic growth, improved livelihoods, and jobs,’ it aims to **harmonize economic growth with environmental preservation through sustainable practices.**” – Blue Robotics
- “A **sustainable and equitable ocean and coastal** economy that **optimizes advances in science and technology** to create value-added, **data-driven economic opportunities and solutions** to pressing societal needs.” -NOAA

## Focus Area 6: Bluetech-Innovation Workforce Development – Goals and Deliverables by 12/31/2025

**Vision:** Define and promote STEM based venture innovation to realize a less impactful but more efficient, biodiverse + inclusive Offshore Wind sector in New England.

How does New England become the global COE for bluetech?

1. Design thinking process of what the ‘New’ OSW Economy looks like: Supply + Value Chain which *define* the skills needed for the ‘working waterfront of the future’: Take a spatial view (try not to be bounded by existing paradigms)
2. Work with key stakeholders focusing on defining bluetech innovation that *maps to* New England’s STEM based venture core competencies.
3. Engage industry for “Voice of the Customer” (VoC) and associated innovation/technology that is needed on New England’s working waterfront. Report on ‘VoC’ collected by partners from the public sector and community: environmental, econ dev, DEI
4. Execute on 1-2 high profile, demonstrative programs: ‘US Fishing Vessel of the Future’ reverse pitch competition

## Focus Area 6: Activities Through June of 2024 (Who, What, When, Where, Why, and How)

1. Outline to define how STEM based venture innovation can make the Northeast's emerging OSW sector more efficient, less impactful, more biodiverse and be a new global COE (competitiveness)
2. From item 1) deduce what are the 'future' workforce skills
3. VoC with industry and the public sector on priority needs and challenges that is applicable to future STEM based venture innovation
4. Working with MOCEAN and external partners/stakeholders, ideate initial constructs on how the emerging OSW sector can be more diverse, inclusive and equitable (DEI)
5. Participate in conferences and other externally organized events related to new blue economy
6. Explore, outline, inform and discuss with MOCEAN stakeholders on how 2024 bluetech related federal grant submissions from New England (EDA Tech Hubs – Bluetech from the PVD MSA which includes New Bedford) are synchronized with MOCEAN NSF Type I & II vision and SoW. Review the regions map of testing, piloting and state program infrastructure to support bluetech innovation
7. Ideate with MOCEAN stakeholders on a possible 'reverse pitching' or similar program to engage the regional seafood ecosystem

### Includes:

1. Working with MOCEAN stakeholders
2. Broad and extensive participation in blue economy-related workshops and other meetings
3. Access SeaAhead's bluetech innovation platform, domain experience and global network



## Goal 1: Objectives and Deliverables by 12/31/2025:

*“Map Existing and necessary regulatory framework, policy incentives and regional impact targets to support commercial investment in nature-inclusive OW farms”*

- Develop a proposed consensus-driven policy framework for nature inclusive US offshore windfarms
  - Present at the DC Symposium
  - Market / distribute widely (possibly as revised by symposium outcomes?)
- Establish MOCEAN as an acknowledged thought leader and visionary collaborator across industry, government, research institutions and community-based economic development partners in the US.
  - Partner with the global network of champions for NID in the offshore wind sector
- Create a robust alliance with fisheries and aquaculture industries
- Identify regional impact targets for NID (e.g biodiversity, fisheries habitat, etc.)
  - Based on work in multiple FAs: Ocean Science, Future Fisheries....
- Identify associated regional targets for commercialization in NID
  - Based on work in multiple FAs: Nature Inclusive Offshore Wind Farms, Blue Economy

## Goal 1: Activities Through June of 2024 (Who, What, When, Where, Why, and How)

- Preliminary mapping of programs/organizations/companies advancing NID in offshore wind in the US and globally; introductory engagement with these entities.
- Identify individual champions of NID in the offshore wind industry, regulatory community, NGOs to advise MOCEAN policy-related activities; determine effective communication strategy with these advisers.
- Develop a draft sector-based survey approach for broader input (e.g. fisheries, policy makers, OW industry, etc.)
- Develop a draft 'state of the practice' document benchmarking global policy approaches to NID, biodiversity enhancement, etc.
  - Include barriers/ obstacles in the US
- Establish efficient communication flow across MOCEAN Working Groups.
- Create a Draft MOCEAN communication plan for consistent delivery of key messaging (e.g. define NID, future fisheries, articulate MOCEAN vision)
  - Emphasize story-telling – make it tangible, emotional, inspirational; include climate change; respond to stakeholder stories with empathy (e.g. “OW, aquaculture are taming the wild ocean”)
  - Identify key audiences, including agency leadership/regulators/elected officials....
  - Include message-testing for different audiences
  - Include opportunities for outreach on multiple platforms, conference presentations, op eds....

## Goal 2: Innovation Ecosystem and Economic Development Goals and Deliverables by 12/31/2025

- **Innovation Ecosystem Goals: Tie directly to industry needs**
  - **Set vision** for a successful MOCEAN Innovation Ecosystem 5 years out
    - **Who** are the stakeholders?
    - **What** are the gaps that require innovation, including not just technology, but policy, regulation, and economic gaps requiring innovation
    - **Why** Innovation is required: Incremental or transformational, over what time period, and where will MOCEAN focus
  - **Why MOCEAN?:**
    - **What sets us apart**, why are we uniquely positioned to leapfrog status quo
    - **What are the metrics of success**
      - Jobs created across the income and skills spectrum
      - Emotional and Social impact
      - Economic impact on local, state, regional, and national levels what does the “new economy” look like
  - **Establish Ocean Sandbox** to bridge gap between those in need with those with ideas
    - Pilot/demonstrate sandbox in multiple areas, e.g. NID wind turbines, scour/cable protection, future fisheries (see backup for other ideas)
    - Connecting local coastal SMBs(Small & Medium size businesses) and entrepreneurs with innovation ecosystem opportunities
- **Economic Development Goals**
  - **Set vision** for success: what will coastal communities experience economically, emotionally, and socially
    - **Identify stakeholders and roadmap to vision**
    - **Established relationships** with federal, regional(e.g. MAPC), local and state Economic Development Agencies (EDAs) and other agencies for all of the states within MOCEAN’s region that can be used to launch initial projects and support joint-funded projects for the submission of the next Type-2 Engines proposal
    - **Articulate metrics of success**, including who is benefiting, how, and why MOCEAN is a key enabler
      - **Jobs created across income, skill, and life stage**, ensuring equitable opportunities for all
      - Be expansive in setting vision to **include new economic models**, e.g. aquaculture ranching
      - **Proactively address upskilling and reskilling** existing generation to “new economy”
      - Link to workforce development goals including microcredentialing and other reskilling methods
  - **Baseline economic white paper** transitioning from Economic Cost of Energy to Social Cost of Energy optimization
  - **Identify specific pilot programs** demonstrating new economic models and principles



## Goal 2: Activities Through June of 2024 (Who, What, When, Where, Why, and How)

- **Offline research**
  - Review blue-economy development efforts to date in the U.S. and in Europe that are pertinent to MOCEAN (NJ, Delaware, as well as MA, VA)
  - Identify key EDAs within MOCEAN's region, obtain contact information, and make initial contact via email
  - Host zoom meetings with interested groups, and have in-person meetings where beneficial to build relationships and advance the strategic plan and building of the innovation communities
- **In person site visits**
  - Meet with select regional/local EDAs to hear their challenges/concerns (e.g. how does MOCEAN map to current public leadership)
    - Connect with NJ(Wind Institute), Delaware(Matt)
    - Work with the Commonwealth of Massachusetts, MassCEC, the New Bedford Ocean Cluster, the New Bedford Mayor's office, and others to create plans for pilot EDA investment with specific Economic and Workforce Development objectives
  - Meet with fisheries
    - Connect with RODA
    - "Go out on fishing boat"
- **Ideation Workshops to seed Summer Workshop**
  - Connect with "Future of Fishery" Focus Group
  - Strawman strategy
  - Strawman Ocean Sandbox
  - Strawman ED pilot

## Goal 2: Backup

- Leverage Ocean Sandbox to create innovation ecosystem maps around key initiatives including:
  1. Nature-inclusive scour protection
  2. Nature-inclusive cable protection systems
  3. Nature-inclusive foundations
  4. Nature-inclusive features between offshore wind turbines
  5. Future fisheries and aquaculture
  6. Environment and fisheries data: baseline and dynamic
  7. Existing training programs
  8. Connecting Bluetech services with offshore wind, ocean health, and conservation practices

## Goal 3: Testbed Framework

**Definition of a Testbed:** *“A testbed (or test bed) is a platform for conducting rigorous, transparent, and replicable testing of scientific theories (or hypotheses), computing tools, and new technologies”.* This platform includes the ability to compare the efficacy of competing technologies, or validate one technology with another. Testbeds are dominantly physical (laboratory and field), but could be analysis platforms or a complex system consisting of multiple elements. An example of a testbed field assessment that is outside of the scope of MOCEAN is the comparative assessment of LiDAR systems using anemometers on met-mast towers.

### **Issues Affecting the Development and Use of Testbeds:.**

- Intellectual property
- Concern over misinterpretation or misuse of data
- Motivation
- Projects on tight timelines
- Cost and funding
- Certification and risk of failure

### Goal 3: Testbed Framework Goals and Deliverables by 12/31/2025

For MOCEAN, what are the examples of testbeds that we want to create over the next two years for the evaluation of theories (or hypotheses), tools, new technologies, methods, etc. These can be associated with pilot projects that we expect may get underway in the next two years or new convergent projects for the next round of the NSF Engines program or another source of funding

Theories/hypotheses/questions to be addressed; Tools and technologies; Methods and Approaches

### Goal 3: Activities Through June of 2024 (Who, What, When, Where, Why, and How)

Determine the specific testbeds that we wish to design for projects that could get underway (or be planning) across all of the Focus Areas in the next six months?

Advance our thinking on Test Bed Frameworks through broader engagement?